TNPL

Tamilnadu Newsprint and Papers Limited

(A Government ef Tamilnadu Enterprise)

ICSI
NATIONAL AWARD
FOR EXCELLENCE IN
CORPORATE GOVERNANCE

Kagithapuram - 639 136, Karur Dist. Tamilnadu, India.
Phone : (0091) 04324 - 277001 to 277010 (10 Lines)
Fax : (0091) 04324 - 277025 PMD : 04324 - 277027
HR : 04324 - 277273 Cell : 94860 41341 to 41343

ENV/112/23

November 22, 2023

Addl. Principal Chief Conservator of Forests (C)
Ministry of Env., Forest and Climate Change
Regional Office (SEZ), I[st] and II[nd] Floor, Handloom Export Promotion Council,
34, Cathedral Garden Road, Nungambakkam,
Chennai - 34

Dear Sir,

Sub: Submission of six monthly compliance reports for tbe conditions stipulated in the Environmental clearances (EC)-Reg.

Ref: (i) MoEF EC file No. J-11011/710/2007-IA,II (I) dt. 11.02.2013
(ii) MoEF EC file No.J-11011/710/2007-IA II (I) dt. 11.12.2008
(iii) MoEF EC file No.J-11011/375/2005-IA-II (I) dt. 10.04.2006

This rafers to tbe ECs issued for TNPL for the for the implementation of Deinking Pulp plant (DIP) & Upgradation of tbe Captive co-generation (UCCG), Mill Expansion Plant (MEP) and Mill Development Plan (MDP) vide reference ref (i), ref (ii) and ref (iii) respectively.

In compliance to the general condition stipulated in tbe respective ECs, the status of six monthly compliance report against the special and general conditions stipulated in the ECs for the period between 01/04/2023 and 30/09/2023 is submitted as detailed below:

Sl No	Project file No./ Date	Name of the project	Status of compliance on EC conditions submission Parivesh portal	Remarks
01	J-11011/710/2007-IA,II(I) dt. 11.02.2013	Installation of deinking plant and upgradation of captive co-generation plant	Compliance to the conditions along with supporting documents as above were uploaded in Parivesh portal on 22/11/2023.	A copy of the EC compliance report along with relevant annexure downloaded from the Parivesh portal is submitted along with letter.

Sl No	Project file No./ Date	Name of the project	Status of compliance on EC conditions submission Parivesh portal	Remarks
02	J-11011/710/2007-IA II (I) dt. 11.12.2008	The expansion of Pulp and Paper Mill 2,45,000 to 4,00,000 TPA by installation of new Paper Macbine 1,55,000 TPA and balancing of Hard wood ahd bagasse Pulp Mill Pulp Mill 300 to 330 and 500 to 550 TPD.	Compliance to the conditions along with supporting documents as above were uploaded in Parivesh portal on 22/11/2023.	A copy of the EC compliance report along with relevant annexure downloaded from the Parivesh portal is submitted along with letter
03	J-11011/375/2005-IA-II (I) dt. 10.04.2006	Expansion of Paper Production from 2,05,000 MTPA to 2,45,000 MTPA and production of 45,000 MTPA market pulp at TNPL, Kagitbapuram, Karur District	Compliance to the conditions along with supporting documents as above were uploaded in Parivesb portal on 22/11/2023.	A copy of the EC compliance report along with relevant annexure downloaded from tbe Parivesb portal is submitted along with letter.

This is for your kind information and records.

Thanking You.

Yours faithfully,
For Tamilnadu Newsprint and Papers Limited,

22/11/23

Executive Director (Operations) - FAC

CC: (1) The Member Secretary, SEIAA, Saidapet, Cbennai – 600 005.
(2) The Member Secretary, TNPCB, Guindy, Chennai.
(3) The Regional Directorate, CPCB, Cbennai.
(4) The Joint Chief Environmental Engineer, TNPCB, Salem.
(S) The District Environmental Engineer, TNPCB, Katur

Your application has been Submitted with following details	
Proposal No	IA/TN/IND/6221/2007
Compliance ID	21035743
Compliance Number(For Tracking)	EC/M/COMPLIANCE/21035743/2023
Reporting Year	2023
Reporting Period	01 Dec(01 Apr - 30 Sep)
Submission Date	27-11-2023
IRO Name	P Subramanyam
IRO Email	agmu102@ifs.nic.in
State	TAMIL NADU
IRO Office Address	Budgam
Note:- SMS and E-Mail has been sent to P Subramanyam, TAMIL NADU with Notification to Project Proponent.	

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change

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View Compliance Report at Project Proponent

Proposal Details

Proposal No
IA/TN/IND/6221/2007
Category
Industrial Projects - 1
Proposal Name
Installation of 300 TPD Deinked Pulp Line (DPL) and up-gradation of Captive Co-generation Plant (CCP) at Kagithapuram
Plot / Survey/ Khasra No.
Village(s)
Sub-District(s)
State
TAMIL NADU
District
KARUR
MoEF File No
J-11011/710/2007-IA.II(I)11/02/2013
Name of the Entity/ Corporate Office
Tamil Nadu Newsprint and Papers Limited
Entity's PAN
NA
Entity Name as per PAN
NA
Entity details mentioned above is correct ?
Agree

Covering Letter

Covering Letter
Click to View

Compliance Reporting Details

Reporting Year
2023
Reporting Period
01 Dec(01 Apr - 30 Sep)
Remark(if any)
EC COMPLIANCE STATUS REPORT PERTAINING TO DIP AND UPGRADATION OF CAPTIVE CO-GENERATION PLANT AND FOR THE PERIOD ENDING 30/09/2023

Details of Production and Project Area

Date of Commencement of Project/Activity
04-01-2013

	Project Area as per EC Granted(ha.)	Actual Project Area in Possession(ha.)
Private	151.76	2.43
Revenue Land	0	0
Forest	0	0
Others	0	0
Total	151.76	2.43

PRODUCTION CAPACITY							
Sr.No.	Name of the Product	Units	As per EC Granted	As per CTO Granted	CTO ID	Valid Up To	Production during last financial year
1	Writing and Printing papers	Tons per Annum (TPA)	480000	480000	2307138725381	31-03-2023	420793

Conditions

Specific Conditions

Sr.No.	Condition Type	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents	
1	Statutory compliance	i. Compliance to all the specific and general Conditions stipulated for the existing plant by the Central/State Government shall be ensured and regular reports submitted to the Ministry and its Regional Office at Bangalore.	PPs Submission	The requisite compliance reports are being submitted to relevant authorities as part of six monthly EC compliance reports through email as well as hard copies. Complied Attachment: NA
2	AIR QUALITY MONITORING AND PRESERVATION	ii.The project authority shall install multi cyclones, wet scrubbers with the boilers to achieve the particulate emission below 50 mg/Nm3. The emissions from chemical recovery section shall be controlled through primary and secondary venturi scrubbers.	PPs Submission	TNPL has installed Electro Static Precipitator (ESP) in the Chemical Recovery Section to mitigate the boiler particulate emission. The stipulate the norms for the boilers in the chemical recovery section are achieved by operating ESP?s efficiently with appropriate periodical maintenance. The same is evidenced from the Continues Emission Monitoring Data ? Connected with care air centre of TNPCB & Periodical TNPCB Stack Survey ROA & NABL accredited & MoEFCC recognized Third Party Lab data. Latest TNPCB and NABL accredited & MoEFCC recognized Third Party Lab Stack survey ROA is submitted as Annexure I. Complied Attachment: Click to View
3	AIR QUALITY MONITORING AND PRESERVATION	iii. Data on ambient air, stack and fugitive emissions shall be regularly submitted online to Ministry?s Regional office at Bangalore, SPCB and CPCB as well as hard copy once in six months and display data on RSPM, SO2 and NOx outside the premises at the appropriate place for the general public.	PPs Submission	The said reports are being submitted to relevant authorities along with six monthly EC compliance reports through email as well as hard copies. Real time value display available near main gate. Summary of Ambient and Stack CEMS Data submitted as Annexure II. Complied Attachment: Click to View
4	Statutory compliance	iv. In case of treatment process disturbances/failure of pollution control equipment adopted by the unit, the respective unit shall be shut down and shall not be restarted until the control measures are rectified to achieve the desired efficiency.	PPs Submission	TNPL has a dedicated captive power plant. A separate feeder from the TG sets is connected directly to pollution control equipments systems to ensure continuous power supply during the emergencies. Complied Attachment: NA
5	WATER QUALITY MONITORING AND PRESERVATION	v. The total water requirement (including existing) shall not exceed 52,800 m3/day. The industry shall ensure the compliance of the standards for discharge of the treated effluent from the unit as stipulated under the EPA rules or SPCB whichever is more stringent. The company shall make efforts to limit the water consumption upto 75 m3/tonne of product. Adequate steps including use of modern RO/UF based technologies should be used to increase recycling and reduce water consumption.	PPs Submission	Average total & Sp. water consumption during review period are 33,656 m3/day and 27 m3/T of Product respectively. TNPCB and NABL accredited & MoEFCC recognized Third Party Lab is being conducting Effluent water quality analysis once in month and relevant reports are submitted to concerned authorities along with respective EC compliance report. TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab effluent water analysis report ROA is submitted as Annexure III. The value of treated effluent is well within the TNPCB norms. Complied Attachment: Click to View
6	WATER QUALITY MONITORING AND PRESERVATION	vi. Adequate number of influent and effluent quality monitoring stations shall be set up in consultation with the State Pollution Control Board and regular monitoring shall be carried out for all relevant parameters to maintain the effluent treatment efficiency. Online flow meter, pH meter, conductivity meter etc. shall be installed. The report shall be submitted to Ministry?s Regional Office at Bangalore SPCB and CPCB.	PPs Submission	Adequate no. of sampling stations available to monitor Treated effluent & Sewage quality through TNPCB, NABL accredited & MoEFCC recognized Third Party Lab & online water quality station installed and in operation. Summary of online Water Quality Watch (WQW) data attached as Annexure IV. Complied Attachment: Click to View
7	WATER QUALITY MONITORING AND PRESERVATION	vii. Ground water quality study in and around the project area shall be conducted and report submitted to Ministry?s Regional Office at Bangalore, SPCB and CPCB.	PPs Submission	TNPCB and NABL accredited & MoEFCC recognized Third Party Lab is being conducting ground water quality analysis once in three months and relevant reports are submitted to concerned authorities along with respective EC compliance report. TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab Ground water analysis report submitted as Annexure V. Complied Attachment: Click to View
8	WATER QUALITY MONITORING AND PRESERVATION	viii.The company shall install Oxygen Delignification (ODL) Plant and shall maintain AOX below 1kg/tonne of paper production.	PPs Submission	ODL were installed in Hard wood fiber line and chemical bagasse plant in 2008 and 2010 respectively. AOX and TOC are measured once in a month through NABL accredited & MoEFCC recognized Third Party Lab. An AoX value varies from 0.03 to 0.09 Kg/T against 1 kg/ton of paper production. Copy of AoX report submitted as Annexure VI. Complied Attachment: Click to View
9	WASTE MANAGEMENT	ix. ECF technology shall be used and lime kiln shall be installed to mange lime sludge.	PPs Submission	ECF installed in 2008 and is in operation. Lime Kilns I & II were installed during 1996 and 2008 respectively and are under continuous operation. Complied Attachment: NA

10	WATER QUALITY MONITORING AND PRESERVATION	x. The Company shall submit the comprehensive water management plan along with monitoring plan for the ground water quality and the level, within three months from date of issue of this letter.	PPs Submission	TNPL is periodically submitting its updated comprehensive water management plan along with respective six monthly EC compliance reports. A copy of latest comprehensive water management plan report is submitted as Annexure VII. Complied Attachment: Click to View
11	WASTE MANAGEMENT	xi. The ash generated from the plant shall be disposed of in accordance with the provisions of the Fly Ash Notification, 2009.	PPs Submission	Fly ash utilized in TNPL cement plant and balance, if any is being sent to fly ash bricks manufacturing units. Fly ash Quarterly reports are submitted to TNPCB authorities. The latest fly ash submission details is enclosed as Annexure VIII Complied Attachment: Click to View
12	WASTE MANAGEMENT	xii. The project authority shall dispose to hazardous waste as per the provision of Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008.	PPs Submission	TNPCB issued Hazardous Wastes Authorization No 22HFC42010886 dated 29/08/2022 with validity 31/03/2027 for Main Plant and No 22HFC42552706 dated 04/11/2022 with validity 31/03/2027 for Captive Power Plant. Hazardous Wastes disposal is done as per authorization. Complied Attachment: NA
13	GREENBELT	xiii.The company shall develop green belt in 33% of the total land as per the CPCB guidelines to mitigate the effect of fugitive emissions.	PPs Submission	The unit has developed and maintain green belt with 38.42% for paper plant and 42.37% for Captive Power Plant. A Copy of Green Belt report for current review period is submitted as Annexure IX. Complied Attachment: Click to View
14	Human Health Environment	xiv.Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	PPs Submission	OHC is provided with required infrastructure and functioning four resident doctors with requisite paramedical staff and maintaining health records as per Factory Act. A Copy of OHC report for current review period is submitted as Annexure X. Complied Attachment: Click to View
15	Risk Mitigation and Disaster Management	xv. The Company shall make the arrangement for protection of possible fire hazardous during manufacturing process in material handling.	PPs Submission	Necessary arrangements are being made towards protection of possible fire hazardous during manufacturing process in material handling. The updated fire protection facilities is available in TNPL is submitted as Annexure XI. Complied Attachment: Click to View
16	Corporate Environmental Responsibility	xvi.All the recommendations made in the Charter on corporate Responsibility for Environment Protection (CREP) for the pulp and paper sector shall be strictly implemented.	PPs Submission	CREP recommendations are being implemented and copy of report for current review period is submitted as Annexure XII Complied Attachment: Click to View
17	PUBLIC HEARING	xvii. All the commitments made to the public during Hearing / Public Consultation meeting held on 18th May, 2012 shall be satisfactorily implemented and a separate budget for implementing the same should be allocated and information submitted to the Ministry?s Regional Office at Bangalore.	PPs Submission	All commitments made were implemented during the review period under 19 schemes at a cost of Rs.144.82 Lakhs. A detail of public Hearing implementation is submitted as Annexure XIII. Complied Attachment: Click to View
18	Corporate Environmental Responsibility	xviii. At least 5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry?s Regional Office at Bangalore. Implementation of such program shall be ensured accordingly in a time bound manner.	PPs Submission	TNPL so far spent Rs. 34.66 Crores against 5% of the project cost of Rs.15.5 Cr. Total cost spent under CSR during review period is Rs. 1.27 Crores. Details are submitted as Annexure XIV. Complied Attachment: Click to View
19	Human Health Environment	xix.Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	PPs Submission	During the review period there is no construction made by TNPL. Complied Attachment: NA

General Conditions

Sr.No.	Condition Heading	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents	
1	Statutory compliance	i.The project authorities must strictly adhere to the stipulation made by the Tamil Nadu Pollution Control Board and the State Government.	PPs Submission	Strictly complying with TNPCB conditions. The consent to operate for facility is being renewed from time to time Renewal CTO application is under scrutiny of TNPCB. Complied Attachment: NA
2	Statutory compliance	ii. No further expansion or modifications in the plant shall be	PPs Submission	TNPCB granted fresh CTO Expansion for enhancement of production from 4.0 to 4.8 Lakh MT/A under No Increase in Pollution Load Scenario. The CTO obtained from TNPCB on 13/01/2023 with

		carried our without prior approval of the Ministry of Environment and Forest.		a validity of 31/03/2023. TNPL applied for renewal CTO and the same is under scrutiny of TNPCB. Complied Attachment: NA
3	AIR QUALITY MONITORING AND PRESERVATION	iii. At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM10, SO2 and NOx are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bangalore and the SPCB/CPCB once in six months.	PPs Submission	AAQ monitoring is being carried out in eight stations once in six months by TNPCB and once in a month by NABL accredited & MoEFCC recognized Third Party Lab in addition to that Online ambient air quality monitoring station has been installed and real time data is being transmitted to Care air Centre of Tamil Nadu Pollution Control Board. The reports are submitted regularly along with six monthly EC compliance reports to the respective offices. TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab Ambient Air survey report submitted as Annexure XV. Complied Attachment: Click to View
4	AIR QUALITY MONITORING AND PRESERVATION	iv. Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.	PPs Submission	The unit installed Primary, Secondary and Tertiary Effluent Treatment facilities to ensure its quality within norms prescribed by board & entire treated effluent is utilized for ?On land irrigation Complied Attachment: NA
5	Noise Monitoring & Prevention	v. The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	PPs Submission	TNPL installed necessary noise control measures. The Noise survey report by TNPCB and NABL accredited & MoEFCC recognized Third Party Lab revels that values are with prescribed norms. TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab Noise survey report submitted as Annexure XVI. Complied Attachment: Click to View
6	Human Health Environment	vi. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	PPs Submission	OHC is provided with required infrastructure and functioning four resident doctors with requisite paramedical staff and maintaining health records as per Factory Act. A Copy of OHC report for current review period is submitted as Annexure X. Complied Attachment: Click to View
7	Statutory compliance	vii. The Company shall also develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	PPs Submission	TNPL so far, had implemented rain water harvesting facilities to recharge ground after covering about 4.52 Lakh Sq.meter area through 627 rain water pits, 5 ponds and five reservoirs. Rain water harvesting details are submitted as Annexure XVII. Complied Attachment: Click to View
8	Corporate Environmental Responsibility	viii.The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	PPs Submission	TNPL so far spent Rs. 34.66 Crores against 5% of the project cost of Rs.15.5 Cr. Total cost spent under CSR during review period is Rs. 1.27 Crores. Details are submitted as Annexure XIV Complied Attachment: Click to View
9	Corporate Environmental Responsibility	ix. Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Bangalore. The funds so provided shall not be diverted for any other purpose.	PPs Submission	TNPL had spent the funds allocated for the implementation of environment pollution control measures as stipulated by the MoEF and TNPCB. Details are submitted as Annexure XIV. Complied Attachment: Click to View
10	Statutory compliance	x. A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zlia Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent	PPs Submission	A copy of clearance letter was submitted to Kagithapuram town panchayat on 21/03/2013. Copy of submission is enclosed as Annexure XVIII. Complied Attachment: Click to View
11	Statutory compliance	xi. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including	PPs Submission	EC compliance reports updated once in 6 months in www.tnpl.com website. Hard and soft copies submitted to respective authorities once in 6 months. Real time value available near main gate.

		results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF at Bangalore. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM10, SO2, NOx (ambient levels as well as stack emissions) for critical sectoral parameters, indicated for the projects shall be mentored and displayed at a convenient location near the main gate of the company in the public domain.		Complied Attachment: NA
12	Statutory compliance	xii. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail)to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Bangalore / CPCB/SPCB shall monitor the stipulated conditions.	PPs Submission	Hard and soft copies (email) of periodical EC compliance reports including monitoring data are being submitted to respective authorities once in six months. EC Periodical submission details are enclosed as Annexure XIX. Complied Attachment: Click to View
13	Statutory compliance	xiii.The environmental statement for each financial year ending 31st March in Form-V as in mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental condition and shall also be sent to the respective Regional Office of the MOEF at Bangalore by e-mail.	PPs Submission	Regularly submitting the Form V to the relevant authorities and latest form V copy along with respective EC Compliance is available in TNPL website. Latest Form V attached as Annexure XX. Complied Attachment: NA
			PPs Submission	Regularly submitting the Form V to the relevant authorities and latest form V copy along with respective EC Compliance is available in TNPL website. Latest Form V attached as Annexure XX. Complied Attachment: Click to View
14	Statutory compliance	xiv.The Project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment and Forests at http:/envfor.nic.in. this shall be advertised within seven days from the date of issue of the in the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office at Bangalore.	PPs Submission	Advertisement was made in Newspapers on 27/02/2013 and copy of the advertisement was forwarded to MoEF & CC on 4th March 2013. Details are submitted as attached as Annexure XXI. Complied Attachment: Click to View
15	Statutory compliance	xv. Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	PPs Submission	Both DIP and upgradation of Captive Power Plant work were started and completed during 2013 itself Complied Attachment: NA

Document Upload

Last Site Visit Report (if available)
Click to View
Last Site Visit Report Date (if available)
21-04-2022
Additional Attachment (if any)
NA

Additional Remarks (if any)

☑ I 'Tamil Nadu Newsprint and Papers Limited' hereby give undertaking that the data and information given in the filed compliance and enclosures are true to be best of my knowledge and belief and I am aware that if any part of the data and information found to be false or misleading at any stage, the clearance given to the project will be revoked at our risk and cost. In addition to above, I hereby give undertaking that no activity such as change in project layout, construction, expansion, etc. has been taken up without due approval.

Cover Letter From IRO

Cover Letter From IRO
NA

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Your application has been Submitted with following details	
Proposal No	IA/TN/IND/4608/2005
Compliance ID	21582598
Compliance Number(For Tracking)	EC/M/COMPLIANCE/21582598/2023
Reporting Year	2023
Reporting Period	01 Dec(01 Apr - 30 Sep)
Submission Date	27-11-2023
IRO Name	P Subramanyam
IRO Email	agmu102@ifs.nic.in
State	TAMIL NADU
IRO Office Address	Budgam
Note:- SMS and E-Mail has been sent to P Subramanyam, TAMIL NADU with Notification to Project Proponent.	

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change

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View Compliance Report at Project Proponent

Proposal Details

Proposal No
IA/TN/IND/4608/2005
Category
Industrial Projects - 1
Proposal Name
Expansion of Pulp and Paper Mill (2,45,000 to 4,00,000 TPA) by installation of new Paper Machine (1,55,000 TPA) and balancing of Hard Wood Pulp Mill (300 to 330 TPD) and Bagasse based Pulp Mill (500 to 550 TPD) at TNPL, Kagithapuram, Karur District.
Plot / Survey/ Khasra No.
Village(s)
Sub-District(s)
State
TAMIL NADU
District
KARUR
MoEF File No
J-11011/710/2007-IA-II(I)
Name of the Entity/ Corporate Office
Tamil Nadu Newsprint and Papers Limited
Entity's PAN
NA
Entity Name as per PAN
NA
Entity details mentioned above is correct ?
Agree

Covering Letter

Covering Letter
Click to View

Compliance Reporting Details

Reporting Year
2023
Reporting Period
01 Dec(01 Apr - 30 Sep)
Remark(if any)
EC compliance status report pertaining to installation of New Paper machine(1,55,000 TPA) , Hard wood Pulp Mill (300 to 330 TPA) and Bagasse based Pulp Mill (500 to 550 TPD) and for the period ending 30/09/2023.

Details of Production and Project Area

Date of Commencement of Project/Activity
11-12-2008

	Project Area as per EC Granted(ha.)	Actual Project Area in Possession(ha.)
Private	151.76	1.62
Revenue Land	0	0
Forest	0	0
Others	0	0
Total	151.76	1.62

PRODUCTION CAPACITY							
Sr.No.	Name of the Product	Units	As per EC Granted	As per CTO Granted	CTO ID	Valid Up To	Production during last financial year
1	Newsprint and Writing and Printing Paper	Tons per Annum (TPA)	480000	480000	2307138725381	31-03-2023	420793

Conditions

Specific Conditions

Sr.No.	Condition Type	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents
1	Statutory compliance	i. As proposed, Elemental Chlorine Free (ECF) bleaching technology shall be adopted in hardwood pulp mill, bagasse pulp mill and paper machine.	PPs Submission: Implementation status: ECF ? 2008 for both hard wood pulp and bagasse pulp mill. The units are under operation. ECF is not applicable for Paper machines. Complied Attachment: NA
2	AIR QUALITY MONITORING AND PRESERVATION	ii. Continuous stack monitoring facilities for all the stacks. Sufficient air pollution control devices viz. Electrostatic precipitator (ESP) and bag filters etc. shall be provided to control gaseous emissions below 100 mg/Nm^3. Monitoring of H2S and Mercaptan along with other parameters shall be ensured and report submitted to Ministry's Regional Office at Bangalore, TNPCB and CPCB regularly. The gaseous emissions (SPM, SO2, NOX, H2S and Mercaptan) from various process units shall conform to the standards prescribed from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry, its size and location. At no time, the emission level shall go beyond the prescribed standards. In the event of failure of any pollution control systems(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.	PPs Submission: TNPL has installed Electro Static Precipitator (ESP) in the Chemical Recovery Section to mitigate the boiler particulate emission. The stipulate the norms for the boilers in the chemical recovery section are achieved by operating ESP?s efficiently with appropriate periodical maintenance. The same is evidenced from the Continues Emission Monitoring Data ? Connected with care air centre of TNPCB & Periodical TNPCB Stack Survey ROA & NABL accredited & MoEFCC recognized Third Party Lab data. Latest TNPCB and NABL accredited & MoEFCC recognized Third Party Lab Stack survey ROA is submitted as Annexure I. H2S and Mercaptans are monitored once in a month through NABL accredited & MoEFCC recognized Third Party Lab. TNPL has a dedicated captive power plant. A separate feeder from the TG sets is connected directly to pollution control equipment systems to ensure continuous power supply during the emergencies Complied Attachment: Click to View
3	AIR QUALITY MONITORING AND PRESERVATION	iii. Secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed. Fugitive emissions shall be controlled by providing dust collectors and water spraying system at material transfer points. Monitoring of H2S and mercaptans shall be carried out once in a month in the work environment.	PPs Submission: Secondary fugitive emissions control measure installed closed conveyors, water sprinklers, dust collectors, wind barriers, greenery development, telescopic chute etc., H2S and Mercaptans are monitored once in a month through NABL accredited & MoEFCC recognized Third Party Lab. Copy of latest H2S and Mercaptans report enclosed as Annexure XXII Complied Attachment: Click to View
4	WATER QUALITY MONITORING AND PRESERVATION	iv. AOx levels shall be controlled less than 1 kg/ton of paper manufactured as per E(P) Act. The odours and gases from cooking / stripping column, evaporator hot well and hot condensate tank should be burnt in the incinerator.	PPs Submission: AOX and TOC are mentioned once in a month through NABL accredited & MoEFCC recognized Third Party Lab. AoX varies 0.03 to 0.09 Kg/T against 1 kg/tone of paper production. Copy of AoX report submitted as Annexure VI. Complied Attachment: Click to View
5	WATER QUALITY MONITORING AND PRESERVATION	v. Total water consumption shall not exceed as mentioned in the Corporate Responsibility for Environment Protection (CREP) guidelines.	PPs Submission: Average total water consumption is only 33,656 m3/day. Average fresh water consumption and treated effluent discharge are 19 m3/T of Product. Copy of CREP report for current review period is submitted as Annexure XII. Complied Attachment: Click to View
6	WATER QUALITY MONITORING AND PRESERVATION	vi. Total water requirement from River Cauvery shall not exceed 72,000 M3/day as per the permission accorded by the Public Works Department. Efforts shall be made to reduce the quantity of water intake and maximize use of recycled water.	PPs Submission: The average fresh water consumption during the review period is about 33,656 m3/day excluding domestic consumption against the permitted quantity of 72,000 KLD Complied Attachment: NA
7	WATER QUALITY MONITORING AND PRESERVATION	vii. The process effluent shall be treated in Effluent Treatment Plant (ETP) through primary, secondary and tertiary treatment methods. Spill liquor from paper mill and chemical recovery areas shall also be collected and properly treated. Effort shall be made to reduce the colour in the effluent discharged. Treated effluent (filtrate) shall be used for the green belt development and discharge to the nearby drain only after conforming to the standards prescribed by the TNPCB and under E(P) Act, whichever are more stringent. The quality of the treated effluent shall	PPs Submission: The unit installed Primary, Secondary and Tertiary Effluent Treatment facilities to ensure its quality within norms prescribed by board & entire treated effluent is utilized for ? On land irrigation? Complied Attachment: NA

		conform to the prescribed standards and used for irrigation. AOx and TOC levels are to be monitored.		
8	WATER QUALITY MONITORING AND PRESERVATION	viii. Adequate number of influent and effluent quality monitoring stations shall be installed in consultation with the TNPCB and controlled within the permissible limits for all the parameters. One of the water quality monitoring station shall be at 100 m downstream of confluence of the treated effluent discharge point in the nearest water body	PPs Submission	Influent quality at each sources of generation and treated effluent quality are monitored once in a month by TNPCB. Summary of online Water Quality Watch (WQW) data attached as Annexure IV Complied Attachment: Click to View
9	WATER QUALITY MONITORING AND PRESERVATION	ix. Efforts shall be made to reduce total dissolved solids (TDS) in the effluent and effluent discharged shall not exceed 80 m3/T of paper produced as per the norms prescribed in the E(P) Act.	PPs Submission	The average wastewater discharge was 19 M3/per MT of paper production for the review period. Efforts taken to reduce TDS in treated effluent are enclosed as Annexure XXIII. Complied Attachment: Click to View
10	WATER QUALITY MONITORING AND PRESERVATION	x. Chemical recovery plant shall be installed for the treatment of black liquor. In order to achieve colour reduction, tertiary treatment system like activated filter, multi-media filter etc. shall be explored. The inorganic compounds shall be recovered in the chemical recovery plant and organic compounds burnt in the recovery boiler. The effluent from bagasse handling and fibre preparation section containing high BOD and SS shall be segregated and treated in a clarifier to reduce the SS. Effluent with low BOD and SS generated from paper machine, pulp mill and soda recovery plant shall be passed through bar screen, mechanical screen, detritor and primary clarifier to remove SS. Anaerobic treatment shall be done to reduce BOD levels. The bio-gas from the bio-methanation plant shall be utilized in lime kiln. The effluent shall be further treated in the aeration system based on activated sludge process to reduce BOD/ COD to the permissible levels. No trade effluent shall be discharged into Pugalur Canal and seepage from TEWLIS area shall be prevented entering the same canal during the monsoon.	PPs Submission	All the above facilities, viz., chemical recovery plant, ETP tertiary Treatment, Bio gas plant with pre - treatment for bagasse wash water, use of bio gas in lime kiln, ASL implemented and in operation Complied Attachment: NA
11	WATER QUALITY MONITORING AND PRESERVATION	xi. Permission for the drawal of 75,750 M3/day from River Cauvery water shall be obtained from the concerned department.	PPs Submission	Permission for drawl of 16 MGD water from River Cauvery from Govt. of TamilNadu is available and enclosed as Annexure XXIV Complied Attachment: Click to View
12	WATER QUALITY MONITORING AND PRESERVATION	xii. Action plan shall be prepared for further colour removal from the effluent and submitted to the Ministry, its Regional Office at Bangalore, TNPCB and CPCB and implemented.	PPs Submission	TNPL had implemented tertiary treatment to reduce colour in the treated effluent by Ozonation during 2010. Complied Attachment: NA
13	WATER QUALITY MONITORING AND PRESERVATION	xiii. Regular ground water monitoring shall be carried out for all the relevant parameters where effluent is discharged.	PPs Submission	TNPCB and NABL accredited & MoEFCC recognized Third Party Lab is being conducting ground water quality analysis once in three months and relevant reports are submitted to concerned authorities along with respective EC compliance report. TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab Ground water analysis report submitted as Annexure V Complied Attachment: Click to View
14	WATER QUALITY MONITORING AND PRESERVATION	xiv. Apart from other parameters, TOC and AOx levels in the treated effluent shall be measured once in a month. The AOx levels shall not 1.5kg/tone of paper as per the norms prescribed in E(P) Act.	PPs Submission	AOX and TOC are measured once in a month through NABL accredited & MoEFCC recognized Third Party Lab. An AoX value varies from 0.03 to 0.09 Kg/T against 1 kg/ton of paper production. Copy of AoX report submitted as Annexure VI Complied Attachment: Click to View
15	WASTE MANAGEMENT	xv. Sludge dewatering system shall be installed. ETP sludge shall be used as manure Chip dust and pith shall be used as fuel in the existing boilers of TNPL. Lime mud reburning kilns shall be installed to recycle lime sludge and to regenerate burnt lime required for the caustcizing process. Efforts shall be made for the utilisation of lime sludge and mud in the cement plants.	PPs Submission	Dewatering system of Vaccum filter and decanters are installed ETP. ETP Sec. Sludge used as manure. Chip dust and pith are used as fuel. Two lime kilns in operation. Lime sludge mud is used in TNPL Cement Plant Complied Attachment: NA
16	WATER QUALITY MONITORING AND PRESERVATION	xvi. Action plan for the disposal of Reverse Osmosis (RO) rejects shall be prepared and submitted to the	PPs Submission	TNPL carried out pilot plant study through Tamil Nadu Water investment company and concluded that the implementation of RO in Effluent recycling is economically not feasible. However, if any economically feasible technology available in the market TNPL will be implement.

		Ministry's Regional Office at Bangalore, TNPCB and CPCB within three months of issue of this letter.		Complied Attachment: NA
17	WASTE MANAGEMENT	xvii. Proper utilization of fly ash shall be ensured as per Fly ash Notification, 1999 and subsequent amendment in 2003.	PPs Submission	Fly ash utilized in TNPL cement plant and balance, if any is being sent to fly ash bricks manufacturing units. Fly ash Quarterly reports are submitted to TNPCB authorities. The latest fly ash submission details is enclosed as Annexure VIII. Complied Attachment: Click to View
18	Corporate Environmental Responsibility	xviii. As per the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP), the company shall undertake measures for discharge of within two years and 1.0 kg/ton of paper in 5 years.	PPs Submission	TNPL is periodically submitting the compliance against the CREP conditions as part of six monthly Compliance report on conditions stipulated in the ECs. Copy of report for current review period is submitted as Annexure XII. Complied Attachment: Click to View
19	GREENBELT	xix. Green belt shall be developed in 33 % area to mitigate the effects of fugitive emissions all around the plant in as per the CPCB guidelines and in consultation with local DFO. Green belt already developed shall be properly maintained.	PPs Submission	The unit has developed and maintain green belt with 38.42% for paper plant and 42.37% for Captive Power Plant. A Copy of Green Belt report for current review period is submitted as Annexure IX. Complied Attachment: Click to View
20	PUBLIC HEARING	xx.All the commitments made to the public during public hearing shall be satisfactorily implemented.	PPs Submission	All the commitments made in the public hearing were satisfactorily implemented. Details are enclosed as Annexure XXV Complied Attachment: Click to View
21	Corporate Environmental Responsibility	xxi. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for Pulp and Paper Sector shall be strictly implemented.	PPs Submission	TNPL is periodically submitting the compliance against the CREP conditions as part of the respective six monthly EC compliance reports. Copy of report for current review period is submitted as Annexure XII. Complied Attachment: Click to View
22	Human Health Environment	xxii. The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	PPs Submission	During the review period there is no construction made by TNPL. Complied Attachment: NA

General Conditions

Sr.No.	Condition Heading	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents	
1	Statutory compliance	i.The project authorities must strictly adhere to the stipulations made by the Tamil Nadu state Pollution Control Board (TNPCB) and the State Government.	PPs Submission	Strictly complying with TNPCB conditions. The consent to operate for facility is being renewed from time to time Renewal CTO application is under scrutiny of TNPCB Complied Attachment: NA
2	Statutory compliance	ii.No further expansion or modernization in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	PPs Submission	TNPCB granted fresh CTO Expansion for enhancement of production from 4.0 to 4.8 Lakh MT/Annum under No Increase in Pollution Load Scenario. The CTO obtained from TNPCB on 13/01/2023 with a validity of 31/03/2023. TNPL applied for renewal CTO and the same is under scrutiny of TNPCB Complied Attachment: NA
3	MISCELLANEOUS	iii. Proper house keeping and cleanliness must be maintained within and outside the plant.	PPs Submission	TNPL is maintaining good house keeping with in and outside of mill premises. Complied Attachment: NA
4	Noise Monitoring & Prevention	iv. The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time)	PPs Submission	TNPL installed necessary noise control measures. The Noise survey report by TNPCB and NABL accredited & MoEFCC recognized Third Party Lab revels that values are with prescribed norms. TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab Noise survey report submitted as Annexure XVI. Complied Attachment: Click to View
5	Human Health Environment	v.Occupational health surveillance programme shall be undertaken as regular exercise for all the	PPs Submission	OHC is provided with required infrastructure and functioning four resident doctors with requisite paramedical staff and maintaining health records as per Factory Act. A Copy of OHC report for

		employees, specially for those engaged in handling hazardous substances. The first aid facilities in the occupational health centre shall be strengthened and the medical records of each employee should be maintained separately.		current review period is submitted as Annexure X. Complied Attachment: Click to View
6	Statutory compliance	vi.The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report.	PPs Submission	The entire allocated fund of Rs. 159 & Rs.128 crores allocated for the environmental protection measures under MEP and MDP have been completely utilized as per enclosed report. Details are submitted as Annexure XIV. Complied Attachment: Click to View
7	Statutory compliance	vii.The company shall undertake rainwater harvesting measures to recharge the ground water.	PPs Submission	TNPL so far, had implemented rain water harvesting facilities to recharge ground water covering about 4.52 Lakh Sq.meter area through 627 rain water pits, 5 ponds and five reservoirs. Rain water harvesting details are submitted as Annexure XVII. Complied Attachment: Click to View
8	Statutory compliance	viii. The implementation of the project vis-à-vis environment action plans shall be monitored by Ministry?s Regional Office at Bangalore / TNPCB / CPCB. A six-monthly compliance status report shall be submitted to monitoring agencies.	PPs Submission	Hard and soft copies (email) of periodical EC compliance reports including monitoring data are being submitted to respective authorities once in six months. Periodical EC submission details are enclosed as Annexure XIX. Complied Attachment: Click to View
9	Human Health Environment	ix. Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. shall be ensured for construction workers during the construction phase so as to avoid felling of trees and pollution of water and the surroundings.	PPs Submission	During the review period there is no construction made by TNPL. Complied Attachment: NA
10	Corporate Environmental Responsibility	x.The project proponent shall have a scheme for social upliftment in the surrounding villages with reference to contribution in road construction, education, establishment of health centres, sanitation facilities, drinking water supply, community awareness and employment to local people wherever possible both for technical and non-technical jobs.	PPs Submission	TNPL so far spent Rs. 34.66 Crores against 5% of the project cost of Rs.15.5 Cr. Total cost spent under CSR during review period is Rs. 1.27 Crores. Details are submitted as Annexure XIV. Complied Attachment: Click to View
11	Statutory compliance	xi. A separate Environmental Management Cell equipped with full fledged laboratory facilities to carry out the various Environmental Management and Monitoring functions shall be set up under the control of Senior Executive.	PPs Submission	A separate Environmental Management Cell is available and the same is enclosed as Annexure XXVI. Complied Attachment: Click to View
12	Statutory compliance	xii. The project authorities will provide Rs.128.00 Crores both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes. Rs.159.00 Crores is allotted for environment protection measures.	PPs Submission	A sum of Rs. 128 Crore and Rs. 159 Crore allocated for MEP and MDP respectively were fully utilized for implementation of EC conditions. Details are submitted as Annexure XIV Complied Attachment: Click to View
13	Statutory compliance	xiii. Six monthly status report on the project vis-à-vis implementation of environmental measures shall be submitted to this Ministry?s Regional Office at Bangalore/CPCB/TNPCB.	PPs Submission	Hard and softcopies of periodical EC compliance reports including monitoring data are being submitted to respective authorities. Periodical submission details enclosed. EC periodical submission details are enclosed as Annexure XIX. Complied Attachment: Click to View
14	Statutory compliance	xiv. The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the Tamil Nadu State Pollution Control Board and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office.	PPs Submission	Public notice given in two local newspaper dated 31st DEC 2008. A copy of the same is attached as Annexure XXVII. Complied Attachment: Click to View

15	Statutory compliance	xv.The Project Authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	PPs Submission	The Board of Directors approved project proposal during 2007 and financial closure achieved during 2008. The financial approval (CTO by TNPCB) on 14/01/2011. No land development work was undertaken. Complied Attachment: NA

Document Upload

Last Site Visit Report (if available)
Click to View
Last Site Visit Report Date (if available)
21-04-2022
Additional Attachment (if any)
NA

Additional Remarks (if any)

☑ I 'Tamil Nadu Newsprint and Papers Limited' hereby give undertaking that the data and information given in the filed compliance and enclosures are true to be best of my knowledge and belief and I am aware that if any part of the data and information found to be false or misleading at any stage, the clearance given to the project will be revoked at our risk and cost. In addition to above, I hereby give undertaking that no activity such as change in project layout, construction, expansion, etc. has been taken up without due approval.

Cover Letter From IRO

Cover Letter From IRO
NA

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Your application has been Submitted with following details	
Proposal No	IA/TN/IND/22309/1910
Compliance ID	21587372
Compliance Number(For Tracking)	EC/M/COMPLIANCE/21587372/2023
Reporting Year	2023
Reporting Period	01 Dec(01 Apr - 30 Sep)
Submission Date	27-11-2023
IRO Name	P Subramanyam
IRO Email	agmu102@ifs.nic.in
State	TAMIL NADU
IRO Office Address	Budgam
Note:- SMS and E-Mail has been sent to P Subramanyam, TAMIL NADU with Notification to Project Proponent.	

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change

Back

View Compliance Report at Project Proponent

Proposal Details

Proposal No
IA/TN/IND/22309/1910
Category
Industrial Projects - 1
Proposal Name
Expansion of Paper Production from 2,05,000 to 2,45,000 MTPA and Production of 45,000 MTPA market pulp at TNPL, Kagithapuram, Karur District.
Plot / Survey/ Khasra No.
Village(s)
Sub-District(s)
State
TAMIL NADU
District
KARUR
MoEF File No
J-11011/375/2005-IA-II(I)
Name of the Entity/ Corporate Office
Tamil Nadu Newsprint and Papers Limited
Entity's PAN
NA
Entity Name as per PAN
NA
Entity details mentioned above is correct ?
Agree

Covering Letter

Covering Letter
Click to View

Compliance Reporting Details

Reporting Year
2023
Reporting Period
01 Dec(01 Apr - 30 Sep)
Remark(if any)
EC compliance status report pertaining to expansion of Paper Production from 2,05,000 to 2,45,000 MTPA and Production of 45,000 MTPA market pulp at TNPL and for the period ending 30/09/2023.

Details of Production and Project Area

Date of Commencement of Project/Activity
21-08-2008

	Project Area as per EC Granted(ha.)	Actual Project Area in Possession(ha.)
Private	151.76	3.44
Revenue Land	0	0
Forest	0	0
Others	0	0
Total	151.76	3.44

PRODUCTION CAPACITY							
Sr.No.	Name of the Product	Units	As per EC Granted	As per CTO Granted	CTO ID	Valid Up To	Production during last financial year
1	Newsprint and Writing and Printing Paper	Tons per Annum (TPA)	480000	480000	2307138725381	31-03-2023	420793

Conditions

Specific Conditions

Sr.No.	Condition Type	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents	
1	AIR QUALITY MONITORING AND PRESERVATION	i. The gaseous emissions (SPM, SO2, NOX and H2S) from various process units shall conform to the standards prescribed from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry, its size and location. At no time, the emission level shall go beyond the prescribed standards. In the event of failure of any pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency. ESPs shall be provided to the recovery boiler with 99.9% and lime kiln to collect the solids (Sodium salts) escaping the flue gas.	PPs Submission	TNPL has installed Electro Static Precipitator (ESP) in the Recovery Boiler, Lime Kilns Section to mitigate the boiler particulate emission. The stipulate norms for the boilers in the chemical recovery section are achieved by operating ESP?s efficiently with appropriate periodical maintenance. The same is evidenced from the Continues Emission Monitoring Data ? Connected with care air centre of TNPCB & Periodical TNPCB Stack Survey ROA & NABL accredited & MoEFCC recognized Third Party Lab data. Latest TNPCB and NABL accredited & MoEFCC recognized Third Party Lab Stack survey ROA is submitted as Annexure I. Complied Attachment: Click to View
2	AIR QUALITY MONITORING AND PRESERVATION	ii. Three on-line monitoring stations for ambient air near the boundary of the plant shall be set up along with another on-line stack monitoring system for recovery boiler for particulate matter, SO2, NOX and H2S and the on-line data shall be submitted to the CPCB and TNPCB.	PPs Submission	THREE CAAQMS MONITORING STATION LOCATIONS 1. Canteen Building 2. Vicinity of Coal Yard 3. Entrance of TNPL Cement Plant. Online Monitoring Provided for recovery Boiler for PM, SO2, NOX and H2S. Summary of Ambient and Stack CEMS Data submitted as Annexure II. Complied Attachment: Click to View
3	Statutory compliance	iii.The company shall phase out Element Chlorine from pulp bleaching process. The Chlorine dioxide plant shall be installed and commissioned on or before May, 2007.	PPs Submission	ECF (Elemental Chlorine Free) bleaching technology commissioned during May 2008 by installing Chlorine Di Oxide unit. Complied Attachment: NA
4	Statutory compliance	iv. The company shall install new Chemical Recovery Boiler (CRB). The new power boilers for the co-generation power plant, recovery boiler and lime kiln shall be equipped with ESP and shall meet the notified standards.	PPs Submission	ESPs installed for Power & Recovery boilers and Lime kilns. ROA of TNPCB survey during review period reveals that emissions are within prescribed norms. Latest TNPCB and NABL accredited & MoEFCC recognized Third Party Lab Stack survey ROA is submitted as Annexure I. Complied Attachment: Click to View
5	AIR QUALITY MONITORING AND PRESERVATION	v. Fugitive emissions shall be controlled by providing dust collectors and water spraying system at material transfer points. A super batch digester shall be installed to control odour. All the recommendations of the Corporate Responsibility for Environmental Protection (CREP) issued by the CPCB shall be followed. Arrangements for burning the non-condensable gases in a lime kiln shall be in place before the new digesters are commissioned. The existing direct contact evaporator shall be changed to the surface contract evaporator. Monitoring of H2S and Mercaptans shall be carried out once in a month in the work environment.	PPs Submission	Dust control measures: Closed conveyors, water sprinklers, dust collectors, wind barriers etc. NCG commissioned and in operation. H2S and Mercaptans are monitored once in a month through NABL accredited & MoEFCC recognized Third Party Lab. Copy of latest report enclosed as Annexure XXII Complied Attachment: Click to View
6	WATER QUALITY MONITORING AND PRESERVATION	vi. Total fresh water requirement from River Cauvery shall not exceed 66,380 m3/d. presently, 38% treated waste water is recycled and reused in the process. Effort shall be made to further reduce water consumption by spill liquor collection from pulp mill and chemical recovery area, Cooling towers, dewatering of waste sludge in lieu of vacuum drum filters etc. the effluent generation shall not exceed 37,715 m3/day The quality of the treated effluent shall conform to the prescribed standards and used for irrigation.	PPs Submission	As per the 2013 DIP EC fresh water requirement is 52,800 m3/d. However based on conservation, average total water consumption is only 33,656 m3/day. Fresh water and treated effluent discharge are 27m3/T and 19 m3/T of paper respectively. TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab effluent water analysis report ROA is submitted as Annexure III. The value of treated effluent is well within the TNPCB norms. Complied Attachment: Click to View
7	WATER QUALITY MONITORING AND PRESERVATION	vii.The black liquor generated by the paper mill shall be concentrated in an evaporation pond. The inorganic compounds shall be recovered in the chemical recovery plant and organic confounds brunt in the recovery boiler. The effluent from bagasse handling and fibre preparation section containing high BOD and	PPs Submission	Evaporator & recovery boiler were installed and in operation to generate steam through incineration of organic compounds and recovery of inorganic chemicals. The unit installed Primary, Secondary and Tertiary Effluent Treatment facilities to ensure its quality within norms prescribed by board & entire treated effluent is utilized for ?On land irrigation?. TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab effluent water analysis report ROA is submitted as Annexure III. The value of treated effluent is well within the TNPCB norms. During the monsoon seepage from TEWLIS area is reutilized for On land irrigation along with Treated Effluent not discharge in canal.

		SS shall be segregated and treated in a clarifier to reduce the SS. Effluent with low BOD and SS generated from paper machine, pulp mill and soda recovery plant shall be passed through bar screen, mechanical screen, detritor and primary clarifier to remove SS. Anaerobic treatment shall be done to reduce BOD levels. A bio-methanation plant shall be installed to treat high BOD/COD steams and generate bio-gas upto 20,000 m3/d to be utilized in lime kiln. The effluent shall be further treated in the aeration system based on ?Activated Sludge Process? to reduce BOD/COD to the permissible levels. No trade effluent shall be discharged into Pugalur canal and seepage from TEWLIS area shall be prevented entering the same canal during the monsoon.		Complied Attachment: Click to View
8	WATER QUALITY MONITORING AND PRESERVATION	viii. The use of Ferric/Ferrous chloride shall be optimized to further reduce the colour in the treated effluent.	PPs Submission	Ferric/ Ferrous Chloride usage stopped due to TDS increase in effluent. To further reduce colour, Tertiary treatment using Ozone introduced during 2010. Complied Attachment: NA
9	WATER QUALITY MONITORING AND PRESERVATION	ix. Apart from other parameters. TOC and AOX levels in the treated effluent shall be measured once in a month.	PPs Submission	AOX and TOC are mentioned once in a month through NABL accredited & MoEFCC recognized Third Party Lab. AoX varies from 0.03 to 0.09 Kg/T against 1 kg/tone of paper production. Copy of AoX report submitted as Annexure VI. Complied Attachment: Click to View
10	WASTE MANAGEMENT	x. Solid waste generated in the form of ash and lime sludge shall be provided to cement manufacturing unit. Chip dust and pith shall be used as fuel in the existing boilers of TNPL. ETP sludge shall be given to cardboard/egg tray manufactures. The causticizing plant shall be augmented to 2,000 m3/day to overcome the problem of high silica bagasse liquor. Lime mud reburning kilns shall be installed to recycle lime sludge and to regenerate burnt lime required for the causticizing process.	PPs Submission	Fly ash & Lime sludge used in TNPL Cement Plant. Chip dust and pith are used as fuel. ETP sludge sold for cardboard manufacturing. Causticizing plant augmented. 2 lime kilns are in operation. Complied Attachment: NA
11	Corporate Environmental Responsibility	xi. As per the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP), the company shall undertake measures for discharge of AOX less than 1.5 kg/tone of paper within two years and 1.0 kg/tone of paper in 5 years. The waste water discharge per ton of paper shall be less than 80 m3/T of paper.	PPs Submission	Average total water consumption is only 33,656 M3/day. Average fresh water consumption and treated effluent discharge are 27m3/T and 19m3/T of paper respectively. Copy of CREP report for current review period is submitted as Annexure XII. Complied Attachment: Click to View
12	GREENBELT	xii. Green belt shall be raised in at least 50 ha. (33%) to mitigate the effects of fugitive emissions all around the plant in as per the CPCB guidelines and in consultation with local DFO.	PPs Submission	The unit has developed and maintain green belt with 38.42% for paper plant and 42.37% for Captive Power Plant. A Copy of Green Belt report for current review period is submitted as Annexure IX. Complied Attachment: Click to View
13	Statutory compliance	xiii. The company shall undertake rainwater harvesting measures to recharge the ground water.	PPs Submission	TNPL so far, had implemented rain water harvesting facilities to recharge ground ater covering about 4.52 Lakh Sq.meter area through 627 rain water pits, 5 ponds and five reservoirs. Rain water harvesting details are submitted as Annexure XVII. Complied Attachment: Click to View

General Conditions

Sr.No.	Condition Heading	Condition Details	Status of Compliance,Remarks/Reason and Supporting Documents	
1	Statutory compliance	i. The project authorities must strictly adhere to the stipulations made by the Tamil Nadu State Pollution Control Board (TNPCB) and the State Government.	PPs Submission	Strictly complying with TNPCB conditions. The consent to operate for facility is being renewed from time to time Renewal CTO application is under scrutiny of TNPCB Complied Attachment: NA
2	Statutory compliance	ii. No further expansion of modernization in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the	PPs Submission	TNPCB granted fresh CTO Expansion for enhancement of production from 4.0 to 4.8 Lakh MT/A under No Increase in Pollution Load Scenario. The CTO obtained from TNPCB on 13/01/2023 with a validity of 31/03/2023. TNPL applied for renewal CTO and the same is under scrutiny of TNPCB. Complied Attachment: NA

		Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.		
3	MISCELLANEOUS	iii. Proper housekeeping and cleanliness must be maintained within and outside the plant.	PPs Submission	Good house keeping is practiced in and around the plant area. Complied Attachment: NA
4	Noise Monitoring & Prevention	iv.The overall noise levels in around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	PPs Submission	TNPL installed necessary noise control measures. The Noise survey report by TNPCB and NABL accredited & MoEFCC recognized Third Party Lab revels that values are with prescribed norms. TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab Noise survey report submitted as Annexure XVI. Complied Attachment: Click to View
5	Human Health Environment	v.Occupational health surveillance program shall be undertaken as regular exercise for all the employees, especially for those engaged in handling hazardous substances. The first aid facilities in the Occupational health centre shall be strengthened and the medical records of each employee should be maintained separately.	PPs Submission	OHC is provided with required infrastructure and functioning four resident doctors with requisite paramedical staff and maintaining health records as per Factory Act. A Copy of OHC report for current review period is submitted as Annexure X. Complied Attachment: Click to View
6	Statutory compliance	vi.The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report.	PPs Submission	The entire allocated fund of Rs. 159 & Rs. 128 crores allocated for the environment protection meausures under MEP and MDP have been completely utilized. Details are submitted as Annexure XIV. Complied Attachment: Click to View
7	Statutory compliance	vii.The implementation of the project vis-à-vis environmental action plans shall be monitored by Ministry?s Regional Office at Bangalore/TNPCB/CPCB. A six monthly compliance status report shall be submitted to monitoring agencies.	PPs Submission	Hard and soft copies (email) of periodical EC compliance reports including monitoring data are being submitted to respective authorities once in six months. EC Periodical submission details are enclosed as Annexure XIX. Complied Attachment: Click to View
8	Human Health Environment	viii.Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. shall be ensured for construction workers during the construction phase so as to avoid felling of trees and pollution of water and the surroundings.	PPs Submission	During the review period there is no construction made by TNPL. Complied Attachment: NA
9	Corporate Environmental Responsibility	ix. The project proponent shall have a scheme for social upliftment in the surrounding villages with reference to contribution in road construction, education, establishment of health centres, sanitation facilities, drinking water supply, community awareness and employment to local people whenever and wherever possible both for technical and non-technical jobs.	PPs Submission	TNPL so far spent Rs. 34.66 Crores against 5% of the project cost of Rs.15.5 Cr. Total cost spent under CSR during review period is Rs. 1.27 Crores. Details are submitted as Annexure XIV Complied Attachment: Click to View
10	Statutory compliance	x.A separate Environmental Management Cell equipped with full fledged laboratory facilities to carry out the various Environmental Management and Monitoring functions shall be set up under the control of Senior Executive.	PPs Submission	A separate Environmental Management Cell is available and the same is enclosed as Annexure XXVI. Complied Attachment: Click to View
11	Statutory compliance	xi.The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry Environmental and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes. Rs.159.00 Crores is allotted for environment protection measures.	PPs Submission	TNPL so far spent Rs. 34.66 Crores against 5% of the project cost of Rs.15.5 Cr. Total cost spent under CSR during review period is Rs. 1.27 Crores. Details are submitted as Annexure XIV. Complied Attachment: Click to View
12	Statutory compliance	xii. Six monthly status report on the project vis-à-vis implementation of environmental measures shall be submitted to this Ministry?s Regional Office at Bangalore/CPCB/TNPCB.	PPs Submission	Hard and soft copies (email) of periodical EC compliance reports including monitoring data are being submitted to respective authorities once in six months. EC Periodical submission details are enclosed as Annexure XIX. Complied Attachment: Click to View

13	Statutory compliance	xiii. The project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the Tamil Nadu State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environmental and Forests at http://www.envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office.	PPs Submission	The issue of environmental clearance from MoEF was advertised on 6th June 2006 Complied Attachment: NA
14	Statutory compliance	xiv.The Project Authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	PPs Submission	The entire allocated fund of Rs. 159 & Rs. 128 crores allocated for the environment protection meausures under MEP and MDP have been completely utilized. Details are submitted as Annexure XIV. Complied Attachment: Click to View

Document Upload

Last Site Visit Report (if available)
Click to View
Last Site Visit Report Date (if available)
21-04-2022
Additional Attachment (if any)
NA

Additional Remarks (if any)

I 'Tamil Nadu Newsprint and Papers Limited' hereby give undertaking that the data and information given in the filed compliance and enclosures are true to be best of my knowledge and belief and I am aware that if any part of the data and information found to be false or misleading at any stage, the clearance given to the project will be revoked at our risk and cost. In addition to above, I hereby give undertaking that no activity such as change in project layout, construction, expansion, etc. has been taken up without due approval.

Cover Letter From IRO

Cover Letter From IRO
NA

Back

DETAILS OF ANNEXURES

PROJECT:

(1) Installation of Deinking Plant and Upgradation of Captive Co generation Plant

(2) The expansion of Pulp and Paper Mill 2,45,000 to 4,00,000 TPA by installation of new paper machine 1,55,000 TPA and balancing of Hard Wood and Bagasse Pulp Mill 300 to 330 and 500 to 550 TPD

(3) The expansion of Paper Production from 2,05,000 to 2,45,000 TPA and Production of 45,000 TPA of Market Pulp

SL.NO	ANNEXURE NO	DESCRIPTION
1	ANNEXURE I	Latest TNPCB and NABL accredited & MoEFCC recognized Third Party Lab Stack survey Report
2	ANNEXURE II	Summary of Online Ambient and Stack CEMS Data
3	ANNEXURE III	TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab effluent water analysis report
4	ANNEXURE IV	Summary of online Water Quality Watch (WQW) data
5	ANNEXURE V	TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab Ground water analysis report
6	ANNEXURE VI	Copy of NABL accredited & MoEFCC recognized Third Party Lab AoX report
7	ANNEXURE VII	Copy of latest comprehensive water management plan report
8	ANNEXURE VIII	Copy of Latest fly ash submission details to TNPCB
9	ANNEXURE IX	Copy of Green Belt report for current review period
10	ANNEXURE X	Copy of OHC report for current review period
11	ANNEXURE XI	Copy of updated fire protection facilities is available in TNPL
12	ANNEXURE XII	Copy of CREP recommendations for current review period
13	ANNEXURE XIII	Detail of DIP public Hearing implementation in TNPL
14	ANNEXURE XIV	Copy of CSR Activities report for current review period
15	ANNEXURE XV	TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab Ambient Air survey report
16	ANNEXURE XVI	TNPCB and Latest NABL accredited & MoEFCC recognized Third Party Lab Noise survey report
17	ANNEXURE XVII	Copy of Rain water harvesting facilities in TNPL
18	ANNEXURE XVIII	Copy of DIP - environmental clearance letter was submitted to Kagithapuram town panchayat
19	ANNEXURE XIX	Submission of EC Periodical report
20	ANNEXURE XX	Submission of Latest Environmental Statement (Form V) report
21	ANNEXURE XXI	Copy of DIP - environmental clearance Newspaper Advertisement
22	ANNEXURE XXII	NABL accredited & MoEFCC recognized Third Party Lab H_2S and Mercaptans report
23	ANNEXURE XXIII	Efforts taken to reduce TDS in treated effluent
24	ANNEXURE XXIV	Permission for drawl of 16 MGD water from River Cauvery from Govt. of Tamil Nadu
25	ANNEXURE XXV	Detail of MEP public Hearing implementation in TNPL
26	ANNEXURE XXVI	Environmental Management Cell
27	ANNEXURE XXVII	Copy of MEP - environmental clearance Newspaper Advertisement

ANNEXURE I

TNPCB REPORT – STACK EMISSION

Report No.DEL/DGL/20

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Dindigul.

STACK MONITORING SURVEY – Report of Analysis

Report No.TNPCB/DEL/DGL/F.No.70/SM/2023-2024, Date:20.10.2023

1. Name of the Industry : M/s. Tamilnadu Newsprint and Papers Ltd.,

2. Address of the Industry : Pulp Plant Division,
Kagithapuram – 639 136,
Karur District.

3. Date of survey : 16.08.2023 & 17.08.2023

Stack Monitoring Survey Results

Sl. No	Stack attached to	Stack Temp °C	Velocity in (m/sec)	Discharge rate in (Nm^3/Hr)	Pollutants (mg/Nm^3)					
					PM	SO_2	NO_x	Cl_2	H_2S	Acid Mist
1.	Recovery Boiler A,B & C	157	12.3	293616	40	31	84	-	0.170	-
2.	Lime Kiln - I	164	11.1	21782	22	28	58	-	0.162	-
3.	Lime Kiln - II	165	12.4	19405	20	26	58	-	0.180	-
4.	Hard wood Boiler	70	11.0	6753	54	34	-	0.704	-	<0.05
5.	Chemical Baggasse	75	9.9	8582	50	38	-	0.545	-	<0.05

End of the report

20/10/23
Env.Scientist

Deputy Chief Scientific Officer
DEL, TNPCB, Dindigul.

Report No.DEL/DGL/19

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Dindigul.

STACK MONITORING SURVEY - Report of Analysis

Report No.TNPCB/DEL/DGL/F.No.71/SM/2023-2024, Dated:20.10.2023.

1. Name of the Industry : M/s. Tamilnadu News Print and Papers Ltd.,

2. Address of the Industry : Power Plant Division,
Kagithapuram – 639 136,
Karur District.

3. Date of survey : 18.08.2023

Stack Monitoring Survey Results

Sl. No	Stack attached to	Stack Temp °C	Velocity in (m/sec)	Discharge rate in (Nm^3/Hr)	Pollutants (mg/Nm^3)		
					PM	SO_2	NO_x
1.	Power Plant – V	154	11.0	2,22,261	26.0	12.0	66.0
2.	Power Plant – VI	146	10.9	2,71,293	23.0	10.0	60.0
3.	Power Plant – VII	151	10.3	2,52,526	25.0	14.0	72.0

End of the report

Env.Scientist 20/10/23

Deputy Chief Scientific Officer,
DEL, TNPCB, Dindigul.

LATEST NABL ACCREDITED & MoEF&CC RECOGNIZED THIRD PARTY LAB TEST REPORT – STACK EMISSION

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC854223000006970F

Report No	:	EN23090808	Report Date	:	10 Oct 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur - 639136			
Sample Description	:	Stack Emission			
Sample No	:	EN23090808	Sampling Date	:	21 Sep 2023
Sample Identification	:	Lime Kiln 2	Sample Received on	:	26 Sep 2023
Sample Condition	:	Good	Test Started on	:	26 Sep 2023
Sampling Procedure	:	GL/EN/SOP/111	Test Completed on	:	03 Oct 2023
Sample Submission Type	:	Collected Lab Representative			

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Stack Temperature	IS 11255 (Part -3):2008	411	K	-
2	Velocity	EPA Method 1-3	7.20	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	41755	Nm^3/hr	-
4	Oxygen as O_2	GL/EN/SOP/149	11.40	%	-
5	Carbon Monoxide as CO	GL/EN/SOP/149	20.40	mg/Nm^3	-
6	Carbon Dioxide as CO_2	GL/EN/SOP/149	7.30	%	-
7	Particulate Matter	GL/EN/SOP/113	19.50	mg/Nm^3	150
8	Sulphur Dioxide as SO_2	EPA Method 6	195	mg/Nm^3	400
9	Oxides Of Nitrogen as NO_2	GL/EN/SOP/149	215	mg/Nm^3	500
10	Moisture Content	EPA Method 1-3: 1991	2.86	%	-
11	Sulfide as H2S*	IS 11255 (Part 11)	4.3	mg/Nm^3	10

Note: BDL-Below Detection Limit, DL- Detection Limit

*Non NABL Parameter

......End of Report........

Page 1 of 1

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E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd. #6/1, 1 St Floor, Sri Lalithi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600 106

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TC - 8582

TEST REPORT

ULR No : TCR582230000006972P

Report No	:	EN23090810	**Report Date**	:	10 Oct 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Description	:	Stack Emission			
Sample No	:	EN23090810	**Sampling Date**	:	23 Sep 2023
Sample Identification	:	Chemical bagasse ECF Hood Vent	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Sampling Procedure	:	GL/EN/SOP/111	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	Collected Lab Representative			

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Stack Temperature	IS 11255 (Part -3):2008	331	K	-
2	Velocity	EPA Method 1-3	19.70	m/sec	-
7	Particulate Matter	GL/EN/SOP/113	19.50	mg/Nm^3	150
8	Sulphur Dioxide as SO_2	EPA Method 6	BDL(DL:3.0)	mg/Nm^3	-
9	Oxides Of Nitrogen as NO_2	GL/EN/SOP/149	BDL(DL:2.0)	mg/Nm^3	-
10	Chlorine*	IS 5182 (Part -19):1982	BDL(DL:0.02)	mg/m^3	-
11	Acid mist *	IS 11255 (Part 11)	BDL(DL:0.01)	mg/m^3	-

Note: BDL-Below Detection Limit, DL- Detection Limit

* Non NABL Parameter

——End of Report——

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E. PRITHIVIRAJAN

LAB MANAGER

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TC - 8582

TEST REPORT

ULR No : TC858223000000697 IP

Report No	:	EN23090809	**Report Date**	:	10 Oct 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd.			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Description	:	Stack Emission			
Sample No	:	EN23090809	**Sampling Date**	:	21 Sep 2023
Sample Identification	:	Hard Wood ECP Hood Vent	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Sampling Procedure	:	GL/EN/SOP/111	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	Collected Lab Representative			

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Stack Temperature	IS 11255 (Part -3):2008	339	K	-
2	Velocity	EPA Method 1-3	18.0	m/sec	-
7	Particulate Matter	GL/EN/SOP/113	11.90	mg/Nm^3	150
8	Sulphur Dioxide as SO_2	EPA Method 6	BDL(DL:3.0)	mg/Nm^3	-
9	Oxides Of Nitrogen as NO_2	GL/EN/SOP/149	BDL(DL:2.0)	mg/m^3	-
10	Chlorine*	IS 5182 (Part -19):1982	BDL(DL:0.02)	mg/m^3	-
11	Acid mist *	IS 11255 (Part 11)	BDL(DL:0.01)	mg/m^3	-

Note: BDL-Below Detection Limit, DL- Detection Limit

* Non NABL Parameter

----End of Report----

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TC - 8582

TEST REPORT

ULR No : TC858223000006967F

Report No	:	**EN23090805**	**Report Date**	:	10 Oct 2023
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Description	:	Stack Emission			
Sample No	:	EN23090805	**Report Date**	:	21 Sep 2023
Sample Identification	:	Boiler-V	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Sampling Procedure	:	GL/EN/SOP/111	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Stack Temperature	IS 11255 (Part -3):2008	387	K	-
2	Velocity	EPA Method 1-3	11.0	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	242180	Nm^3/hr	-
4	Oxygen as O_2	GL/EN/SOP/149	9.10	%	-
5	Carbon Monoxide as CO	GL/EN/SOP/149	37	mg/Nm^3	-
6	Carbon Dioxide as CO_2	GL/EN/SOP/149	11.60	%	-
7	Particulate Matter	GL/EN/SOP/113	38.30	mg/Nm^3	100
8	Sulphur Dioxide as SO_2	EPA Method 6	341	mg/Nm^3	600
9	Oxides Of Nitrogen as NO_2	GL/EN/SOP/149	155	mg/Nm^3	600
10	Moisture Content	EPA Method 1-3: 1991	2.89	%	-
11	Mercury as Hg	EPA Method 29	BDL(DL:0.03)	mg/Nm^3	0.03

Note: BDL-Below Detection Limit, DL- Detection Limit

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Authorized Signature

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TC - 8582

TEST REPORT

ULR No : TC858223000006968F

Report No	:	**EN23090806**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Description	:	Stack Emission			
Sample No	:	EN23090806	**Sampling Date**	:	21 Sep 2023
Sample Identification	:	Boiler-VI	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Sampling Procedure	:	GL/EN/SOP/111	**Test Completed on**	:	03 Oct 2023

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Stack Temperature	IS 11255 (Part -3):2008	398	K	-
2	Velocity	EPA Method 1-3	15.60	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	281605	Nm^3/hr	-
4	Oxygen as O_2	GL/EN/SOP/149	8.10	%	-
5	Carbon Monoxide as CO	GL/EN/SOP/149	64	mg/Nm^3	-
6	Carbon Dioxide as CO_2	GL/EN/SOP/149	11.0	%	-
7	Particulate Matter	GL/EN/SOP/113	26.70	mg/Nm^3	50
8	Sulphur Dioxide as SO_2	EPA Method 6	272	mg/Nm^3	600
9	Oxides Of Nitrogen as NO_2	GL/EN/SOP/149	226	mg/Nm^3	450
10	Moisture Content	EPA Method 1-3: 1991	3.78	%	-
11	Mercury as Hg	EPA Method 29	BDL(DL:0.03)	mg/Nm^3	0.03

Note: BDL-Below Detection Limit, DL- Detection Limit

.....End of Report.....
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LAB MANAGER

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* A Satisfactory test report in no way implies that the product is tested is approved by NABL.
* Laboratory is not responsible for the authenticity of unattempted test results.

GLens Innovation Labs Pvt Ltd.

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TC - 8582

TEST REPORT

ULR No : TC858223000006964F

Report No	:	EN23090807	**Report Date**	:	10 Oct 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Description	:	Stack Emission			
Sample No	:	EN23090807	**Sampling Date**	:	21 Sep 2023
Sample Identification	:	Roller-VII	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Sampling Procedure	:	GL/EN/SOP/114	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Stack Temperature	IS 11255 (Part -3):2008	391	K	-
2	Velocity	EPA Method 1-3	16.20	m/sec	-
3	Volume of flas Discharge	IS 11255 (Part -3):2008	282025	Nm^3/hr	-
4	Oxygen as O_2	GL/EN/SOP/149	11.28	%	-
5	Carbon Monoxide as CO	GL/EN/SOP/149	75	mg/Nm^3	-
6	Carbon Dioxide as CO_2	GL/EN/SOP/149	8.10	%	-
7	Particulate Matter	GL/EN/SOP/113	28.30	mg/Nm^3	50
8	Sulphur Dioxide as SO_2	EPA Method 6	312	mg/Nm^3	600
9	Oxides Of Nitrogen as NO_2	GL/EN/SOP/149	244	mg/Nm^3	450
10	Moisture Content	EPA Method 1-3: 1991	2.86	%	-
11	Mercury as Hg	EPA Method 29	BDL(DL:0.03)	mg/Nm^3	0.03

Note: BDL-Below Detection Limit, DL- Detection Limit

.....End of Report.....

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, 80/1, I M Floor, Sri Jothi Complex Murugesan Street, Balaviswagar Nagar, Arumbakkam Chennai 600 106

Terms and Conditions:

* The Test Results Relate only to the items tested.
* The Test Report Shall not be reproduced in full or part without the written approval of Glens.
* The test items will not be retained for more than 15 days from the date of issue of test report exceptin the case as required by the application regulations.
* The Laboratory's Responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
* A Satisfactory test report in no way implies that the product so tested is approved by NABL.
* Laboratory is not responsible for the authenticity of photocopied test reports.

ANNEXURE II

ONLINE - AMBIENT AIR QUALITY MONITORING DATA

TAMILNADU NEWSPRINT AND PAPERS LIMITED

REAL TIME AMBIENT AIR QUALITY MONITORING STATION DATA

Date	TNPL Barometric Pressure	TNPL CH4	TNPL CHLORINE	TNPL CO_ABT	TNPL H2S	TNPL HCNM	TNPL HCT	TNPL NO	TNPL NO2	TNPL NOX	TNPL PM10	TNPL RAIN	TNPL Relative Humidity	TNPL SO2	TNPL SOLAR	TNPL TEMP	TNPL Vertcal WS	TNPL Wind Speed	TNPL Wind Direction
	mmHg	ug/m3	ppm	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	mm	%	ug/m3	W/m2	degree C	m/s	m/s	degree
Apr-23																			
01-04-2023	774	1.52	0.00	395.9	29.1	1.42	1.92	10.04	12.54	18.54	53.96	0.0	62.3	19.30	22.7	33.1	0.16	0.78	174.26
02-04-2023	772	1.06	0.01	409.2	114.5	0.96	1.46	14.79	17.29	23.29	118.28	0.0	70.4	241.42	17.5	42.6	0.20	0.94	163.21
03-04-2023	763	1.37	0.00	402.7	47.4	1.27	1.77	11.25	13.75	19.75	98.63	0.0	64.4	76.00	21.9	35.5	0.11	1.64	189.52
04-04-2023	765	1.27	0.00	415.9	7.2	1.17	1.67	11.63	14.13	20.13	63.34	0.0	65.0	4.87	20.6	36.3	0.07	1.01	205.14
05-04-2023	762	1.53	0.00	373.8	28.4	1.43	1.93	12.10	14.60	20.60	68.22	0.0	65.8	9.52	22.9	37.2	0.10	0.83	163.7
06-04-2023	769	1.35	0.00	390.2	19.9	1.25	1.75	12.72	15.22	21.22	94.31	0.0	66.9	7.54	18.9	38.4	0.10	0.72	142.6
07-04-2023	758	1.90	0.01	370.0	28.1	1.80	2.30	12.74	15.24	21.24	94.23	0.0	66.9	9.50	22.3	38.5	0.10	0.43	158.14
08-04-2023	752	2.01	0.00	373.3	28.1	1.91	2.41	12.07	14.57	20.57	104.58	0.0	65.8	9.88	22.7	36.4	0.11	0.52	199.68
09-04-2023	749	1.72	0.01	363.6	25.9	1.62	2.12	11.97	14.47	20.47	115.09	0.0	65.6	9.47	21.7	36.9	0.09	1.23	223.64
10-04-2023	762	1.69	0.02	368.0	23.4	1.59	2.09	12.06	14.56	20.56	90.74	0.3	65.8	7.79	21.8	32.9	0.10	0.46	214.3
11-04-2023	765	1.66	0.00	370.2	28.9	1.56	2.06	12.60	15.10	21.10	154.76	0.0	66.7	9.09	25.7	32.4	0.10	0.49	243.8
12-04-2023	761	1.45	0.00	376.1	34.3	1.35	1.85	12.71	15.21	21.21	105.98	0.0	66.9	11.40	24.6	31.8	0.11	0.52	227.94
13-04-2023	763	1.33	0.00	383.7	16.1	1.23	1.73	13.11	15.61	21.61	106.80	0.0	67.6	7.18	25.1	32.4	0.11	0.77	230.63
14-04-2023	768	1.30	0.01	397.5	10.8	1.20	1.70	13.83	16.33	22.33	86.67	0.0	68.8	4.87	23.6	32.1	0.10	0.89	212.64
15-04-2023	768	1.29	0.00	391.3	4.1	1.19	1.69	13.25	15.75	21.75	120.02	0.0	67.8	0.84	20.9	32.3	0.08	0.57	123.5
16-04-2023	772	1.35	0.00	397.8	2.6	1.25	1.75	12.89	15.39	21.39	97.85	0.0	67.2	0.03	23.8	32.4	0.08	0.78	124.17
17-04-2023	770	1.43	0.00	392.8	13.4	1.33	1.83	13.21	15.71	21.71	99.79	0.0	67.7	4.66	23.4	32.1	0.09	0.59	182.17
18-04-2023	762	1.57	0.00	391.6	20.8	1.47	1.97	13.62	16.12	22.12	95.35	0.0	68.4	7.57	22.9	36.0	0.10	0.64	178.63
19-04-2023	762	1.46	0.00	390.2	19.4	1.36	1.86	13.90	16.40	22.40	86.16	0.0	68.9	6.21	20.4	32.4	0.10	0.36	174.22
20-04-2023	763	1.34	0.00	410.1	6.4	1.24	1.74	13.70	16.20	22.20	96.26	0.0	68.6	3.34	21.8	34.9	0.10	0.73	200.31
21-04-2023	762	1.38	0.00	413.7	3.2	1.28	1.78	12.96	15.46	21.46	89.37	0.0	67.3	2.85	21.8	36.1	0.10	0.28	184.26
22-04-2023	764	1.12	0.00	411.7	3.7	1.02	1.52	12.16	14.66	20.66	62.41	0.0	65.9	3.26	20.4	37.0	0.10	0.69	174.52
23-04-2023	762	1.32	0.03	398.5	5.9	1.22	1.72	11.90	14.40	20.40	56.87	0.0	65.5	3.56	19.8	36.8	0.10	0.62	263.54
24-04-2023	762	1.47	0.00	387.6	15.3	1.37	1.87	12.27	14.77	20.77	77.11	0.0	66.1	5.74	21.5	37.6	0.12	0.41	142.65
25-04-2023	781	1.74	0.01	382.7	22.7	1.64	2.14	12.21	14.71	20.71	79.04	0.0	66.0	7.49	26.9	37.4	0.08	0.23	217.59
26-04-2023	766	1.41	0.00	404.4	7.1	1.31	1.81	12.06	14.56	20.56	88.62	0.0	65.8	3.73	20.9	37.1	0.08	0.14	226.54
27-04-2023	763	1.62	0.00	383.2	14.4	1.52	2.02	12.66	15.16	21.16	100.27	0.0	66.8	5.09	22.7	38.3	0.10	0.38	196.32
28-04-2023	754	1.83	0.00	367.6	23.2	1.73	2.23	12.82	15.32	21.32	91.97	0.0	67.1	7.14	21.8	38.7	0.08	1.24	185.24
29-04-2023	755	1.95	0.00	354.3	39.6	1.85	2.35	11.59	14.09	20.09	80.56	0.0	65.0	11.63	16.6	36.2	0.10	0.59	174.26
30-04-2023	768	1.46	0.00	374.5	20.9	1.36	1.86	11.30	13.80	19.80	73.34	0.0	64.5	7.03	11.7	35.6	0.08	1.01	241.56
MINIMUM	**749.0**	**1.1**	**0.0**	**354.3**	**2.6**	**1.0**	**1.5**	**10.0**	**12.5**	**18.5**	**54.0**	**0.0**	**62.3**	**0.0**	**11.7**	**31.8**	**0.1**	**0.1**	**123.5**
MAXIMUM	**781.0**	**2.0**	**0.0**	**415.9**	**114.5**	**1.9**	**2.4**	**14.8**	**17.3**	**23.3**	**154.8**	**0.3**	**70.4**	**241.4**	**26.9**	**42.6**	**0.2**	**1.6**	**263.5**
AVERAGE	**763.9**	**1.5**	**0.0**	**388.1**	**22.2**	**1.4**	**1.9**	**12.5**	**15.0**	**21.0**	**91.7**	**0.0**	**66.6**	**16.9**	**21.6**	**35.6**	**0.1**	**0.7**	**191.3**

TAMILNADU NEWSPRINT AND PAPERS LIMITED

REAL TIME AMBIENT AIR QUALITY MONITORING STATION DATA

Date	TNPL Barometric Pressure	TNPL CH4	TNPL CHLORINE	TNPL CO_ABT	TNPL H2S	TNPL HCNM	TNPL HCT	TNPL NO	TNPL NO2	TNPL NOX	TNPL PM10	TNPL RAIN	TNPL Relative Humidity	TNPL SO2	TNPL SOLAR	TNPL TEMP	TNPL Vertcal WS	TNPL Wind Speed	TNPL Wind Direction
	mmHg	ug/m3	ppm	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	mm	%	ug/m3	W/m2	degree C	m/s	m/s	degree
May-23																			
01-05-2023	762	1.64	0.00	370.4	2.2	1.54	2.04	11.47	13.97	19.97	36.65	1.1	64.8	7.62	17.2	35.0	0.10	0.86	204.3
02-05-2023	762	1.49	0.00	381.9	1.2	1.39	1.89	11.12	13.62	19.62	33.45	0.0	64.2	5.50	50.3	35.3	0.08	1.49	143.41
03-05-2023	762	1.70	0.00	416.7	8.0	1.60	2.10	11.25	13.75	19.75	77.41	0.0	64.4	4.90	21.6	35.5	0.09	0.52	227.94
04-05-2023	757	1.68	0.00	398.0	11.2	1.58	2.08	10.49	12.99	18.99	42.62	0.4	63.1	6.41	19.5	34.0	0.12	0.72	230.63
05-05-2023	756	1.30	0.00	419.2	7.3	1.20	1.70	10.72	13.22	19.22	97.87	0.0	63.5	6.71	43.8	34.4	0.11	0.89	212.64
06-05-2023	753	1.39	0.00	415.0	6.8	1.29	1.79	10.87	13.37	19.37	93.00	0.1	63.7	6.54	18.9	34.8	0.07	0.57	123.5
07-05-2023	753	1.33	0.00	404.4	7.0	1.23	1.73	10.38	12.88	18.88	59.16	0.3	62.9	6.79	28.2	33.8	0.06	0.78	124.17
08-05-2023	753	1.25	0.00	412.0	15.5	1.15	1.65	11.74	14.24	20.24	45.79	0.2	65.2	9.39	27.7	36.5	0.08	0.59	182.17
09-05-2023	753	1.20	0.00	405.6	9.0	1.10	1.60	12.38	14.88	20.88	42.11	0.8	66.3	7.76	25.5	37.8	0.09	0.97	178.63
10-05-2023	753	1.11	0.00	422.4	7.4	1.01	1.51	12.28	14.78	20.78	45.86	0.0	66.1	8.26	29.0	37.6	0.12	0.72	187.4
11-05-2023	753	1.54	0.00	416.1	10.1	1.44	1.94	11.06	13.56	19.56	60.37	0.0	64.1	8.42	30.1	35.1	0.11	0.44	199.41
12-05-2023	753	1.52	0.00	422.7	7.1	1.42	1.92	10.84	13.34	19.34	101.55	0.0	63.7	7.95	23.7	34.7	0.12	0.28	184.26
13-05-2023	753	1.73	0.00	430.3	7.0	1.63	2.13	11.30	13.80	19.80	49.63	0.0	64.5	8.34	17.8	35.6	0.11	0.69	174.52
14-05-2023	753	1.86	0.00	428.4	6.6	1.76	2.26	11.46	13.96	19.96	64.66	0.0	64.8	7.90	24.1	35.9	0.11	0.62	235.48
15-05-2023	753	1.73	0.00	422.4	5.6	1.63	2.13	11.67	14.17	20.17	50.55	0.0	65.1	6.77	24.4	36.4	0.10	0.41	142.65
16-05-2023	756	1.42	0.00	424.4	5.6	1.32	1.82	11.49	13.99	19.99	60.28	0.0	64.8	6.64	24.9	36.0	0.09	0.23	222.48
17-05-2023	756	1.50	0.00	410.8	6.4	1.40	1.90	11.54	14.04	20.04	71.05	0.0	64.9	6.78	19.7	36.1	0.12	0.14	201.38
18-05-2023	756	1.56	0.00	410.3	8.6	1.46	1.96	11.67	14.17	20.17	71.45	0.0	65.1	8.62	24.2	36.4	0.10	0.38	144.2
19-05-2023	762	1.69	0.00	427.7	6.7	1.59	2.09	11.67	14.17	20.17	52.89	0.0	65.1	7.93	24.0	36.4	0.08	1.26	174.36
20-05-2023	762	1.48	0.00	420.3	6.5	1.38	1.88	12.01	14.51	20.51	57.71	0.0	65.7	7.89	24.8	37.0	0.08	2.45	180.24
21-05-2023	762	1.57	0.00	425.1	6.4	1.47	1.97	11.83	14.33	20.33	35.93	0.0	65.4	7.54	24.4	36.7	0.06	0.41	167.42
22-05-2023	762	1.54	0.00	416.7	6.7	1.44	1.94	11.20	13.70	19.70	38.13	0.0	64.3	7.12	24.6	35.4	0.08	0.55	128.49
23-05-2023	765	1.49	0.00	407.2	7.9	1.39	1.89	11.59	14.09	20.09	71.23	0.0	65.0	7.20	21.5	36.2	0.11	0.63	241.57
24-05-2023	762	1.76	0.00	427.6	4.7	1.66	2.16	11.41	13.91	19.91	64.08	0.0	64.7	6.46	25.2	35.8	0.11	0.48	212.69
25-05-2023	768	1.70	0.00	422.2	4.6	1.60	2.10	11.75	14.25	20.25	61.42	0.0	65.3	6.13	23.7	36.5	0.11	0.52	166.28
26-05-2023	762	1.80	0.00	408.9	6.0	1.70	2.20	11.22	13.72	19.72	52.92	0.4	64.3	6.93	23.3	35.4	0.11	0.34	174.26
27-05-2023	774	1.34	0.00	410.8	5.5	1.24	1.74	11.21	13.71	19.71	62.89	0.0	64.3	6.90	30.7	35.4	0.13	1.12	183.21
28-05-2023	762	1.41	0.00	403.2	5.8	1.31	1.81	11.23	13.73	19.73	93.70	0.0	64.3	6.99	19.2	35.5	0.12	0.92	164.5
29-05-2023	762	1.43	0.00	417.2	6.6	1.33	1.83	11.52	14.02	20.02	74.81	1.0	64.8	7.25	21.7	36.0	0.13	0.88	112.3
30-05-2023	762	1.41	0.00	414.7	6.5	1.31	1.81	11.43	13.93	19.93	92.49	0.0	64.7	7.17	24.1	35.9	0.10	0.48	241.6
31-05-2023	762	1.52	0.00	424.1	7.3	1.42	1.92	11.01	13.51	19.51	87.83	0.0	64.0	7.10	21.7	35.0	0.14	1.43	288.4
MINIMUM	**753.0**	**1.1**	**0.0**	**370.4**	**1.2**	**1.0**	**1.5**	**10.4**	**12.9**	**18.9**	**33.5**	**0.0**	**62.9**	**4.9**	**17.2**	**33.8**	**0.1**	**0.1**	**112.3**
MAXIMUM	**774.0**	**1.9**	**0.0**	**430.3**	**15.5**	**1.8**	**2.3**	**12.4**	**14.9**	**20.9**	**101.6**	**1.1**	**66.3**	**9.4**	**50.3**	**37.8**	**0.1**	**2.5**	**288.4**
AVERAGE	**758.8**	**1.5**	**0.0**	**414.1**	**6.9**	**1.4**	**1.9**	**11.4**	**13.9**	**19.9**	**62.9**	**0.1**	**64.6**	**7.2**	**25.1**	**35.7**	**0.1**	**0.7**	**185.6**

TAMILNADU NEWSPRINT AND PAPERS LIMITED

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	mmHg	ug/m3	ppm	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	mm	%	ug/m3	W/m2	degree C	m/s	m/s	degree
Jun-23																			
01-06-2023	762	1.79	0.00	428.9	4.8	1.69	2.19	11.10	13.60	19.60	65.58	0.0	64.1	7.77	22.4	35.2	0.11	1.16	189.4
02-06-2023	773	1.63	0.00	378.2	4.5	1.53	2.03	11.01	13.51	19.51	67.60	0.0	64.0	4.36	19.9	35.0	0.11	0.74	241.3
03-06-2023	749	1.43	0.00	326.5	4.9	1.33	1.83	11.31	13.81	19.81	75.34	0.0	64.5	5.62	23.3	35.6	0.13	0.36	212.6
04-06-2023	768	1.37	0.00	390.2	4.4	1.27	1.77	10.91	13.41	19.41	84.66	0.0	63.8	7.44	23.3	34.8	0.12	1.26	201.3
05-06-2023	762	1.67	0.00	425.7	4.7	1.57	2.07	9.20	14.26	22.45	70.18	0.0	64.3	8.94	23.4	35.3	0.13	0.96	187.45
06-06-2023	761	1.78	0.00	346.5	5.1	1.68	2.18	11.39	13.89	22.40	62.09	0.0	64.6	7.99	24.1	35.8	0.13	2.14	164.25
07-06-2023	760	2.10	0.00	428.6	4.6	2.00	2.50	11.10	13.60	19.60	35.98	0.0	64.2	6.32	21.8	35.2	0.13	1.63	124.17
08-06-2023	752	2.29	0.00	388.2	4.3	2.19	2.69	10.88	13.38	19.38	32.22	0.0	63.8	5.21	24.3	34.8	0.13	1.45	182.17
09-06-2023	748	2.37	0.00	429.7	3.9	2.27	2.77	10.61	13.11	19.11	38.22	0.0	63.3	7.10	23.7	34.2	0.13	0.42	178.63
10-06-2023	774	2.53	0.00	374.6	3.6	2.43	2.93	10.44	12.94	18.94	27.58	0.0	63.0	6.90	20.8	33.9	0.09	0.59	187.4
11-06-2023	766	2.21	0.00	429.0	4.2	2.11	2.61	10.83	13.33	24.61	37.46	0.0	63.7	7.36	24.8	34.7	0.13	0.33	199.41
12-06-2023	768	2.27	0.00	428.0	4.2	2.17	2.67	10.84	13.34	19.34	40.09	0.0	63.7	9.48	23.5	34.7	0.13	0.96	184.26
13-06-2023	762	1.74	0.00	297.6	3.7	1.64	2.14	10.46	12.96	18.96	53.07	0.0	63.0	10.26	23.4	33.9	0.13	0.83	188.23
14-06-2023	762	1.74	0.00	503.1	3.5	1.64	2.14	10.37	12.87	18.87	42.10	0.0	62.9	6.83	28.0	33.8	0.13	1.32	174.23
15-06-2023	763	1.61	0.00	425.1	4.5	1.51	2.01	11.04	13.54	19.54	62.71	0.0	64.0	7.60	24.2	35.1	0.12	0.52	159.3
16-06-2023	765	2.27	0.00	474.3	4.7	2.17	2.67	13.64	13.67	19.67	58.03	0.0	64.3	8.40	25.8	35.4	0.13	0.66	222.48
17-06-2023	759	1.79	0.00	429.1	4.1	1.69	2.19	10.78	13.28	19.28	64.94	0.0	63.6	7.29	15.5	34.6	0.11	0.14	201.38
18-06-2023	760	1.19	0.00	417.9	3.9	1.09	1.59	14.20	13.11	19.10	76.41	0.0	63.3	6.32	9.1	34.2	0.13	0.38	178.25
19-06-2023	761	1.15	0.00	403.0	3.7	1.05	1.55	10.47	12.97	18.97	87.37	0.0	63.1	6.93	12.1	34.0	0.11	0.48	155.36
20-06-2023	768	1.03	0.00	364.2	3.7	0.93	1.43	10.47	12.97	18.97	73.21	0.0	63.1	8.21	13.6	34.0	0.12	0.48	209.47
21-06-2023	782	1.00	0.00	410.8	4.2	0.90	1.40	9.46	15.20	24.68	80.44	0.3	63.7	11.23	23.2	34.5	0.12	0.88	231.45
22-06-2023	774	1.15	0.00	546.3	4.3	1.05	1.55	10.86	13.36	19.36	62.88	0.0	63.7	10.41	19.0	34.7	0.12	0.93	163.48
23-06-2023	743	1.45	0.00	426.5	4.6	1.35	1.85	11.06	13.56	19.56	75.05	0.0	64.1	9.45	16.9	35.1	0.11	0.47	254.82
24-06-2023	740	2.12	0.00	387.5	4.9	2.02	2.52	11.30	13.80	19.80	72.81	0.0	64.5	7.88	20.6	35.6	0.11	0.38	202.74
25-06-2023	759	1.77	0.00	418.4	5.7	1.67	2.17	11.79	14.29	20.29	66.51	0.0	65.3	8.45	20.6	36.6	0.12	0.64	199.78
26-06-2023	768	2.56	0.00	224.6	5.8	2.46	2.96	11.88	14.38	20.38	41.28	0.0	65.4	8.55	22.8	36.8	0.11	0.84	139.84
27-06-2023	763	2.73	0.00	287.6	5.0	2.63	3.13	11.33	13.83	19.83	51.57	0.0	64.5	7.92	22.6	35.7	0.11	1.69	183.21
28-06-2023	771	2.37	0.00	387.6	6.0	2.27	2.77	12.00	14.50	20.50	28.65	0.0	65.7	8.70	21.8	37.0	0.11	0.74	124.37
29-06-2023	764	2.29	0.00	399.8	4.6	2.19	2.69	11.10	13.60	19.60	30.07	0.0	64.1	7.64	19.3	35.2	0.11	0.49	170.29
30-06-2023	762	2.15	0.00	429.3	4.5	2.05	2.55	11.12	13.51	19.51	29.40	0.0	64.2	7.67	22.4	35.2	0.13	0.67	264.5
MINIMUM	**740.0**	**1.0**	**0.0**	**224.6**	**3.5**	**0.9**	**1.4**	**9.2**	**12.9**	**18.9**	**27.6**	**0.0**	**62.9**	**4.4**	**9.1**	**33.8**	**0.1**	**0.1**	**124.2**
MAXIMUM	**782.0**	**2.7**	**0.0**	**546.3**	**6.0**	**2.6**	**3.1**	**14.2**	**15.2**	**24.7**	**87.4**	**0.3**	**65.7**	**11.2**	**28.0**	**37.0**	**0.1**	**2.1**	**264.5**
AVERAGE	**762.3**	**1.9**	**0.0**	**400.2**	**4.5**	**1.8**	**2.3**	**11.1**	**13.6**	**20.0**	**56.5**	**0.0**	**64.0**	**7.8**	**21.2**	**35.0**	**0.1**	**0.8**	**189.2**

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	mmHg	ug/m3	ppm	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	mm	%	ug/m3	W/m2	degree C	m/s	m/s	degree
Jul-23																			
01-07-2023	762	2.03	0.00	428.9	4.9	1.93	2.43	11.25	13.75	19.75	26.96	0.0	64.4	7.83	21.9	35.5	0.09	1.24	164.52
02-07-2023	763	1.86	0.00	420.1	4.3	1.76	2.26	10.86	13.36	19.36	29.85	0.0	63.7	7.37	15.3	34.7	0.08	2.46	233.41
03-07-2023	771	2.33	0.00	430.6	3.4	2.23	2.73	10.31	12.81	18.81	17.44	0.0	62.8	6.75	13.7	33.6	0.08	2.48	245.31
04-07-2023	770	3.15	0.00	430.4	2.9	3.05	3.55	9.95	12.45	18.45	17.01	0.0	62.2	6.34	17.3	32.9	0.08	3.12	213.64
05-07-2023	742	2.78	0.00	429.7	2.9	2.68	3.18	9.94	12.44	18.44	20.04	0.0	62.2	6.34	19.1	32.9	0.11	1.87	248.52
06-07-2023	760	2.57	0.00	430.4	2.7	2.47	2.97	9.86	12.36	18.36	18.18	0.0	62.0	6.24	14.0	32.7	0.10	4.26	225.69
07-07-2023	758	2.14	0.00	430.5	3.4	2.04	2.54	10.31	12.81	18.81	17.92	0.0	62.8	6.75	18.3	33.6	0.09	3.21	142.68
08-07-2023	773	2.15	0.00	430.4	3.6	2.05	2.55	10.42	12.92	18.92	18.79	0.0	63.0	6.87	17.7	33.9	0.13	3.48	164.58
09-07-2023	766	1.48	0.00	427.7	4.4	1.38	1.88	10.96	13.46	19.46	21.90	0.0	63.9	7.50	23.8	34.9	0.11	3.49	194.82
10-07-2023	763	0.87	0.00	425.6	4.3	0.77	1.27	10.88	13.38	19.38	27.29	0.0	63.8	7.40	18.5	34.8	0.13	2.47	174.29
11-07-2023	780	0.92	0.00	421.9	3.7	0.82	1.32	10.45	12.95	18.95	29.44	0.4	63.0	6.92	26.4	33.9	0.12	4.14	212.54
12-07-2023	749	1.01	0.00	397.3	4.1	0.91	1.41	10.74	13.24	19.24	36.46	0.0	63.5	5.81	21.0	34.5	0.12	1.96	233.46
13-07-2023	755	1.05	0.00	399.3	3.4	0.95	1.45	10.31	12.81	18.81	20.48	0.0	62.8	6.08	15.3	33.6	0.17	2.88	199.84
14-07-2023	753	1.29	0.00	414.2	4.0	1.19	1.69	10.68	13.18	19.18	23.52	0.0	63.4	8.04	22.9	34.4	0.19	2.43	257.84
15-07-2023	769	1.81	0.00	445.3	4.6	1.71	2.21	11.06	13.56	19.56	24.73	0.0	64.1	8.25	23.8	35.1	0.14	2.19	147.31
16-07-2023	751	1.59	0.00	518.8	4.4	1.49	1.99	10.98	13.48	19.48	31.13	0.0	63.9	7.57	18.3	35.0	0.11	5.26	154.89
17-07-2023	762	2.17	0.00	439.9	4.5	2.07	2.57	11.03	13.53	19.53	31.19	0.0	64.0	10.18	21.7	35.1	0.10	1.66	216.49
18-07-2023	764	2.60	0.00	392.2	4.4	2.50	3.00	10.95	13.45	19.45	32.19	0.0	63.9	11.29	25.5	34.9	0.12	4.28	180.63
19-07-2023	769	2.54	0.00	446.5	3.8	2.44	2.94	10.53	13.03	19.03	58.25	0.0	63.2	8.46	20.4	34.1	0.11	1.67	188.42
20-07-2023	767	2.84	0.00	446.9	4.5	2.74	3.24	11.02	13.52	19.52	41.40	0.0	64.0	9.04	23.6	35.1	0.11	2.94	243.15
21-07-2023	770	2.55	0.00	455.4	4.3	2.45	2.95	10.87	13.37	19.37	46.17	0.0	63.8	8.06	20.7	34.7	0.08	3.97	231.45
22-07-2023	758	2.91	0.00	476.0	3.8	2.81	3.31	10.55	13.05	19.05	30.45	0.4	63.2	5.64	16.1	34.1	0.11	4.21	165.28
23-07-2023	753	2.39	0.00	476.1	3.9	2.29	2.79	10.59	13.09	19.09	19.73	0.7	63.3	5.69	16.2	34.2	0.11	4.26	247.82
24-07-2023	752	2.36	0.00	441.6	3.0	2.26	2.76	10.02	12.52	18.52	20.83	0.5	62.3	7.40	27.4	33.1	0.09	2.49	229.65
25-07-2023	760	2.09	0.00	352.5	3.1	1.99	2.49	10.09	12.59	18.59	19.60	0.3	62.4	13.43	16.4	33.2	0.09	3.32	187.46
26-07-2023	762	1.96	0.00	352.2	3.1	1.86	2.36	10.11	12.61	18.61	16.69	0.0	62.5	13.47	15.2	33.2	0.11	1.98	201.64
27-07-2023	762	2.03	0.00	352.1	4.0	1.93	2.43	10.65	13.15	19.15	19.93	0.0	63.4	14.15	22.9	34.3	0.11	3.48	174.69
28-07-2023	763	1.94	0.00	351.9	4.4	1.84	2.34	10.93	13.43	19.43	24.49	0.0	63.8	14.49	24.8	34.9	0.11	3.15	198.49
29-07-2023	764	2.06	0.00	408.0	4.2	1.96	2.46	10.82	13.32	19.32	33.47	0.0	63.7	9.57	21.6	34.6	0.13	2.65	254.21
30-07-2023	761	1.96	0.00	459.4	4.3	1.86	2.36	10.90	13.40	19.40	32.35	0.0	63.8	5.39	24.3	34.8	0.12	2.49	244.36
31-07-2023	748	2.03	0.00	459.2	5.1	1.93	2.43	11.39	13.89	19.89	32.29	0.0	64.6	5.93	23.4	35.8	0.12	4.87	198.4
MINIMUM	**742.0**	**0.9**	**0.0**	**351.9**	**2.7**	**0.8**	**1.3**	**9.9**	**12.4**	**18.4**	**16.7**	**0.0**	**62.0**	**5.4**	**13.7**	**32.7**	**0.1**	**1.2**	**142.7**
MAXIMUM	**780.0**	**3.2**	**0.0**	**518.8**	**5.1**	**3.1**	**3.6**	**11.4**	**13.9**	**19.9**	**58.3**	**0.7**	**64.6**	**14.5**	**27.4**	**35.8**	**0.2**	**5.3**	**257.8**
AVERAGE	**761.3**	**2.0**	**0.0**	**425.5**	**3.9**	**1.9**	**2.4**	**10.6**	**13.1**	**19.1**	**27.1**	**0.1**	**63.3**	**8.2**	**20.2**	**34.3**	**0.1**	**3.0**	**205.7**

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	mmHg	ug/m3	ppm	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	mm	%	ug/m3	W/m2	degree C	m/s	m/s	degree
Aug-23																			
01-08-2023	763	2.43	0.00	459.7	5.8	2.33	2.83	11.89	14.39	20.39	31.54	0.0	65.5	6.48	21.7	36.8	0.13	2.49	198.47
02-08-2023	770	2.24	0.00	312.4	5.5	2.14	2.64	11.70	14.20	20.20	36.00	0.0	65.1	6.26	23.2	36.4	0.12	2.36	201.46
03-08-2023	749	2.34	0.00	247.7	5.0	2.24	2.74	11.35	13.85	19.85	30.49	0.0	64.6	5.87	24.7	35.7	0.12	1.58	164.7
04-08-2023	758	1.99	0.00	458.4	4.8	1.89	2.39	11.21	13.71	19.71	25.71	0.0	64.3	5.71	20.0	35.4	0.11	3.47	221.45
05-08-2023	762	1.72	0.00	198.4	4.9	1.62	2.12	11.28	13.78	19.78	30.33	0.0	64.4	5.80	24.9	35.6	0.12	1.64	254.63
06-08-2023	762	1.74	0.00	457.0	5.1	1.64	2.14	11.40	13.90	19.90	25.08	0.0	64.6	5.94	26.3	35.8	0.15	3.98	225.69
07-08-2023	752	1.56	0.00	506.8	5.0	1.46	1.96	11.34	13.84	19.84	36.86	0.0	64.5	9.50	24.8	35.7	0.11	4.85	168.49
08-08-2023	759	1.45	0.00	123.4	4.8	1.35	1.85	11.19	13.69	19.69	36.43	0.0	64.3	12.21	23.7	35.4	0.11	5.31	167.42
09-08-2023	754	1.05	0.00	185.7	5.1	0.95	1.45	11.44	13.94	19.94	34.72	0.0	64.7	12.52	22.3	35.9	0.10	2.49	194.36
10-08-2023	776	1.18	0.00	508.0	3.5	1.08	1.58	10.33	12.83	18.83	34.90	2.7	62.8	11.17	31.6	33.7	0.13	2.36	201.35
11-08-2023	766	1.13	0.00	529.9	3.8	1.03	1.53	10.53	13.03	19.03	38.91	0.0	63.2	11.42	29.8	34.1	0.12	3.45	264.25
12-08-2023	765	1.11	0.00	528.7	3.3	1.01	1.51	10.24	12.74	18.74	33.66	0.6	62.7	11.06	33.1	33.5	0.12	1.96	254.78
13-08-2023	762	1.36	0.00	544.7	4.8	1.26	1.76	11.22	13.72	19.72	43.11	0.0	64.4	12.26	23.9	35.5	0.12	4.49	180.23
14-08-2023	764	1.25	0.00	475.4	4.7	1.15	1.65	11.11	13.61	19.61	50.93	0.0	64.1	11.07	21.4	35.2	0.11	3.16	174.69
15-08-2023	762	1.43	0.00	348.9	5.2	1.33	1.83	11.48	13.98	19.98	45.04	0.0	64.8	9.35	24.9	36.0	0.13	4.29	124.87
16-08-2023	761	1.32	0.00	349.3	5.1	1.22	1.72	11.40	13.90	19.90	47.84	0.0	64.6	9.24	26.1	35.8	0.10	2.54	162.45
17-08-2023	760	1.88	0.00	385.0	4.3	1.78	2.28	10.86	13.36	19.36	40.87	0.0	63.7	7.54	25.3	34.7	0.11	3.61	203.64
18-08-2023	763	2.25	0.00	446.3	3.8	2.15	2.65	10.58	13.08	19.08	30.55	0.0	63.2	4.69	20.4	34.2	0.12	6.1	174.56
19-08-2023	769	2.53	0.00	378.9	3.4	2.43	2.93	10.27	12.77	18.77	25.92	0.0	62.7	4.36	20.8	33.5	0.17	4.21	245.21
20-08-2023	770	1.82	0.00	440.8	4.0	1.72	2.22	10.71	13.21	19.21	19.64	0.0	63.5	4.84	23.6	34.4	0.18	1.66	197.64
21-08-2023	771	1.18	0.00	375.9	4.6	1.08	1.58	11.09	13.59	19.59	23.48	0.0	64.1	8.78	26.0	35.2	0.15	2.14	199.48
22-08-2023	762	1.01	0.00	338.5	4.0	0.91	1.41	10.70	13.20	19.20	78.03	0.0	63.4	10.41	17.8	34.4	0.10	4.51	170.24
23-08-2023	765	1.08	0.00	331.5	4.2	0.98	1.48	10.79	13.29	19.29	40.29	0.0	63.6	10.54	27.6	34.6	0.11	3.64	164.57
24-08-2023	763	1.47	0.00	247.6	4.3	1.37	1.87	10.84	13.34	19.34	40.08	0.0	63.7	7.77	26.7	34.7	0.11	4.58	221.59
25-08-2023	762	1.42	0.00	373.2	4.4	1.32	1.82	10.91	13.41	19.41	55.67	0.0	63.8	2.91	25.4	34.8	0.11	3.16	215.31
26-08-2023	762	1.32	0.00	368.2	4.4	1.22	1.72	10.94	13.44	19.44	39.76	0.0	63.9	2.94	21.3	34.9	0.11	2.02	298.47
27-08-2023	764	1.00	0.00	371.0	4.3	0.90	1.40	10.91	13.41	19.41	30.98	0.0	63.8	2.90	18.5	34.8	0.12	3.64	202.18
28-08-2023	765	1.22	0.00	212.5	4.2	1.12	1.62	10.82	13.32	19.32	32.41	0.0	63.6	5.07	20.1	34.7	0.11	2.48	152.36
29-08-2023	778	1.40	0.00	202.3	3.8	1.30	1.80	10.56	13.06	19.06	42.65	3.8	63.2	8.86	24.9	34.1	0.09	0.46	174.56
30-08-2023	762	1.21	0.00	427.7	3.6	1.11	1.61	10.40	12.90	18.90	26.41	1.2	62.9	6.87	38.4	33.8	0.09	1.34	188.74
31-08-2023	762	1.14	0.00	345.8	2.8	1.04	1.54	9.92	12.42	18.42	26.94	2.0	62.1	3.13	25.7	32.9	0.09	5.22	263.14
MINIMUM	**749.0**	**1.0**	**0.0**	**123.4**	**2.8**	**0.9**	**1.4**	**9.9**	**12.4**	**18.4**	**19.6**	**0.0**	**62.1**	**2.9**	**17.8**	**32.9**	**0.1**	**0.5**	**124.9**
MAXIMUM	**780.0**	**3.2**	**0.0**	**544.7**	**5.8**	**3.1**	**3.6**	**11.9**	**14.4**	**20.4**	**78.0**	**3.8**	**65.5**	**14.5**	**38.4**	**36.8**	**0.2**	**6.1**	**298.5**
AVERAGE	**763.8**	**1.6**	**0.0**	**376.5**	**4.4**	**1.5**	**2.0**	**11.0**	**13.5**	**19.5**	**37.0**	**0.3**	**63.9**	**7.9**	**24.6**	**34.9**	**0.1**	**3.3**	**202.9**

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	mmHg	ug/m3	ppm	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	mm	%	ug/m3	W/m2	degree C	m/s	m/s	degree
Sep-23																			
01-09-2023	762	1.17	0.00	377.2	4.0	1.07	1.57	10.70	13.20	19.20	27.79	0.0	63.4	7.38	57.2	34.4	0.10	0.64	159.3
02-09-2023	755	1.12	0.00	406.9	3.5	1.02	1.52	8.47	12.83	18.83	27.47	0.0	62.8	8.91	28.7	33.7	0.09	0.84	222.48
03-09-2023	758	1.36	0.00	409.2	3.8	1.26	1.76	9.45	13.08	19.08	33.80	0.0	63.3	9.22	25.0	34.2	0.07	1.69	201.38
04-09-2023	760	2.13	0.00	184.6	3.2	2.03	2.53	10.15	9.68	18.65	22.09	0.0	62.5	10.32	20.5	33.3	0.09	0.74	178.25
05-09-2023	774	2.46	0.00	496.6	3.2	2.36	2.86	7.49	10.45	18.65	56.62	0.0	62.5	11.31	22.6	33.3	0.09	0.49	155.36
06-09-2023	749	1.92	0.00	312.5	3.2	1.82	2.32	10.13	12.63	18.63	50.85	0.0	62.5	12.58	22.5	33.3	0.09	0.67	209.47
07-09-2023	753	2.08	0.00	418.6	2.8	1.98	2.48	9.89	13.41	18.39	66.99	0.0	62.1	13.43	22.0	32.8	0.09	2.15	231.45
08-09-2023	769	2.36	0.00	461.3	2.7	2.26	2.76	9.84	8.40	18.34	104.14	0.0	62.0	10.62	21.0	32.7	0.09	1.72	163.48
09-09-2023	764	1.82	0.00	569.9	3.8	1.72	2.22	10.42	10.26	19.05	13.27	0.0	63.0	4.19	23.5	34.1	0.09	0.45	254.82
10-09-2023	762	2.17	0.00	570.0	4.4	2.07	2.57	10.98	9.45	19.48	65.65	0.0	63.9	4.80	24.4	35.0	0.08	1.56	202.74
11-09-2023	762	2.08	0.00	288.5	3.7	1.98	2.48	7.00	13.00	19.00	14.93	0.0	63.1	6.01	18.7	34.0	0.10	1.89	199.78
12-09-2023	768	1.60	0.00	361.7	3.8	1.50	2.00	7.46	12.45	19.05	19.52	0.0	63.2	7.91	23.0	34.1	0.10	1.96	187.45
13-09-2023	770	1.44	0.00	187.5	3.7	1.34	1.84	10.51	9.40	19.01	63.96	0.0	63.1	7.86	22.7	34.0	0.08	2.15	164.25
14-09-2023	762	2.08	0.00	369.9	3.3	1.98	2.48	9.48	9.48	18.71	68.73	0.0	62.6	7.51	15.5	33.4	0.10	1.32	124.17
15-09-2023	763	1.93	0.00	489.6	3.7	1.83	2.33	6.58	13.00	19.00	19.19	0.0	63.1	8.47	24.4	34.0	0.09	1.21	206.82
16-09-2023	762	2.28	0.00	370.8	3.7	2.18	2.68	7.40	13.00	22.15	58.59	0.0	63.1	7.84	17.7	34.0	0.07	0.99	204.83
17-09-2023	762	1.40	0.00	400.6	3.3	1.30	1.80	10.22	12.72	18.72	42.72	1.4	62.6	9.68	21.3	33.5	0.07	0.91	189.4
18-09-2023	764	1.50	0.00	344.1	2.7	1.40	1.90	9.84	12.34	18.34	45.09	1.6	62.0	7.10	31.1	32.7	0.09	0.63	241.3
19-09-2023	763	1.49	0.00	274.3	2.4	1.39	1.89	9.63	11.24	18.13	20.95	0.0	61.6	6.86	22.2	32.3	0.10	0.83	212.6
20-09-2023	762	1.43	0.00	337.2	3.3	1.33	1.83	10.20	12.70	18.70	24.92	0.0	62.6	7.51	25.0	33.4	0.10	1.21	201.3
21-09-2023	762	1.58	0.00	381.1	2.9	1.48	1.98	9.94	9.64	23.64	65.84	0.0	62.2	6.30	21.5	32.9	0.15	2.08	127.45
22-09-2023	762	1.39	0.00	274.5	3.1	1.29	1.79	10.09	12.59	20.47	38.62	0.0	62.4	4.06	24.2	33.2	0.19	1.73	224.25
23-09-2023	762	1.54	0.00	469.7	3.3	1.44	1.94	10.25	9.12	21.48	23.63	1.4	62.7	4.24	24.7	33.5	0.09	1.51	124.17
24-09-2023	758	1.90	0.00	212.4	3.6	1.80	2.30	10.40	12.90	23.12	23.17	0.0	63.0	4.40	22.4	33.8	0.08	2.31	182.17
25-09-2023	762	1.45	0.00	487.0	2.9	1.35	1.85	9.97	12.47	21.47	29.04	5.2	62.2	4.73	21.4	33.0	0.09	2.36	178.63
26-09-2023	762	1.49	0.00	164.6	2.5	1.39	1.89	9.69	13.40	22.45	20.33	0.0	61.7	5.80	52.7	32.4	0.10	2.48	187.4
27-09-2023	759	1.59	0.00	546.0	3.1	1.49	1.99	10.06	12.56	23.47	19.17	0.0	62.4	6.22	25.1	33.1	0.08	1.64	247.17
28-09-2023	753	2.30	0.00	245.6	2.5	2.20	2.70	9.71	12.21	22.45	24.69	0.0	61.8	5.83	18.0	32.4	0.08	0.45	187.45
29-09-2023	753	2.28	0.00	490.5	2.3	2.18	2.68	9.55	12.05	18.05	25.56	0.0	61.5	3.62	12.9	32.1	0.09	2.02	164.25
30-09-2023	753	2.71	0.00	457.5	3.0	2.61	3.11	7.45	14.56	21.45	17.86	0.0	62.4	2.95	19.9	33.1	0.08	2.1	124.17
MINIMUM	**749.0**	**1.1**	**0.0**	**164.6**	**2.3**	**1.0**	**1.5**	**6.6**	**8.4**	**18.1**	**13.3**	**0.0**	**61.5**	**3.0**	**12.9**	**32.1**	**0.1**	**0.5**	**124.2**
MAXIMUM	**774.0**	**2.7**	**0.0**	**570.0**	**4.4**	**2.6**	**3.1**	**11.0**	**14.6**	**23.6**	**104.1**	**5.2**	**63.9**	**13.4**	**57.2**	**35.0**	**0.2**	**2.5**	**254.8**
AVERAGE	**761.0**	**1.8**	**0.0**	**378.7**	**3.2**	**1.7**	**2.2**	**9.4**	**11.8**	**19.9**	**37.8**	**0.3**	**62.6**	**7.3**	**24.4**	**33.4**	**0.1**	**1.4**	**188.6**

TNPL

TAMILNADU NEWSPRINT AND PAPERS LIMITED

CONTINUOUS AMBIENT AIR QUALITY MONITORING STATION DATA

MONTH	TNPL PM2.5_COAL_ YARD	MONTH	TNPL PM2.5_COAL_ YARD	MONTH	TNPL PM2.5_COAL_ YARD	MONTH	TNPL PM2.5_COAL_ YARD	MONTH	TNPL PM2.5_COAL_ YARD	MONTH	TNPL PM2.5_COAL_ YARD
	ug/m3		ug/m3		ug/m3		ug/m3		ug/m3		ug/m3
1-Apr-23	11.65	1-May-23	11.14	1-Jun-23	12.31	1-Jul-23	11.31	1-Aug-23	10.65	1-Sep-23	11.75
2-Apr-23	11.92	2-May-23	11.38	2-Jun-23	11.12	2-Jul-23	16.14	2-Aug-23	15.49	2-Sep-23	9.24
3-Apr-23	11.79	3-May-23	12.07	3-Jun-23	12.06	3-Jul-23	18.35	3-Aug-23	12.48	3-Sep-23	13.64
4-Apr-23	12.05	4-May-23	11.70	4-Jun-23	11.93	4-Jul-23	10.34	4-Aug-23	16.42	4-Sep-23	15.48
5-Apr-23	11.21	5-May-23	12.12	5-Jun-23	10.23	5-Jul-23	12.33	5-Aug-23	19.47	5-Sep-23	18.94
6-Apr-23	11.54	6-May-23	12.04	6-Jun-23	12.29	6-Jul-23	9.54	6-Aug-23	20.15	6-Sep-23	19.64
7-Apr-23	11.14	7-May-23	11.82	7-Jun-23	12.31	7-Jul-23	11.12	7-Aug-23	5.63	7-Sep-23	17.48
8-Apr-23	11.20	8-May-23	11.97	8-Jun-23	11.49	8-Jul-23	16.47	8-Aug-23	8.74	8-Sep-23	16.54
9-Apr-23	11.01	9-May-23	11.85	9-Jun-23	10.97	9-Jul-23	12.29	9-Aug-23	22.15	9-Sep-23	18.49
10-Apr-23	11.10	10-May-23	12.18	10-Jun-23	10.78	10-Jul-23	12.25	10-Aug-23	16.40	10-Sep-23	16.34
11-Apr-23	11.14	11-May-23	12.06	11-Jun-23	12.31	11-Jul-23	17.75	11-Aug-23	15.48	11-Sep-23	14.59
12-Apr-23	12.60	12-May-23	12.19	12-Jun-23	11.39	12-Jul-23	13.29	12-Aug-23	11.64	12-Sep-23	7.48
13-Apr-23	11.41	13-May-23	12.34	13-Jun-23	10.55	13-Jul-23	12.31	13-Aug-23	19.78	13-Sep-23	9.12
14-Apr-23	11.68	14-May-23	12.30	14-Jun-23	12.25	14-Jul-23	16.29	14-Aug-23	18.78	14-Sep-23	12.33
15-Apr-23	11.56	15-May-23	12.18	15-Jun-23	11.54	15-Jul-23	12.30	15-Aug-23	19.48	15-Sep-23	10.30
16-Apr-23	11.69	16-May-23	12.23	16-Jun-23	12.31	16-Jul-23	14.31	16-Aug-23	16.48	16-Sep-23	17.77
17-Apr-23	11.59	17-May-23	11.95	17-Jun-23	12.32	17-Jul-23	16.35	17-Aug-23	15.48	17-Sep-23	18.43
18-Apr-23	11.57	18-May-23	11.94	18-Jun-23	12.09	18-Jul-23	17.35	18-Aug-23	17.42	18-Sep-23	15.45
19-Apr-23	11.54	19-May-23	12.29	19-Jun-23	11.80	19-Jul-23	13.34	19-Aug-23	16.34	19-Sep-23	21.60
20-Apr-23	11.94	20-May-23	12.14	20-Jun-23	11.82	20-Jul-23	12.35	20-Aug-23	12.35	20-Sep-23	9.64
21-Apr-23	12.01	21-May-23	12.24	21-Jun-23	11.95	21-Jul-23	12.35	21-Aug-23	12.49	21-Sep-23	11.97
22-Apr-23	11.97	22-May-23	12.07	22-Jun-23	14.21	22-Jul-23	14.34	22-Aug-23	14.34	22-Sep-23	11.80
23-Apr-23	11.70	23-May-23	11.88	23-Jun-23	12.27	23-Jul-23	12.35	23-Aug-23	14.74	23-Sep-23	17.40
24-Apr-23	11.49	24-May-23	12.29	24-Jun-23	10.88	24-Jul-23	14.63	24-Aug-23	18.45	24-Sep-23	20.15
25-Apr-23	11.39	25-May-23	12.18	25-Jun-23	12.10	25-Jul-23	17.55	25-Aug-23	16.35	25-Sep-23	11.97
26-Apr-23	11.82	26-May-23	11.91	26-Jun-23	11.64	26-Jul-23	12.34	26-Aug-23	19.48	26-Sep-23	10.40
27-Apr-23	11.40	27-May-23	11.95	27-Jun-23	12.32	27-Jul-23	15.18	27-Aug-23	17.40	27-Sep-23	12.08
28-Apr-23	11.09	28-May-23	11.80	28-Jun-23	12.34	28-Jul-23	12.33	28-Aug-23	10.24	28-Sep-23	12.34
29-Apr-23	10.82	29-May-23	12.08	29-Jun-23	12.33	29-Jul-23	15.64	29-Aug-23	8.46	29-Sep-23	14.20
30-Apr-23	11.22	30-May-23	12.03	30-Jun-23	12.32	30-Jul-23	16.18	30-Aug-23	14.25	30-Sep-23	12.34
		31-May-23	12.22			31-Jul-23	14.14	31-Aug-23	17.54		
MINIMUM	**10.82**	**MINIMUM**	**11.14**	**MINIMUM**	**10.23**	**MINIMUM**	**9.54**	**MINIMUM**	**5.63**	**MINIMUM**	**7.48**
MAXIMUM	**12.60**	**MAXIMUM**	**12.34**	**MAXIMUM**	**14.21**	**MAXIMUM**	**18.35**	**MAXIMUM**	**22.15**	**MAXIMUM**	**21.60**
AVERAGE	**11.54**	**AVERAGE**	**12.02**	**AVERAGE**	**11.87**	**AVERAGE**	**13.96**	**AVERAGE**	**15.31**	**AVERAGE**	**14.30**

ONLINE - STACK EMISSION MONITORING DATA

SUMMARY OF REALTIME STACK EMISSION MONITORING DATA																														
MONTH	PB 4 _ CO	PB 5 _ CO	PB 6 _ CO	PB 7 _ CO	PB 4 _ PM	PB 5 _ PM	PB 6 _ PM	PB 7 _ PM	PB 4 _ SO2	PB 5 _ SO2	PB 6 _ SO2	PB 7 _ SO2	PB 4 _ NO2	PB 5 _ NO2	PB 6 _ NO2	PB 7 _ NO2	SRP CO_ LK_1	SRP CO_ LK_2	SRP CO_ RB # 3	SRP H2S_ LK_1	SRP H2S_ LK_2	SRP H2S_ RB#3	SRP NOX_ LK_1	SRP NOX_ LK_2	SRP NOX_ RB # 3	SRP PM_ LK 1	SRP PM_ LK 2	SRP PM_ RB # 3	SRP SO2_ LK_1	SRP SO2_ LK_2	SRP SO2_ RB # 3
UOM	(mg/Nm3)																ppm									mg/m3			ppm		
Apr-23																														
1-Apr-23	10.02	199.43	23.54	1.25	16.51	15.12	16.21	0.39	262.32	283	357.13	0	245.24	0.06	75.43	0	16.1	674.7	358.47	1.270	0.84	0.24	27.10	12.46	57.66	30.10	80.69	51.10	19.97	156.80	12.04
2-Apr-23	9.25	265.05	50.92	1.24	16.33	16.24	15.72	0.39	217.83	319.04	203.32	0	247.33	0.87	65.73	0	17.3	514.7	384.80	1.285	0.79	0.31	27.08	10.58	52.79	33.77	71.85	47.99	21.44	162.89	11.71
3-Apr-23	10.29	150.09	12.72	1.21	18.14	14.96	16.59	0.39	207.65	364.7	190.43	0	240.58	2.49	80.61	0	17.6	398.5	334.41	1.281	0.79	0.34	19.58	14.71	54.32	33.36	88.70	50.17	19.41	187.92	12.70
4-Apr-23	10.15	117.8	8.96	1.21	20.17	14.82	16.14	0.39	212.18	340.72	229.93	0	232.99	2.67	74.04	0	17.8	245.1	218.20	1.279	0.83	0.42	38.70	12.77	54.03	33.28	75.15	49.18	17.34	151.14	11.41
5-Apr-23	9.72	128.95	7.77	1.15	20.99	14.13	16.03	0.39	218.32	345.43	283.08	0	231.63	0.72	54.3	0	19.7	386.3	181.14	1.276	0.77	0.40	16.00	10.59	56.36	38.88	43.44	47.64	16.12	167.35	11.31
6-Apr-23	10.31	146.35	12.32	1.12	22.41	14.26	16.42	0.39	230.62	316.05	178.56	0	229.61	0.46	71.71	0	13.8	208.5	230.14	1.283	0.79	0.40	40.48	42.75	53.39	32.49	68.59	48.49	14.82	177.92	12.30
7-Apr-23	9.48	188.89	23.29	1.02	21.98	13.61	16.78	0.39	183.34	322.35	71.49	0	217.76	1.48	105.23	0	15.3	324.6	340.59	1.265	0.86	0.32	31.13	38.07	52.71	38.24	63.23	48.79	25.48	187.18	13.09
8-Apr-23	NA	441.62	21.59	0.98	15.5	15.22	17.03	0.39	134.5	318.06	60.76	0	214.53	1.89	105.07	0	17.7	276.6	400.09	1.262	0.75	0.17	19.47	91.27	53.83	36.68	110.98	48.99	20.05	130.52	12.99
9-Apr-23	0.66	224.82	9.93	0.95	0.34	15.07	16.7	0.39	1.42	315.79	78.52	0	NA	5.58	112.48	0	15.4	319.1	379.50	1.266	0.79	0.14	34.67	42.29	50.00	41.61	98.66	47.98	10.97	131.29	10.42
10-Apr-23	0.74	211.48	13.72	0.99	0.84	15.07	16.29	0.39	2.5	303.48	211.44	0	2.86	4.96	80.29	0	13.6	171.6	352.83	1.268	0.74	0.19	31.42	36.71	55.60	37.95	76.65	47.85	15.60	138.92	11.89
11-Apr-23	11.65	227.28	29.84	1.15	6.76	14.11	16.62	0.39	60.67	294.93	171.04	0	65.57	0.52	107.45	0	15.5	242.8	413.20	1.263	0.81	0.12	33.86	34.07	53.00	26.30	73.94	47.90	14.50	143.04	16.08
12-Apr-23	9.87	79.51	54.24	1.29	22.8	13.13	16.19	0.39	266.84	335.98	275.97	0	242.76	0.97	74.12	0	13.8	43.1	55.40	1.264	0.02	0.41	14.81	0.25	9.75	27.75	37.46	45.96	6.88	0.74	9.11
13-Apr-23	9.94	169.25	91.3	2.14	29.29	13.42	16.25	0.39	208.11	294.04	175.03	31.98	253.16	0.05	98.95	13.49	15.5	62.8	7.52	1.263	0.01	0.21	9.22	0.10	5.78	27.36	60.61	46.20	12.92	0.07	7.68
14-Apr-23	10.07	304.83	40.58	1.2	39.04	13.58	16.28	0.39	287.24	318.66	118.61	25.08	243.21	0	73.74	12.12	18.7	63.0	327.23	1.266	0.01	0.40	14.62	0.12	52.40	26.31	22.66	45.80	3.53	0.07	11.07
15-Apr-23	10.01	237	52.54	0	33.2	14.69	17.07	0.39	215.28	239.25	127.37	0.05	240.08	0	87.74	8.49	18.2	184.1	261.20	1.267	0.10	0.45	33.49	0.42	57.53	28.34	12.81	44.89	18.37	16.93	10.87
16-Apr-23	10.12	214.07	12.88	0	33.62	14.89	16.49	0.39	197.75	215.26	101.82	0.02	236.94	0.01	74.89	5.4	14.1	829.4	271.89	1.272	0.68	0.45	35.00	1.00	52.93	27.48	35.85	45.00	24.24	110.61	12.70
17-Apr-23	10.17	195.09	17.94	0	35.04	13.6	16.26	0.39	196.31	240.33	97.1	0	230.54	0.01	93.27	4.53	14.3	724.6	372.44	1.284	0.69	0.20	31.81	1.00	47.34	33.24	29.08	45.17	19.10	85.21	16.41
18-Apr-23	10.44	172.01	16.55	0	34.61	13.55	16.22	0.39	214.65	298.09	135.88	0	314.2	0.04	113.83	4.1	18.0	844.8	394.98	1.275	0.69	0.20	15.89	1.00	52.11	26.77	23.67	44.86	38.12	97.73	17.77
19-Apr-23	9.39	109.41	12.52	0	34.79	12.86	16.18	0.39	219.09	328.97	131.18	0	328.82	0.02	133.59	3.53	12.9	823.2	306.96	1.295	0.72	0.35	42.83	1.00	53.61	26.47	24.56	44.39	42.09	74.44	14.02
20-Apr-23	10.23	115.26	13.23	0	35.4	12.93	15.95	0.39	232.84	345.14	214.24	0	350.09	5.26	129.62	4.2	15.6	848.0	406.79	1.321	0.73	0.19	18.08	1.00	51.28	31.95	25.82	44.03	25.96	68.55	17.33
21-Apr-23	10.4	149.7	14.18	0	34.98	12.29	16.36	0.39	231.86	307.78	242.92	0	347.2	14.34	127.94	3.73	13.1	743.9	262.48	1.305	0.72	0.38	20.64	1.00	53.93	40.67	26.88	43.97	36.96	81.21	13.35
22-Apr-23	11.16	251.36	11.4	0	35.85	11.03	16.14	0.37	194.49	279.51	272.96	0	288.72	22.88	124.92	2.42	15.8	626.0	243.16	1.317	0.76	0.40	33.58	0.99	57.82	32.56	37.07	43.96	34.87	74.60	13.64
23-Apr-23	10.97	0	9.74	0	34.27	11.24	15.75	0.38	190.99	50.7	228.33	0	283.79	0	98.68	2.56	20.2	746.2	129.29	1.289	0.72	0.49	21.43	1.08	55.65	30.18	35.45	43.98	19.17	101.53	11.45
24-Apr-23	10.87	66.01	9.13	0	35.48	20.48	16.37	0.38	189.35	114.51	89.88	0	282.04	9.02	74.22	2.54	14.4	795.3	189.14	1.288	0.60	0.33	32.35	1.00	56.53	17.42	34.56	44.10	16.03	99.96	10.91
25-Apr-23	10.64	109.05	10.43	0	36.04	12.56	16.5	0.38	195.97	234.85	108.76	0	293.43	8.09	68.57	2.69	19.3	761.7	199.95	1.274	0.64	0.38	24.78	1.00	56.12	29.44	33.62	44.04	11.84	87.21	10.72
26-Apr-23	10.75	178.13	11.67	0	36.43	12.36	16.94	0.38	189.32	317.69	121.36	0	282.79	48.32	64.75	2.68	19.8	757.9	231.76	1.293	0.65	0.29	25.60	1.00	53.98	59.32	33.95	43.26	25.02	77.46	9.32
27-Apr-23	9.46	332.3	13.27	0	34.93	12.75	16.94	0.38	193.16	259.16	203.71	0	288.55	58.98	69.56	2.62	17.7	347.7	233.46	1.280	0.47	0.32	16.57	1.09	56.12	42.69	64.31	41.81	22.13	35.12	10.00
28-Apr-23	9.15	440.72	18.72	0	35.66	12.55	18.03	0.38	199.76	254.5	106.83	0	298.53	54.89	34.69	2.89	19.0	682.3	348.44	1.278	0.75	0.17	21.37	1.20	50.07	47.47	53.03	41.92	17.10	86.38	15.40
29-Apr-23	9.53	339.48	9.09	0	33.98	12.12	18.04	0.38	197.46	279.05	138.46	0	294.28	34.02	47.81	2.61	16.6	716.8	277.85	1.237	0.70	0.33	39.21	1.49	55.94	58.40	62.58	41.98	10.00	60.26	11.34
30-Apr-23	10.51	188.03	7.33	0	35.38	11.96	16.71	0.38	189.67	297.91	141.98	0	282.97	32.73	59.51	2.4	16.6	495.4	323.93	1.278	0.65	0.35	19.87	4.77	53.07	56.64	60.85	41.94	11.98	87.07	11.05
MINIMUM	**0.66**	**0.00**	**7.33**	**0.00**	**0.34**	**11.03**	**15.72**	**0.37**	**1.42**	**50.70**	**60.76**	**0.00**	**2.86**	**0.00**	**34.69**	**0.00**	**12.90**	**43.10**	**7.52**	**1.24**	**0.01**	**0.12**	**9.22**	**0.10**	**5.78**	**17.42**	**12.81**	**41.81**	**3.53**	**0.07**	**7.68**
MAXIMUM	**11.65**	**441.62**	**91.30**	**2.14**	**39.04**	**20.48**	**18.04**	**0.39**	**287.24**	**364.70**	**357.13**	**31.98**	**350.09**	**58.98**	**133.59**	**13.49**	**20.20**	**848.00**	**413.20**	**1.32**	**0.86**	**0.49**	**42.83**	**91.27**	**57.82**	**59.32**	**110.98**	**51.10**	**42.09**	**187.92**	**17.77**
AVERAGE	**9.52**	**198.43**	**21.38**	**0.56**	**27.03**	**13.82**	**16.51**	**0.39**	**191.38**	**284.50**	**168.94**	**1.90**	**252.08**	**10.38**	**86.09**	**2.77**	**16.45**	**495.29**	**281.24**	**1.28**	**0.64**	**0.31**	**26.35**	**12.23**	**50.86**	**35.10**	**52.22**	**45.78**	**19.73**	**99.34**	**12.34**

SUMMARY OF REALTIME STACK EMISSION MONITORING DATA																															
MONTH	PB 4 _ CO	PB 5 _ CO	PB 6 _ CO	PB 7 _ CO	PB 4 _ PM	PB 5 _ PM	PB 6 _ PM	PB 7 _ PM	PB 4 _ SO2	PB 5 _ SO2	PB 6 _ SO2	PB 7 _ SO2	PB 4 _ NO2	PB 5 _ NO2	PB 6 _ NO2	PB 7 _ NO2	SRP CO_ LK_1	SRP CO_ LK_2	SRP CO_ RB # 3	SRP H2S_ LK_1	SRP H2S_ LK_2	SRP H2S_ RB#3	SRP NOX_ LK_1	SRP NOX_ LK_2	SRP NOX_ RB # 3	SRP PM_ LK 1	SRP PM_ LK 2	SRP PM_ RB # 3	SRP SO2_ LK_1	SRP SO2_ LK_2	SRP SO2_ RB # 3
UOM	(mg/Nm3)																ppm									mg/m3			ppm		
May-23																															
1-May-23	10.72	167.87	8.41	0	36.26	12.11	15.49	0.38	192.33	325.55	126.59	0	287.65	37.13	53.67	2.24	19.1	404.5	282.51	1.290	0.76	0.32	18.66	10.60	54.18	48.76	62.19	42.00	4.43	106.28	10.09
2-May-23	10.41	99.36	7.86	0	33.1	10.88	17.16	0.38	204.41	285.12	133.65	0	308.04	33.27	64.87	2.02	147.2	307.1	219.74	1.011	0.50	0.35	37.87	3.71	40.95	47.86	82.92	39.59	13.86	69.62	9.34
3-May-23	9.75	199.29	8.63	0	34.48	10.89	16.99	0.38	190.17	197.25	78.28	0	284.87	32.78	61.1	1.74	17.0	321.9	365.98	1.286	0.61	0.30	9.28	2.36	55.36	51.05	86.92	41.96	16.73	78.03	10.36
4-May-23	8.39	360.77	11.83	0	40.05	18.49	16.4	0.38	187.78	300.74	47.05	0	280.45	46.03	59.75	1.44	20.4	411.1	312.34	1.280	0.75	0.39	23.46	1.06	56.73	57.63	82.66	41.95	44.86	80.48	9.79
5-May-23	8.93	106.64	15.93	0	32.85	17.98	15.9	0.38	196.8	223.49	101.39	0	296.13	17.12	57.68	0.85	59.5	215.1	351.46	1.280	0.65	0.22	49.85	1.09	48.28	61.98	24.54	42.61	24.22	41.70	11.21
6-May-23	10.32	151.37	10.25	0	33.98	21.63	16.57	0.38	182.62	231.58	64.96	0	273.05	16.99	56.21	0.81	59.7	241.2	353.64	1.275	0.64	0.17	16.16	1.10	54.87	52.31	18.08	42.15	27.99	50.38	10.53
7-May-23	10.88	119.89	7.3	0	33.83	24.23	15.8	0.38	199.21	233.15	55.14	0	299.91	22.16	57.48	0.47	1.5	311.0	326.74	0.175	0.73	0.25	3.60	1.15	54.31	25.38	19.44	44.75	6.45	37.23	9.57
8-May-23	10.7	173.25	8.09	0	34.38	24	15.37	0.38	202.65	233.68	65.4	0	305.4	18.13	57.12	0.34	-2.0	433.4	328.81	-0.013	0.80	0.18	2.22	1.10	54.18	19.62	20.57	43.39	1.03	32.24	10.47
9-May-23	10.2	99.53	12.95	0	34.65	23.74	15.95	0.38	191.44	224.19	129.04	0	286.51	9.66	54.93	0.59	8.3	115.7	252.31	0.350	0.80	0.24	15.21	1.17	52.26	9.17	17.11	42.04	4.64	16.70	9.22
10-May-23	10.11	88.95	7.97	0	33.93	24.04	16.29	0.38	198.57	225.63	115.55	0	297.35	5.37	57.83	0.25	167.6	324.7	326.62	1.576	0.68	0.23	14.84	1.06	51.15	25.11	25.79	41.95	23.65	38.23	10.98
11-May-23	9.94	97.69	8.71	0	35.78	21.84	15.41	0.38	197.2	245.3	121.38	0	294.54	4.97	58.02	0.21	113.1	766.5	301.62	1.356	0.69	0.23	18.39	1.87	51.93	32.88	13.87	42.06	23.39	77.65	9.77
12-May-23	10	197.21	7.33	0	38.36	24.77	16.11	0.38	193.86	300.47	70.67	0	289.16	3.68	59.43	0.08	58.7	741.6	253.29	1.281	0.66	0.35	86.94	1.00	59.96	75.12	15.17	42.43	114.23	72.41	8.81
13-May-23	8.43	300	12.85	0	40.61	24.89	15.12	0.38	204.46	273.77	72.86	0	304.73	0.26	62.32	0.03	86.8	542.9	346.34	1.407	0.66	0.31		1.98	53.92	75.12	16.53	42.34		51.29	9.68
14-May-23	NA	268.99	17.1	0	37.83	24.68	15.66	0.38	212.33	268.92	118.91	0	315.93	0.02	58.85	0.01	96.3	232.5	225.90	1.253	0.79	0.43	33.57	1.01	54.17	75.12	19.34	42.47	11.91	3.43	9.70
15-May-23	1.53	318.91	20.97	0	27.05	24.68	15.65	0.38	123.64	316.78	111.22	0	308	0	59.11	0	459.0	343.5	140.90	1.184	0.80	0.52		15.64	52.06	75.12	24.69	42.48		42.67	9.34
16-May-23	0.99	424.5	16.02	0	4.85	24.77	15.85	0.38	1.41	302.78	135.02	0	NA	0	58.38	0	262.7	700.8	177.44	1.315	0.71	0.47	49.12	36.46	53.29	75.12	26.74	42.87	52.42	75.99	9.34
17-May-23	8.53	21.25	12.52	0	54.99	9.5	15.71	0.38	217.44	81.2	113.98	0	357.19	0.01	55.44	0	17.1	564.8	286.75	1.418	0.61	0.37	35.03	19.01	49.80	75.12	38.05	42.78	33.55	46.73	11.03
18-May-23	9	1.58	20.38	0	59.67	0	16.28	0.38	228.03	21.37	80.19	0	351.12	0	56.67	0	17.5	367.2	195.94	1.354	0.74	0.49	29.02	36.55	49.45	75.12	49.26	42.68	17.09	74.03	9.62
19-May-23	10.1	3.12	13.7	0	61.48	0	15.84	0.38	222.56	0.55	58.36	0	344.08	0	57.27	0	12.4	180.3	363.42	1.321	0.68	0.14	20.12	28.15	48.80	75.12	53.40	42.48	21.06	58.37	14.88
20-May-23	10.15	87.19	21.46	0	64.63	15.61	18.08	0.38	230.96	104.87	58.08	0	356.6	2.05	54.74	0	15.0	157.2	171.98	1.307	0.43	0.40	24.76	7.32	54.38	75.12	44.31	42.57	17.08	32.20	9.20
21-May-23	9.84	179.95	11.55	0	85.88	36.71	21.46	0.38	233.27	176.17	69.24	0	359.11	0.01	56.39	0	18.7	319.6	121.84	1.303	0.78	0.44	21.85	24.70	54.46	75.12	34.83	42.52	16.78	60.97	8.82
22-May-23	10.28	151.21	11.41	0	47.78	36.62	19.21	0.38	215.3	154.54	41.28	0	332.6	0.06	56.17	0	17.7	37.3	134.92	1.296	0.77	0.53	6.28	26.76	55.47	75.12	45.61	42.48	9.15	39.43	8.67
23-May-23	9.91	136.61	11.84	0	23.19	34.65	18.41	0.37	222.18	187.88	68.59	0	344.63	1.59	75.71	0	17.1	198.6	200.68	1.275	0.74	0.48	36.78	23.08	45.78	75.12	51.29	40.65	10.01	50.19	9.36
24-May-23	10.6	242.3	15.52	0	27.44	37.29	15.15	0.37	225.87	184.69	100.18	0	349.71	2.94	112.14	0	16.6	405.1	196.39	1.282	0.82	0.44	23.47	21.96	54.95	75.12	83.15	42.50	25.08	55.83	9.24
25-May-23	10.96	157.86	10.59	0	27.7	37.1	16.23	0.38	230.17	166.4	97.79	0	355.99	3.9	116.32	0	17.2	202.8	178.11	1.272	0.76	0.42	31.72	20.87	58.47	75.12	78.04	42.11	15.23	55.84	9.26
26-May-23	9.99	245.56	16.58	0	28.69	37.76	16.31	0.37	223.44	157.07	152.54	0	345.43	0.01	124.76	0	16.5	77.1	179.53	1.271	0.70	0.47	17.01	23.23	57.37	75.12	70.40	41.91	29.92	58.02	9.41
27-May-23	9.38	252.05	16.87	0	28.13	37.72	10.09	0.37	217.8	187.95	113.33	0	339.95	3.44	69.48	0	16.5	256.8	313.09	1.297	0.75	0.36	8.57	7.06	54.17	75.12	78.57	42.00	43.38	54.31	9.95
28-May-23	9.16	167.3	53.59	0	28.32	33.16	11.03	0.38	223.21	197.05	80.28	0	345.77	0	61.96	0	18.4	273.8	223.39	1.303	0.71	0.41	5.81	3.88	53.14	75.12	81.34	41.88	23.22	56.59	9.44
29-May-23	10.1	192.96	13.16	0	28.57	32.33	14.9	0.38	232.42	213.22	83.88	0	359.13	0	72.92	0	19.0	46.2	208.84	1.290	0.69	0.40	55.86	25.45	54.73	75.12	100.35	41.83	52.41	28.32	9.69
30-May-23	10.25	281.82	27.35	0	29.03	35.46	21.52	0.38	222.28	207.36	87.04	0	343.2	0	70.7	0	14.6	106.2	175.74	1.283	0.65	0.36	32.37	23.68	53.33	75.12	88.17	41.76	28.11	44.75	9.13
31-May-23	11.11	246.38	46.32	0	32.53	35.7	12.68	0.38	227.09	163.94	118.56	0	349.91	0	61.53	0	16.0	65.5	261.95	1.278	0.68	0.39	7.92	4.82	50.90	75.12	79.48	41.73	21.94	39.14	10.92
MINIMUM	**0.99**	**1.58**	**7.30**	**0.00**	**4.85**	**0.00**	**10.09**	**0.37**	**1.41**	**0.55**	**41.28**	**0.00**	**273.05**	**0.00**	**53.67**	**0.00**	**-2.00**	**37.30**	**121.84**	**-0.01**	**0.43**	**0.14**	**2.22**	**1.00**	**40.95**	**9.17**	**13.87**	**39.59**	**1.03**	**3.43**	**8.67**
MAXIMUM	**11.11**	**424.50**	**53.59**	**0.00**	**85.88**	**37.76**	**21.52**	**0.38**	**233.27**	**325.55**	**152.54**	**0.00**	**359.13**	**46.03**	**124.76**	**2.24**	**459.00**	**766.50**	**365.98**	**1.58**	**0.82**	**0.53**	**86.94**	**36.55**	**59.96**	**75.12**	**100.35**	**44.75**	**114.23**	**106.28**	**14.88**
AVERAGE	**9.36**	**178.75**	**15.65**	**0.00**	**37.42**	**24.30**	**16.08**	**0.38**	**201.64**	**206.21**	**92.59**	**0.00**	**322.20**	**8.44**	**65.77**	**0.36**	**58.88**	**312.00**	**250.91**	**1.19**	**0.70**	**0.36**	**25.37**	**12.22**	**52.99**	**62.39**	**49.45**	**42.22**	**25.30**	**52.55**	**9.90**

SUMMARY OF REALTIME STACK EMISSION MONITORING DATA																														
MONTH	PB 4 _ CO	PB 5 _ CO	PB 6 _ CO	PB 7 _ CO	PB 4 _ PM	PB 5 _ PM	PB 6 _ PM	PB 7 _ PM	PB 4 _ SO2	PB 5 _ SO2	PB 6 _ SO2	PB 7 _ SO2	PB 4 _ NO2	PB 5 _ NO2	PB 6 _ NO2	PB 7 _ NO2	SRP CO_ LK_1	SRP CO_ LK_2	SRP CO_ RB # 3	SRP H2S_ LK_1	SRP H2S_ LK_2	SRP H2S_ RB#3	SRP NOX_ LK_1	SRP NOX_ LK_2	SRP NOX_ RB # 3	SRP PM_ LK 1	SRP PM_ LK 2	SRP PM_ RB # 3	SRP SO2_ LK_1	SRP SO2_ LK_2	SRP SO2_ RB # 3
UOM	(mg/Nm3)																ppm									mg/m3			ppm		
Jun-23																														
1-Jun-23	9.71	184.9	61.24	0	31.72	35.58	11.87	0.38	237.95	207.74	135.6	0	362.39	0	43.68	0	17.5	264.0	114.76	1.265	0.57	0.36	26.25	1.00	54.25	75.12	89.67	41.77	13.65	57.99	10.31
2-Jun-23	9.36	177.44	43.55	0	31	35.75	12.04	0.38	236.62	193.83	181.7	0	360.02	0	68.45	0	14.8	10.0	94.50	1.247	0.01	0.32	33.43	0.42	52.77	75.12	53.09	41.80	13.10	0.18	10.91
3-Jun-23	7.85	333.52	74.36	0	30.37	36.02	12.64	0.38	244.01	219.62	140.96	0	373.03	0	68.08	0	18.9	9.0	197.97	1.250	0.01	0.22	14.12	0.13	52.06	75.12	40.42	41.87	19.15	0.12	12.91
4-Jun-23	9.67	86.46	12.93	0	31.83	35.72	12.87	0.38	236.3	151.11	104.22	0	360.91	0	102.13	0	16.4	14.1	135.03	1.250	0.01	0.32	12.96	0.12	48.45	75.12	40.32	42.79	9.38	0.12	12.83
5-Jun-23	9.69	161.18	52.64	0	32.94	35.87	12.5	0.38	239.34	153.76	251.91	0	364.82	0	111.66	0	15.9	24.1	0.66	1.245	0.01	0.27	18.51	0.11	6.10	75.11	40.86	44.20	28.88	0.11	7.81
6-Jun-23	9.8	128.73	53.88	0	33.33	36.02	12.36	0.38	238.86	160.52	229.73	0	364.53	0	116.98	0	16.7	24.1	1.29	1.248	0.01	0.35	30.06	0.11	6.25	75.11	18.43	41.79	31.15	0.11	7.92
7-Jun-23	9.83	116.25	95.47	0	34.06	36.27	13.33	0.38	244.14	153.18	222.5	0	373.21	0	111.6	0	16.9	24.1	63.46	1.247	0.01	0.39	26.10	0.10	50.48	75.11	34.32	44.34	24.24	0.12	10.36
8-Jun-23	9.33	242.2	105.77	0	34.93	36.82	14.51	0.38	234.37	230.54	217.67	0	360.42	0	53.94	0	18.8	59.1	153.44	1.249	0.29	0.52	40.25	20.01	50.41	75.11	23.88	44.36	18.70	47.27	17.82
9-Jun-23	9.57	180.68	49.94	0	34.9	36.8	22.35	0.38	232.64	266.19	234.75	0	355.35	0	114.89	0	16.8	291.2	404.32	1.261	0.62	0.38	30.04	40.38	50.42	46.52	12.09	46.83	44.69	123.64	28.62
10-Jun-23	9.81	214.28	19.1	0	34.36	36.84	25.22	0.37	228.18	156.75	187.25	0	348.63	0	143.7	0	117.0	56.4	421.59	1.173	0.58	0.34		42.34	49.27	35.62	12.37	66.98	28.57	94.85	23.76
11-Jun-23	11.07	154.54	18.7	0	34.86	36.77	23.36	0.37	236.06	164.36	167.67	0	358.95	0	142.48	0	38.9	104.9	466.82	0.976	0.62	0.30	49.18	32.39	52.45	42.21	8.31	73.19	20.52	97.73	22.17
12-Jun-23	10.79	150	35.03	0	35.32	36.74	18.89	0.37	237.61	166.35	240.35	0	364.78	0	146.41	0	259.2	56.8	426.30	0.835	0.75	0.26		39.48	53.36	42.85	10.18	76.52		101.73	18.28
13-Jun-23	9.27	48.23	48.37	0	34.17	36.91	15.4	0.37	230.18	186.37	320.39	0	356.16	0	88.1	0	173.5	125.9	419.66	0.707	0.77	0.24	121.56	38.66	53.98	41.00	11.48	78.78	68.74	107.38	16.45
14-Jun-23	9.16	127.16	34.98	0	35.67	38.07	14.12	0.37	230.18	208.82	318.62	0	355.98	0	89.96	0	67.1	33.6	422.84	0.626	0.81	0.33	92.65	37.34	52.69	46.94	10.41	75.40	88.78	68.95	14.02
15-Jun-23	10.95	159.23	15.99	0	41.88	37.25	15.24	0.37	234.37	207.02	327.32	0	360.99	0	103.78	0	41.3	25.7	280.65	0.546	0.77	0.37	65.38	40.33	53.85	37.32	8.45	75.48	66.51	74.97	13.72
16-Jun-23	6.4	196.34	46.21	0	40.02	37.5	15.84	0.37	239.68	226.56	339.65	0	368.34	0	95.4	0	26.4	28.4	212.73	0.471	0.75	0.28	66.20	43.49	45.71	31.84	9.99	74.83	91.98	95.39	12.27
17-Jun-23	7.94	141.34	13.06	0	26.98	37.7	15.96	0.38	163.45	212.86	331.01	0	253.5	0	89.92	0	43.5	28.2	268.15	0.529	0.67	0.44	96.15	38.09	53.70	32.43	8.89	75.12	119.30	100.98	12.38
18-Jun-23	1.05	244.09	39.89	0	3.05	37.89	16.07	0.38	4.91	225.36	325.56	0	5.93	0	91.54	0	159.5	118.0	294.97	0.529	0.65	0.40	124.70	29.56	53.17	57.27	10.05	73.02	97.84	122.39	12.77
19-Jun-23	4.61	281.21	11.17	0	3.05	38.14	15.75	0.37	4.9	200.93	315.41	0	5.93	0	86.96	0	251.7	209.4	355.41	0.586	0.64	0.34	101.82	20.65	55.02	35.88	10.54	73.69	66.93	111.33	14.64
20-Jun-23	8.93	297.32	47.48	0	31.13	38.17	16.06	0.37	143.7	173.32	294.88	0	220.3	0	79.26	0	256.2	389.0	363.56	0.414	0.72	0.37	89.52	28.47	56.66	37.15	12.46	73.92	60.54	119.36	12.76
21-Jun-23	9.88	157.27	14.23	0	50.5	38.04	14.91	0.37	237.15	169.36	259.81	0	366.16	0	104.47	0	170.9	153.2	249.86	0.217	0.74	0.46	65.86	19.22	53.19	47.92	6.11	74.49	35.92	108.32	11.60
22-Jun-23	9.5	200.75	13.66	0	49.63	38.05	16.25	0.37	239.45	162.32	187.82	0	368.71	0	142.67	0	208.2	71.5	209.18	0.461	0.77	0.42	162.97	23.14	58.56	46.88	3.90	75.14	55.45	96.52	11.61
23-Jun-23	8.71	159.73	78.3	0	48.97	38.16	13.86	0.37	244.63	193.08	291.73	0	372.63	0	99.14	0	0.4	74.5	217.34	0.046	0.79	0.44	4.34	33.03	54.21	1.69	12.09	76.73	1.78	89.64	10.76
24-Jun-23	10.28	211.19	1.23	0	46.32	38.75	2.14	0.38	239.52	244.3	NA	0	367.79	4.33	NA	0	-2.2	124.4	206.24	-0.013	0.77	0.34	2.22	30.11	52.96	10.56	11.15	76.46	1.03	78.80	11.72
25-Jun-23	9.43	254.93	106.3	0	46.29	39.14	2.14	0.39	244.55	219.84	109.88	0	376.12	17.59	92.62	0	-2.2	95.7	173.26	-0.013	0.77	0.46	2.22	32.95	47.65	0.10	7.03	75.81	1.03	69.51	10.32
26-Jun-23	8.65	426.85	33.93	0.11	46.92	40.03	20.73	1.02	245.97	187.34	305.86	0	377.52	9.33	120.43	0	-2.2	32.8	97.44	-0.013	0.80	0.47	2.22	29.53	52.43	0.10	7.21	74.88	1.03	61.27	9.45
27-Jun-23	8	483.09	12.91	16.09	47.06	39.87	31.68	1.04	245.95	209.74	324.92	0	377.54	1.76	106.19	0	160.5	22.3	75.71	0.095	0.74	0.53	76.32	24.00	55.72	11.92	6.84	77.51		47.82	9.34
28-Jun-23	8.67	464.69	9.87	4.99	48.12	39.83	20.4	0.4	253.22	241.29	333.93	0	388.8	2.5	114.76	0	120.7	37.7	83.33	0.294	0.74	0.51	169.41	22.04	56.42	37.85	6.78	74.45		78.81	9.47
29-Jun-23	9.97	473.13	26.45	0	49.91	39.95	19.04	0.21	251.39	278.28	342.92	0	384.7	2.42	99.14	0	163.1	38.0	137.18	0.225	0.73	0.36	43.43	17.45	58.87	40.96	8.38	67.85	28.72	85.02	10.58
30-Jun-23	11.24	380.05	50.18	0	50.03	39.81	18.12	0.08	263.64	246.53	327.05	0	401.75	3.26	85.8	0	24.6	59.3	196.00	0.029	0.67	0.37	12.17	14.82	58.96	40.64	10.78	63.01	5.12	81.35	11.28
MINIMUM	**1.05**	**48.23**	**1.23**	**0.00**	**3.05**	**35.58**	**2.14**	**0.08**	**4.90**	**151.11**	**104.22**	**0.00**	**5.93**	**0.00**	**43.68**	**0.00**	**-2.20**	**9.00**	**0.66**	**-0.01**	**0.01**	**0.22**	**2.22**	**0.10**	**6.10**	**0.10**	**3.90**	**41.77**	**1.03**	**0.11**	**7.81**
MAXIMUM	**11.24**	**483.09**	**106.30**	**16.09**	**50.50**	**40.03**	**31.68**	**1.04**	**263.64**	**278.28**	**342.92**	**0.00**	**401.75**	**17.59**	**146.41**	**0.00**	**259.20**	**389.00**	**466.82**	**1.27**	**0.81**	**0.53**	**169.41**	**43.49**	**58.96**	**75.12**	**89.67**	**78.78**	**119.30**	**123.64**	**28.62**
AVERAGE	**8.97**	**227.89**	**40.89**	**0.71**	**36.64**	**37.62**	**15.86**	**0.40**	**218.76**	**200.58**	**254.17**	**0.00**	**335.20**	**1.37**	**100.49**	**0.00**	**80.96**	**86.85**	**224.79**	**0.67**	**0.56**	**0.37**	**56.43**	**23.32**	**50.00**	**44.22**	**18.22**	**64.77**	**38.62**	**70.73**	**13.29**
AVERAGE	**8.97**	**227.89**	**40.89**	**0.71**	**36.64**	**37.62**	**15.86**	**0.40**	**218.76**	**200.58**	**254.17**	**0.00**	**335.20**	**1.37**	**100.49**	**0.00**	**80.96**	**86.85**	**224.79**	**0.67**	**0.56**	**0.37**	**56.43**	**23.32**	**50.00**	**44.22**	**18.22**	**64.77**	**38.62**	**70.73**	**13.29**

SUMMARY OF REALTIME STACK EMISSION MONITORING DATA																															
MONTH	PB 4 _ CO	PB 5 _ CO	PB 6 _ CO	PB 7 _ CO	PB 4 _ PM	PB 5 _ PM	PB 6 _ PM	PB 7 _ PM	PB 4 _ SO2	PB 5 _ SO2	PB 6 _ SO2	PB 7 _ SO2	PB 4 _ NO2	PB 5 _ NO2	PB 6 _ NO2	PB 7 _ NO2	SRP CO_ LK_1	SRP CO_ LK_2	SRP CO_ RB # 3	SRP H2S_ LK_1	SRP H2S_ LK_2	SRP H2S_ RB#3	SRP NOX_ LK_1	SRP NOX_ LK_2	SRP NOX_ RB # 3	SRP PM_ LK 1	SRP PM_ LK 2	SRP PM_ RB # 3	SRP SO2_ LK_1	SRP SO2_ LK_2	SRP SO2_ RB # 3
UOM	(mg/Nm3)																ppm									mg/m3			ppm		
Jul-23																															
1-Jul-23	9.99	308.29	23.07	0	49.25	39.96	19.61	0.07	273.12	293.53	249.24	0	413.17	0.68	134.83	0	55.5	80.3	204.69	0.076	0.69	0.31	16.88	12.13	57.43	45.67	8.29	63.13	10.20	70.63	11.14
2-Jul-23	10.09	291.36	5.02	0	50.17	40.15	19.1	0.22	268.89	279.71	206.53	0	405.42	1.31	180.22	0	161.6	101.3	146.04	0.225	0.77	0.42	43.72	26.38	56.53	64.44	8.94	60.88	25.84	55.26	10.71
3-Jul-23	9.47	203.82	10.3	14.92	48.47	40.58	18.73	3.94	252.15	221.05	215.51	41.12	380.52	11.63	157.26	20.4	227.4	249.7	104.38	0.290	0.73	0.43	57.65	14.29	57.42	56.31	5.77	58.19	29.20	83.75	10.59
4-Jul-23	9.97	179.29	9.16	0.21	46.88	41.17	16.87	0.82	236.82	217.7	227.32	133.52	360.06	14.35	143.31	40.05	352.7	76.4	27.25	0.446	0.88	0.50	107.01	30.81	53.87	51.20	7.31	53.06	80.56	42.97	9.58
5-Jul-23	11.02	239.57	7.33	0.15	48.76	42.19	15.17	0.58	235.18	205.19	245.96	241.62	357.84	3.62	127.96	47.16	246.7	39.8	56.17	0.540	0.91	0.48	123.90	24.51	52.48	42.36	6.24	50.96	92.57	42.67	9.83
6-Jul-23	10.6	247.06	8.99	0	50.71	42.43	15.75	0.57	230.75	224.7	211.24	193.82	353.68	11.86	153.26	44.25	81.9	85.6	127.71	0.660	0.85	0.34	160.29	19.62	53.28	66.73	8.95	51.19	0	48.49	11.36
7-Jul-23	10.68	138.74	38.06	0.07	51.98	42.7	16.9	2.02	236.7	175.54	262.17	241.36	363.87	14.88	119.95	41.69	475.2	135.6	79.60	0.734	0.85	0.50	103.95	25.07	53.59	74.22	9.49	53.49	51.32	55.09	10.27
8-Jul-23	11.19	205.72	9.03	1.61	28.91	54.74	19.53	4.25	239.44	219.28	251.31	283.55	368.45	5.25	144.64	42.26	62.7	29.2	0.74	0.570	0.83	0.43	114.06	33.73	58.47	74.99	18.00	52.02	69.32	29.73	10.12
9-Jul-23	11.3	150.95	13.64	3.74	11.36	67.15	19.73	7.92	246.51	191.97	264.11	283.04	380.16	4.08	135.07	41.02	25.3	42.9	104.33	0.632	0.75	0.43	121.28	33.09	59.02	75.12	15.45	49.46	0	47.59	12.27
10-Jul-23	11.56	132.19	18.43	47.22	4.61	67.32	19.69	8.08	250.03	148.22	252.96	309.34	381.12	0.64	131.91	36.24	78.2	16.9	235.30	0.696	0.70	0.38	132.29	41.32	61.25	74.66	21.76	48.74	0	51.80	12.41
11-Jul-23	10.02	206.02	22.63	86.84	8.66	67.39	15.36	7.52	248.2	168.82	297.19	199.38	381.82	5.09	89.84	29.99	246.3	18.7	214.71	0.565	0.72	0.31	123.55	17.45	60.24	73.63	17.85	48.36	67.35	54.16	12.27
12-Jul-23	9.92	331.94	NA	131.07	5.29	68.27	6.86	7.4	259.51	223.05	NA	136.75	396.89	6	NA	25.76	246.5	13.5	150.93	0.641	0.02	0.34	117.03	0.43	62.73	74.67	34.19	48.00	134.14	0.63	10.80
13-Jul-23	9.42	387.91	NA	65.59	5.76	70.01	4.75	7.49	262.25	226.17	NA	105.29	397.87	3.28	NA	24.41	233.6	13.8	42.26	0.684	0.01	0.52	123.25	0.11	60.20	74.32	0.16	46.92	101.22	0.14	10.10
14-Jul-23	8.9	530.57	NA	64.93	6.38	70.44	2.05	7.88	266.11	238.71	NA	138.46	403.32	3.49	NA	28.43	339.1	10.3	151.07	0.642	0.01	0.31	131.04	0.11	55.40	73.99	1.22	46.80	0	0.14	11.44
15-Jul-23	8.27	475.75	4.6	76.52	6.88	70.42	2.05	7.47	277.16	236.28	NA	120.41	417.36	0.65	56.9	26.7	314.9	72.2	116.12	0.680	0.13	0.36	109.05	1.24	60.99	75.12	14.64	46.69	0	9.99	11.72
16-Jul-23	7.35	411.82	0.42	110.53	7.07	70.22	2.05	7.95	277.23	211.44	7.52	143.94	417.3	0.81	9.91	27.98	158.7	35.4	133.78	0.713	0.86	0.38	0	32.33	55.67	75.11	25.83	46.61	48.19	62.00	12.06
17-Jul-23	8.97	369.51	1.12	72.05	7.21	70.32	2.05	8.72	276.16	203.35	0.76	176.68	418.31	4.82	NA	32.74	35.2	49.8	103.88	0.649	0.81	0.32	0	43.45	57.03	59.20	20.55	46.50	0	51.19	11.21
18-Jul-23	7.97	486.64	1.35	50.66	7.25	71.41	2.05	9.13	272.26	200.38	0.05	135.18	411.53	5.17	NA	32.77	270.8	31.9	127.83	0.618	0.80	0.13	0	57.29	62.38	49.35	20.44	46.68	0	56.77	11.39
19-Jul-23	8.57	300.65	1.08	90.03	7.2	70.87	2.05	8.79	264.01	163.83	NA	127.71	399.33	8.76	NA	29.87	108.4	55.3	35.75	0.494	0.80	0.12	187.69	44.23	56.56	37.35	20.03	46.34	0	58.61	10.67
20-Jul-23	9.33	528.67	0.41	15.55	8.78	72.26	2.04	8.25	266.98	239.19	NA	191.5	403.71	5.66	NA	26.64	21.4	25.5	65.73	0.559	0.77	0.28	160.60	40.23	57.54	38.92	21.77	46.39	0	23.13	11.01
21-Jul-23	9.4	275.36	0.45	115.93	8.93	72.24	2.05	7.94	269.31	267.59	NA	238.82	406.58	8.07	NA	23.81	135.1	17.8	39.73	0.663	0.52	0.29	115.71	18.98	54.81	38.32	31.66	46.47	0	7.64	10.58
22-Jul-23	9.06	200.32	0.34	151.84	10.09	72.12	2.04	7.85	264.18	287.08	NA	185.24	399.14	2.56	NA	22.43	309.0	12.8	31.37	0.611	0.01	0.24	200.66	0.11	55.08	36.92	57.65	46.61	50.19	0.15	10.63
23-Jul-23	7.17	221.42	0.4	294.21	9.36	71.99	2.04	7.33	262.75	364.89	NA	253.09	396.72	0.96	NA	20.53	1253.8	12.8	32.12	0.761	0.01	0.39	0	0.11	54.80	39.98	57.23	46.51	0	0.14	10.74
24-Jul-23	5.37	467.91	0.16	213.72	11.32	74.93	2.04	7.5	246.65	338.76	NA	304.68	377.33	0.56	NA	19.75	598.6	12.3	7.98	0.712	0.01	0.40	0	0.11	53.93	42.28	21.25	45.95	0	0.14	10.27
25-Jul-23	NA	271.6	0.16	249.58	6.34	72.65	2.05	7.67	95.79	256.81	NA	268.78	354.54	0.36	NA	19.07	925.5	11.3	37.78	0.853	0.01	0.30	0	0.11	55.04	48.72	14.50	46.46	0	0.13	10.52
26-Jul-23	NA	303.61	0.22	193.83	1.4	72.4	2.05	8.18	1.41	209.67	NA	321.16	NA	0.09	NA	17.77	295.8	10.4	34.46	0.873	0.01	0.36	0	0.11	54.72	53.09	4.48	46.25	0	0.13	10.60
27-Jul-23	NA	197.09	0.13	187.99	1.4	72.6	2.05	8.41	1.41	221.3	NA	276.56	NA	0.75	NA	17.68	51.1	275.6	43.66	0.911	0.42	0.27	0	11.26	55.72	50.00	26.38	46.37	5.34	39.52	11.35
28-Jul-23	1.35	329.99	0.2	379.43	1.4	73.78	2.05	7.94	1.41	280.51	NA	279.94	NA	0.21	NA	15.73	158.1	434.1	32.08	0.666	0.83	0.36	93.56	23.36	53.37	36.35	19.39	46.42	68.82	50.24	11.10
29-Jul-23	8.99	423.65	0.27	265.97	14.99	74.18	2.05	8.05	161.51	232.57	NA	319.27	356.81	0	NA	15.91	254.9	149.0	50.17	0.589	0.88	0.37	139.97	29.00	53.40	38.34	27.85	46.81	0	63.01	11.72
30-Jul-23	8.64	392.18	0.32	173.15	25.3	74.63	2.05	8.74	289.23	234.38	NA	263.45	254.6	0	NA	19.5	233.8	82.9	24.11	1.063	0.85	0.49	123.35	37.07	50.09	40.76	23.25	47.41	0	56.56	11.32
31-Jul-23	9.34	331.1	0.28	360.15	25.36	72.41	2.05	8.61	295.2	308.11	NA	279.02	268.49	0	NA	10.56	129.6	238.0	26.65	0.540	0.84	0.32	121.24	43.85	46.39	32.87	24.89	46.94	0	92.31	11.57
MINIMUM	**1.35**	**132.19**	**0.13**	**0.00**	**1.40**	**39.96**	**2.04**	**0.07**	**1.41**	**148.22**	**0.05**	**0.00**	**254.60**	**0.00**	**9.91**	**0.00**	**21.4**	**10.30**	**0.74**	**0.08**	**0.01**	**0.12**	**0.00**	**0.11**	**46.39**	**32.87**	**0.16**	**45.95**	**0.00**	**0.13**	**9.58**
MAXIMUM	**11.56**	**530.57**	**38.06**	**379.43**	**51.98**	**74.93**	**19.73**	**9.13**	**295.20**	**364.89**	**297.19**	**321.16**	**418.31**	**14.88**	**180.22**	**47.16**	**1253.8**	**434.10**	**235.3**	**1.06**	**0.91**	**0.520**	**200.66**	**57.29**	**62.73**	**75.12**	**57.65**	**63.13**	**134.14**	**92.31**	**12.41**
AVERAGE	**9.07**	**307.76**	**6.34**	**110.24**	**18.63**	**64.00**	**7.90**	**6.36**	**226.72**	**235.15**	**192.28**	**199.76**	**379.50**	**4.05**	**121.93**	**25.84**	**260.9**	**78.75**	**83.50**	**0.62**	**0.56**	**0.36**	**87.99**	**21.35**	**56.11**	**55.32**	**19.21**	**49.12**	**26.91**	**37.25**	**11.01**

SUMMARY OF REALTIME STACK EMISSION MONITORING DATA																															
MONTH	PB 4 _ CO	PB 5 _ CO	PB 6 _ CO	PB 7 _ CO	PB 4 _ PM	PB 5 _ PM	PB 6 _ PM	PB 7 _ PM	PB 4 _ SO2	PB 5 _ SO2	PB 6 _ SO2	PB 7 _ SO2	PB 4 _ NO2	PB 5 _ NO2	PB 6 _ NO2	PB 7 _ NO2	SRP CO_ LK_1	SRP CO_ LK_2	SRP CO_ RB # 3	SRP H2S_ LK_1	SRP H2S_ LK_2	SRP H2S_ RB#3	SRP NOX_ LK_1	SRP NOX_ LK_2	SRP NOX_ RB # 3	SRP PM_ LK 1	SRP PM_ LK 2	SRP PM_ RB # 3	SRP SO2_ LK_1	SRP SO2_ LK_2	SRP SO2_ RB # 3
UOM	(mg/Nm3)																ppm									mg/m3			ppm		
Aug-23																															
1-Aug-23	8.9	89.4	0.24	40.53	29.42	66.35	2.05	7.91	283.25	314.88	NA	352.14	253.49	0	NA	7.28	189.4	103.9	118.66	0.636	0.85	0.11	114.52	31.68	43.78	35.86	27.00	47.18	120.21	52.30	13.09
2-Aug-23	9.33	141.75	4.15	213.72	32.82	67.44	5.56	7.98	283.21	305.07	118.63	330.99	256.35	0	43.76	10.23	97.4	58.2	70.74	0.450	0.80	0.36	151.30	58.67	45.24	37.82	26.11	47.16	142.95	47.94	12.23
3-Aug-23	10.52	156.88	11.95	242.01	30.56	67.88	16.91	7.93	282.36	327.56	204.52	331.59	258.82	0	50.1	11.26	305.6	194.0	18.33	0.461	0.71	0.48	135.65	79.57	44.24	32.75	35.38	47.25	0	77.64	11.61
4-Aug-23	10.04	121.76	8.77	124.97	54.97	67.73	15.6	8.19	288.94	286.59	302.13	328.67	263.11	0	46.53	13.49	316.2	153.2	0.56	0.459	0.78	0.29	174.25	27.59	7.03	38.62	24.82	47.28	56.35	64.57	7.16
5-Aug-23	10.22	74.52	12.57	161.19	34.01	68.02	15.43	8.17	293.55	257.05	298.31	323.42	264.92	0	49.33	15.67	109.6	74.3	56.45	0.441	0.73	0.27	173.47	28.70	28.37	37.93	17.99	47.38	0	45.46	9.93
6-Aug-23	10.75	157.22	21.56	89.43	10.36	68.46	15.71	8.31	301.81	320.66	277.03	328.1	274.15	0	50.9	15.81	314.8	178.4	73.34	0.467	0.56	0.33	152.05	11.40	52.28	29.68	14.80	47.50	0	54.04	13.02
7-Aug-23	10.3	148.45	11.69	130.24	23.09	68.78	15.28	8.11	305.63	294.94	261.15	328.69	280.04	0	49.27	14.97	233.2	135.1	138.06	0.551	0.68	0.19	132.39	11.35	47.30	34.78	16.50	47.53	0	65.43	14.00
8-Aug-23	10.92	231.83	9.18	115.53	18.87	72.45	15.65	8.01	300.55	247.41	248.73	265.02	275.66	0	52.05	15.4	473.2	142.4	148.53	0.547	0.67	0.19	159.51	3.50	50.58	47.03	14.03	47.61	0	62.16	14.53
9-Aug-23	10.66	327.63	11.59	50.54	17.4	71.53	15.88	8.35	296.55	221.73	278.85	335.42	269.1	0	37.95	11.1	155.1	201.7	162.05	0.535	0.58	0.12	173.59	6.28	44.98	29.78	14.15	47.58	0	73.92	15.03
10-Aug-23	10.95	117.57	8.41	135.28	18.52	72.91	16.75	9.09	271.69	269.1	105.38	301.45	249.82	0.34	28.4	11.85	327.3	229.5	139.14	0.275	0.49	0.07	129.05	1.50	47.42	28.58	45.09	47.38	50.76	30.02	15.05
11-Aug-23	10	132.44	11.74	95.58	18.38	69.46	16.34	9.24	255.88	187.28	120.52	311.81	240.51	1.37	NA	10.29	281.3	177.0	122.27	0.332	0.67	0.04	178.34	2.07	46.66	35.28	29.89	47.22	60.76	18.61	13.31
12-Aug-23	10.3	170.1	12.28	399.64	31.77	71.29	16.31	8.47	248.58	183.03	224.43	282.89	235.03	4.47	9.49	7.52	99.1	188.3	119.11	0.407	0.65	0.09	207.09	1.22	53.42	33.10	27.62	46.72	62.78	11.79	12.83
13-Aug-23	10.93	142.74	24.12	43.78	37.11	70.01	16.15	8.33	270.07	101.41	158.14	109.74	253.1	1.82	39.57	13.77	8.3	624.3	96.11	0.140	0.75	0.09	17.13	1.08	48.87	43.74	34.54	47.15	20.09	11.68	13.71
14-Aug-23	8.81	250.79	55.95	96.84	20.81	72.12	16.68	8.24	118.22	115.31	236.59	151.17	145.57	0.2	5.84	16.26	-2.2	607.8	193.39	-0.013	0.70	0.01	2.22	1.02	49.52	22.92	41.62	48.01	1.03	19.61	17.84
15-Aug-23	NA	208.81	15.91	209.9	2.1	71.76	16.54	8.41	7.77	116.3	132.38	175.48	1.3	0.7	5.41	8.35	25.4	586.8	165.23	0.086	0.68	0.05	51.27	1.00	50.15	5.17	40.95	50.99	25.54	24.28	16.06
16-Aug-23	NA	199.71	19.59	150.01	2.1	72.85	17.08	8.31	7.78	119.58	105.54	118.58	1.3	0	7.16	8.1	522.9	330.9	146.74	0.499	0.57	0.06	157.68	1.00	44.38	28.39	39.61	52.77	90.23	22.76	14.13
17-Aug-23	8.79	106.12	23.59	96.53	2.1	73.51	17.18	8.82	7.79	184.63	249.58	275.05	1.29	2.08	7.72	15.92	518.1	312.0	124.49	0.461	0.53	0.03	111.06	1.17	48.11	19.32	28.55	52.13	0	23.19	13.56
18-Aug-23	NA	127.43	30.53	33.15	2.1	74.48	16.09	8.31	7.76	269.73	193.45	292.24	1.3	28.23	7.14	21.89	120.0	113.6	121.14	0.410	0.74	0.01	166.80	1.00	44.91	18.32	31.78	50.98	77.92	24.87	13.70
19-Aug-23	6.9	113.66	13.77	227.31	2.1	75.48	15.47	8.27	7.75	297.57	306.57	279.44	1.3	60.23	4.33	8.26	240.0	86.5	7.86	0.424	0.85	0.07	192.01	1.03	52.15	28.89	37.63	50.93	67.29	17.74	11.86
20-Aug-23	NA	96.41	19.52	216.33	2.1	74.87	16.48	8.24	7.76	272.13	327.5	353.89	1.3	45.76	5.52	1.24	370.6	526.9	134.25	0.510	0.81	0.08	160.02	1.14	41.09	31.34	33.93	50.96	0	44.44	17.46
21-Aug-23	7.3	34.99	15.21	268.9	2.1	74.83	17.53	7.98	7.76	248.62	280.26	228.48	1.3	45.66	1.75	3.87	15.8	259.9	63.89	0.092	0.82	0.26	26.22	1.00	49.27	32.29	35.16	51.00	5.42	21.63	13.09
22-Aug-23	4.67	73.61	12	199.83	2.1	77.06	16.76	7.81	7.78	246	315.21	288.05	1.29	49.37	3.7	4.43	8.7	357.0	131.83	0.023	0.68	0.17	5.75	1.71	50.48	31.04	40.21	50.74	3.96	27.59	13.93
23-Aug-23	NA	9.07	28.71	134.45	2.1	77.69	15.74	8.11	7.82	78.54	292.91	323.75	1.28	11.8	3.57	5.06	235.9	589.4	39.98	0.399	0.61	0.38	29.48	1.00	50.65	23.22	59.00	50.42	22.87	14.47	12.34
24-Aug-23	NA	16.8	18.14	118.81	2.11	77.86	16.36	7.51	7.83	96.53	103.54	314.72	1.28	10.18	4.58	44.16	123.9	670.1	75.44	0.321	0.66	0.36	39.64	1.98	47.16	14.42	57.16	48.71	20.67	5.51	12.78
25-Aug-23	8.8	15.64	16.88	138.92	8.69	77.89	16.21	7.26	86.51	99.86	257.96	271.82	74.05	28.08	20.01	53.41	-2.2	411.1	0.98	-0.013	0.66	0.48	2.22	1.43	14.56	16.35	68.74	47.35	1.03	8.09	7.77
26-Aug-23	9.81	18.12	13.52	86.96	14.01	78.49	16.55	7.81	310.65	131.55	195.7	318.9	281.73	41.95	104.08	54.56	-2.2	176.7	0.34	-0.013	0.74	0.01	2.22	1.16	0.48	10.32	51.29	24.69	1.03	7.17	6.17
27-Aug-23	9.98	42.09	16.07	305.39	3.35	78.26	17.31	7.28	310.09	212.95	229.67	291.39	293.97	83.66	90.62	65.45	-2.2	344.8	0.34	-0.012	0.66	0.01	2.22	1.08	0.51	9.13	51.61	3.57	1.03	8.09	6.17
28-Aug-23	10.27	38.47	37.46	86.76	3.44	78.91	17.78	7.39	303.24	214.68	168.58	257.95	284.08	85.66	141.16	71.86	-2.2	101.5	0.35	-0.012	0.79	0.01	2.22	1.04	0.54	7.99	41.27	3.57	1.03	8.03	6.17
29-Aug-23	10.52	42.66	30.92	5.4	6.95	78.53	17.33	7.74	303.43	204.61	241.42	293.5	283.13	92.08	111.32	74.94	-2.2	45.2	0.33	-0.012	0.70	0.01	2.22	1.23	0.51	0.10	32.10	3.55	1.03	5.41	6.17
30-Aug-23	10.79	56.44	22.71	4.26	8.96	77.99	17.81	8.23	284.17	283.7	412.87	348.43	261.15	110.79	26.46	34.69	-2.2	359.3	0.33	-0.013	0.75	0.01	2.22	2.79	0.49	4.17	58.77	3.49	1.03	7.22	6.17
MINIMUM	10.13	56.61	34.57	14.71	9.39	63.42	17.03	8.61	251.66	357.33	347.61	294.54	226.05	109.79	53.07	30.76	-2.2	103.3	0.32	-0.013	0.72	0.01	2.22	1.13	0.48	9.91	47.68	3.49	1.03	10.82	6.17
MAXIMUM	**10.95**	**327.63**	**55.95**	**399.64**	**54.97**	**78.91**	**17.81**	**9.24**	**310.65**	**327.56**	**412.87**	**353.89**	**293.97**	**110.79**	**141.16**	**74.94**	**522.90**	**670.10**	**193.39**	**0.64**	**0.85**	**0.48**	**207.09**	**79.57**	**53.42**	**47.03**	**68.74**	**52.77**	**142.95**	**77.64**	**17.84**
AVERAGE	**9.60**	**115.44**	**17.96**	**140.74**	**14.82**	**73.16**	**15.62**	**8.13**	**182.54**	**216.97**	**229.23**	**283.76**	**167.02**	**23.48**	**35.99**	**21.70**	**169.21**	**277.99**	**82.34**	**0.29**	**0.70**	**0.15**	**95.13**	**9.55**	**36.84**	**25.61**	**35.91**	**41.96**	**27.83**	**30.19**	**12.03**

SUMMARY OF REALTIME STACK EMISSION MONITORING DATA																															
MONTH	PB 4 _ CO	PB 5 _ CO	PB 6 _ CO	PB 7 _ CO	PB 4 _ PM	PB 5 _ PM	PB 6 _ PM	PB 7 _ PM	PB 4 _ SO2	PB 5 _ SO2	PB 6 _ SO2	PB 7 _ SO2	PB 4 _ NO2	PB 5 _ NO2	PB 6 _ NO2	PB 7 _ NO2	SRP CO_ LK_1	SRP CO_ LK_2	SRP CO_ RB # 3	SRP H2S_ LK_1	SRP H2S_ LK_2	SRP H2S_ RB#3	SRP NOX_ LK_1	SRP NOX_ LK_2	SRP NOX_ RB # 3	SRP PM_ LK 1	SRP PM_ LK 2	SRP PM_ RB # 3	SRP SO2_ LK_1	SRP SO2_ LK_2	SRP SO2_ RB # 3
UOM	(mg/Nm3)																ppm									mg/m3			ppm		
Sep-23																															
1-Sep-23	10.18	51.91	40.18	34.02	9.13	35.04	17.23	8.63	216.95	336.77	349.25	302.85	190.21	99.64	41.53	30.57	-2.2	122.4	0.32	-0.013	0.64	0.01	2.22	1.32	0.48	5.74	46.97	3.49	1.03	7.00	6.17
2-Sep-23	10.3	27.22	17.7	27.72	9.34	35.28	18.31	8.3	219.47	245.82	268.52	238.78	190.39	67.08	58.7	35.73	-2.2	47.1	0.32	-0.013	0.01	0.01	2.22	0.12	0.48	5.99	84.04	3.49	1.03	0.16	6.17
3-Sep-23	10.19	39.33	10.88	37.77	10.09	46.11	19.04	8.47	230.03	308.13	108.68	217.61	198.65	84.82	10.65	32.58	-2.2	47.0	0.32	-0.013	0.01	0.01	2.22	0.09	0.48	6.61	51.94	3.49	1.03	0.13	6.17
4-Sep-23	10.09	64.23	32.96	78.46	9.74	55.1	18.56	8.22	231.94	310.24	216.16	301.29	198.73	79.12	4.62	27.61	-2.2	67.5	0.34	-0.013	0.01	0.01	2.22	0.10	0.50	7.37	18.94	2.90	1.03	0.14	6.17
5-Sep-23	10.37	40.62	36.89	53.6	9.75	54.09	18.56	7.96	230.58	262.71	436.31	307.01	195.52	78.31	3.5	25.62	-2.4	68.6	0.37	-0.010	0.01	0.01	2.25	0.11	0.55	5.05	0.29	4.03	1.03	0.17	6.17
6-Sep-23	11	85.71	36.24	22.29	9.99	54.06	18.01	8.23	229.08	328.9	652.18	301.61	206.34	75.83	NA	31.16	-2.2	82.2	0.36	-0.012	0.26	0.01	2.22	1.17	0.51	6.15	50.98	4.39	1.03	0.65	6.17
7-Sep-23	11.28	50.14	5.96	22.89	10.58	52.36	17.74	7.9	232.96	267.07	194.09	323.45	214.04	73.44	NA	25.72	-2.2	112.7	0.36	-0.013	0.48	0.01	2.22	16.12	0.49	2.39	50.25	4.32	1.03	0.51	6.17
8-Sep-23	11.13	80.23	16.93	80.8	10.3	51.39	17.89	7.74	231.67	242.46	316.54	278.38	212.78	73.1	33.39	25.22	-2.2	88.4	0.36	-0.013	0.47	0.01	2.22	1.45	0.49	0.10	35.97	4.34	1.03	4.59	6.17
9-Sep-23	11.5	116.63	24.78	37.96	10.48	52.58	18.41	7.81	245.85	147.42	267.48	200.34	221.32	68.31	NA	24.26	-2.2	130.5	0.36	-0.012	0.67	0.01	2.22	4.61	0.50	0.10	54.58	4.40	1.03	3.13	6.17
10-Sep-23	11.03	35.64	19.5	9.66	9.79	52.05	18.5	7.66	251.13	125.08	219.17	189.45	226.23	80.73	NA	27.38	-2.2	237.9	0.36	-0.012	0.64	0.01	2.22	10.12	0.51	0.10	55.57	4.46	1.03	5.55	6.17
11-Sep-23	10.27	8.2	17.39	48.42	10.92	45.08	18.2	7.34	238.42	20.05	213.13	332.73	215.63	38.9	NA	19.85	-2.2	251.7	0.36	-0.012	0.64	0.01	2.22	7.97	0.53	0.10	46.76	4.47	1.03	13.85	6.17
12-Sep-23	10.29	1.38	21.01	28.63	20.19	26.54	19.11	7.66	251.05	2.17	290.48	282.11	227.65	36.37	NA	27.3	-2.2	163.2	0.36	-0.012	0.37	0.01	2.22	4.88	0.54	0.10	44.89	4.53	1.03	6.03	6.17
13-Sep-23	NA	1.61	17.14	31.23	11.82	2.11	10.38	7.92	93.03	4.13	249.46	292.56	230.5	37.83	1.84	22.68	-2.5	124.5	0.37	-0.009	0.02	0.01	2.28	0.08	0.61	0.10	12.42	4.63	1.02	0.20	6.18
14-Sep-23	NA	0.93	NA	2.14	6.08	0.55	5.96	9.31	1.69	13.64	NA	72.66	NA	19.38	0.44	4.43	-2.4	150.8	0.37	-0.009	0.02	0.01	2.26	0.09	0.59	0.10	0.22	4.90	1.03	0.21	6.18
15-Sep-23	NA	11.15	NA	6.4	6.1	0.55	6.34	8.46	1.97	23.56	NA	10.07	NA	0.08	1.52	0.64	-2.4	511.5	0.38	-0.007	0.02	0.01	2.27	0.13	0.66	0.10	0.26	11.30	1.02	0.26	6.18
16-Sep-23	NA	59.18	NA	64.11	6.09	41.64	4.81	7.95	1.58	268.61	NA	373.06	NA	86.84	13.81	21.28	-2.0	110.5	0.32	-0.013	0.01	0.01	2.22	0.11	0.49	0.10	0.14	11.01	1.03	0.09	6.18
17-Sep-23	NA	87.51	16.31	322.11	6.08	47.73	16.24	7.39	1.46	322.67	271.25	285.05	NA	100.64	12.13	11.81	-2.2	97.9	0.36	-0.013	0.01	0.01	2.22	0.08	0.48	0.10	0.37	12.22	1.03	0.10	6.19
18-Sep-23	NA	59.07	3.6	41.48	6.08	47.7	23.69	7.15	1.43	291.47	102.85	331.23	NA	97.43	46.53	12.57	-2.2	99.6	0.36	-0.013	0.17	0.01	2.22	0.35	0.48	0.10	20.55	12.76	1.03	0.34	6.19
19-Sep-23	NA	14.82	14.49	49.85	6.08	49.44	23.02	7.24	1.44	233.7	272.46	259.59	NA	80.72	46.82	14.48	-2.2	114.1	0.35	-0.013	0.82	0.01	2.22	8.44	0.50	0.10	54.90	11.54	1.03	5.04	6.18
20-Sep-23	NA	39.6	15.84	365.68	6.08	49.21	24.1	7.39	1.44	315.69	213.93	339.22	NA	101.84	16.16	10.39	-2.2	200.9	0.35	-0.013	0.75	0.01	2.22	20.30	0.50	0.10	58.25	10.31	1.03	11.14	6.18
21-Sep-23	NA	31.15	16.17	487.26	6.08	49.11	24.8	7.65	1.46	325.78	231.1	330.82	NA	105.6	1.04	10.81	-2.2	212.5	0.35	-0.013	0.75	0.01	2.22	34.38	0.51	0.10	54.33	9.49	1.03	8.43	6.18
22-Sep-23	NA	30.98	5.67	328.75	6.08	53.13	22.66	8.6	1.44	333	83.56	306.79	NA	119.87	84.67	10.85	-2.2	243.2	0.35	-0.013	0.67	0.01	2.22	33.56	0.50	4.47	71.61	8.94	1.03	4.50	6.18
23-Sep-23	NA	61.37	3.19	1022.1	6.08	51.53	23.57	13.2	1.48	312.99	24.03	319.97	NA	110.59	85.99	9.12	-2.2	556.9	0.35	-0.013	0.46	0.01	2.22	15.68	0.50	9.55	81.40	8.08	1.03	4.65	6.19
24-Sep-23	NA	21.41	4.31	713.71	6.09	28.68	25.89	11.7	1.5	335.83	56.82	314.37	NA	85.48	86.67	10.25	-2.2	77.7	0.35	-0.013	0.03	0.01	2.22	3.25	0.50	8.72	77.16	7.94	1.03	0.21	6.19
25-Sep-23	NA	16.83	12.25	328.56	6.09	28.04	25.9	11.64	1.49	278.1	91.6	456.16	NA	86.1	87.52	11.3	-2.2	64.0	0.35	-0.013	0.01	0.01	2.22	0.09	0.49	8.35	26.88	7.75	1.03	0.14	6.18
26-Sep-23	NA	17.76	12.17	359.43	6.09	27.2	24.93	11.83	1.45	290.49	202.27	443.66	NA	106.47	69.86	11.84	-2.2	63.0	0.35	-0.013	0.01	0.01	2.22	0.09	0.48	6.19	0.16	7.58	1.03	0.12	6.18
27-Sep-23	NA	13.99	13.33	362.56	6.08	27.4	25.67	11.41	1.48	236.84	274.49	440.62	NA	102.09	70.29	13.19	-2.2	62.8	0.35	-0.013	0.01	0.01	2.22	0.10	0.48	6.78	0.16	7.31	1.03	0.12	6.19
28-Sep-23	NA	24.5	13.88	24.56	6.09	27.09	25.79	10.68	1.48	216.97	113.58	344.42	NA	91.68	94.56	14.6	-2.2	61.8	0.35	-0.013	0.01	0.01	2.22	0.09	0.49	7.80	0.16	7.15	1.03	0.13	6.19
29-Sep-23	10.11	24.41	6.78	106.21	9.42	30.21	25.42	10.49	157.05	271.85	103.72	345.95	272.07	99.23	116.41	15.84	-2.2	61.7	0.35	-0.013	0.01	0.01	2.22	0.08	0.51	7.27	2.46	7.00	1.03	0.13	6.19
30-Sep-23	10.5	71.91	6.14	41.89	11.4	31.39	24.72	10.57	332	244.62	220	409.19	289.43	97.37	98.81	16.51	-2.2	139.0	0.35	-0.012	0.35	0.01	2.22	5.15	0.54	6.42	46.14	6.75	1.03	4.11	6.19
MINIMUM	**10.09**	**0.93**	**3.19**	**2.14**	**6.08**	**0.55**	**4.81**	**7.15**	**1.43**	**2.17**	**24.03**	**10.07**	**190.21**	**0.08**	**0.44**	**0.64**	**-2.50**	**47.00**	**0.32**	**-0.01**	**0.01**	**0.01**	**2.22**	**0.08**	**0.48**	**0.10**	**0.14**	**2.90**	**1.02**	**0.09**	**6.17**
MAXIMUM	**11.50**	**116.63**	**40.18**	**1022.10**	**20.19**	**55.10**	**25.90**	**13.20**	**332.00**	**336.77**	**652.18**	**456.16**	**289.43**	**119.87**	**116.41**	**35.73**	**-2.00**	**556.90**	**0.38**	**-0.01**	**0.82**	**0.01**	**2.28**	**34.38**	**0.66**	**9.55**	**84.04**	**12.76**	**1.03**	**13.85**	**6.19**
AVERAGE	**10.59**	**39.65**	**16.36**	**171.34**	**8.47**	**38.41**	**19.45**	**8.88**	**113.80**	**230.56**	**223.82**	**298.37**	**219.30**	**79.50**	**45.31**	**18.52**	**-2.22**	**145.72**	**0.35**	**-0.01**	**0.28**	**0.01**	**2.23**	**5.67**	**0.51**	**3.54**	**34.96**	**6.83**	**1.03**	**2.73**	**6.18**

ANNEXURE III

TNPCB - WATER ANALYSIS REPORT

Report No. DEL/DGL/355

Tamil Nadu Pollution Control Board

DISTRICT ENVIRONMENTAL LABORATORY, DINDIGUL-624 004.

REPORT OF ANALYSIS

1. Name and Address of the Sender : The District Environmental Engineer, Tamil Nadu Pollution Control Board, Karur.
2. Date and time of Collection : 23.08.2023 at 12.15 PM to 12.40 PM.
3. Date and time of Receipt at Laboratory : 23.08.2023 at 04.45 PM.
4. Condition of Seals, Fastening and Container : Sealed and Fastened Condition in Polythene Carbuoy of 2.5 Lit x 6 Nos.
5. Nature and Number of Samples : Five Nos. of Trade Effluent Samples & One No. of Sewage Sample.

DEE Code No.	Lab Code No.	Point of Collection	T/UT/PT/NM
128/AEE/KAR	883	Low BOD Stream	Untreated
129/AEE/KAR	884	Inlet of ASL Combined Effluent (Low & High BOD)	Partially Treated
130/AEE/KAR	886	Secondary Clarifier Outlet of ETP	Treated
131/AEE/KAR	886	Seepage Canal	------
132/AEE/KAR	887	High BOD Stream	Untreated
133/AEE/KAR	888	Outlet of Colony STP	Treated

Env.Scientist

Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Sl.No	Parameters	LAB Code	883	884	885	886	887	888
		DEE Code	128/AEE/KAR	129/AEE/KAR	130/AEE/KAR	131/AEE/KAR	132/AEE/KAR	133/AEE/KAR
1.	pH		6.14	6.86	7.96	8.07	4.59	7.26
2.	Total Suspended Solids	(mg/l)	832	156	24	10	1960	12
3.	Total Dissolved Solids at 180° C	(mg/l)	1924	2076	1088	1756	2200	-
4.	Chloride (as Cl)	(mg/l)	820	530	315	630	440	-
5.	Sulphate (as SO_4)	(mg/l)	595	150	58	404	620	-
6.	BOD 3 days at 27° C	(mg/l)	540	228	05	04	1593	04
7.	Chemical Oxygen Demand	(mg/l)	1896	1080	48	32	9920	40
8.	Ammonical Nitrogen	(mg/l)	31.4	25.4	6.72	<5.0	48.7	<5.0
9.	Total Kjeldhal Nitrogen	(mg/l)	42	38.1	12.3	6.2	54.9	-
10.	Sulphide (as S)	(mg/l)	9.6	3.2	1.2	1.2	23.2	-
11	Total Nitrogen (as N)	(mg/l)	-	-	-	-	-	1.04
12.	Phenolic Compounds (as Phenol)	(mg/l)	0.088	0.52	0.018	<0.0005	0.16	-
13.	Percent Sodium	(%)	10	10	11	10	15	-
14.	Fecal Coliform	(mg/l)	-	-	-	-	-	*

***Fecal Coliform – Facility is not available.**

End of the Report

17/10/22

Env.Scientist

Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Report No. DEL/DGL/285

Tamil Nadu Pollution Control Board

DISTRICT ENVIRONMENTAL LABORATORY, DINDIGUL-624 004.

REPORT OF ANALYSIS

1. Name and Address of the Sender : The District Environmental Engineer, Tamil Nadu Pollution Control Board, Karur.
2. Date and time of Collection : 19.07.2023 at 12.15 PM to 12.40 PM.
3. Date and time of Receipt at Laboratory : 19.07.2023 at 04.55 PM.
4. Condition of Seals, Fastening and Container : Sealed and Fastened Condition in Polythene Carbuoy of 2.5 Lit x 6 Nos.
5. Nature and Number of Samples : Five Nos. of Trade Effluent Samples & One No. of Sewage Sample.

DEE Code No.	Lab Code No.	Point of Collection	T/UT/PT/NM
95/AEE/KAR	702	Low BOD Stream	Untreated
96/AEE/KAR	703	Inlet of ASL Combined Effluent (Low & High BOD)	Partially treated
97/AEE/KAR	704	Secondary Clarifier Outlet of ETP	Treated
98/AEE/KAR	705	Seepage Canal	------
99/AEE/KAR	706	High BOD Stream	Untreated
100/AEE/KAR	707	Outlet of Colony STP	Treated

14/08/2023

Jr.Env.Scientist

Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Sl.No.	Parameters	LAB Code / DEE Code	702 / 95/AEE/KAR	703 / 96/AEE/KAR	704 / 97/AEE/KAR	705 / 98/AEE/KAR	706 / 99/AEE/KAR	707 / 100/AEE/KAR
1.	pH		6.08	6.95	7.96	7.99	5.06	7.54
2.	Total Suspended Solids	(mg/l)	1028	188	40	20	2120	08
3.	Total Dissolved Solids at 180° C	(mg/l)	2136	2152	1336	1632	2680	-
4.	Chloride (as Cl)	(mg/l)	750	650	380	550	530	-
5.	Sulphate (as SO_4)	(mg/l)	130	120	154	375	256	-
6.	BOD 3 days at 27^0 C	(mg/l)	1545	500	90	06	3750	<2.0
7.	Chemical Oxygen Demand	(mg/l)	3840	1600	320	32	11760	16
8.	Ammonical Nitrogen	(mg/l)	22.4	19.6	16.8	<5.0	50.4	<5.0
9.	Total Kjeldhal Nitrogen	(mg/l)	30.8	25.2	22.4	<5.0	75.6	-
10.	Sulphide (as S)	(mg/l)	9.6	4.0	1.2	1.2	20.8	-
11	Total Nitrogen (as N)	(mg/l)	-	-	-	-	-	1.40
12.	Phenolic Compounds (as Phenol)	(mg/l)	0.13	0.070	0.025	<0.005	0.18	-
13.	Percent Sodium	(%)	57	49	22	21	40	-
14.	Fecal Coliform	(mg/l)	-	-	-	-	-	*

***Fecal Coliform – Facility is not available.**

End of the Report

14/08/2023

Jr.Env.Scientist

14/8/2023

Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Report No. DEL/DGL/234

Tamil Nadu Pollution Control Board

DISTRICT ENVIRONMENTAL LABORATORY, DINDIGUL-624 004.

REPORT OF ANALYSIS

1. Name and Address of the Sender : The District Environmental Engineer, Tamil Nadu Pollution Control Board, Karur.
2. Date and time of Collection : 27.06.2023 at 12.15 PM to 12.40 PM.
3. Date and time of Receipt at Laboratory : 27.06.2023 at 05.35 PM.
4. Condition of Seals, Fastening and Container : Sealed and Fastened Condition in Polythene Carbuoy of 2.5 Lit x 6 Nos.
5. Nature and Number of Samples : Five Nos. of Trade Effluent Samples & One No. of Sewage Sample.

DEE Code No.	Lab Code No.	Point of Collection	T/UT/PT/NM
66/AEE/KAR	558	Low BOD Stream	Untreated
67/AEE/KAR	559	Inlet of ASL Combined Effluent (Low & High BOD)	Partially treated
68/AEE/KAR	560	Secondary Clarifier Outlet of ETP	Treated
69/AEE/KAR	561	Seepage Canal	------
70/AEE/KAR	562	High BOD Stream	Untreated
71/AEE/KAR	563	Outlet of Colony STP	Treated

19/07/2023
Env.Scientist

20/07/2023
Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Sl. No.	Parameters	LAB Code	558	559	560	561	562	563
		DEE Code	66/AEE/KAR	67/AEE/KAR	68/AEE/KAR	69/AEE/KAR	70/AEE/KAR	71/AEE/KAR
1.	pH		6.39	7.22	8.08	8.25	5.12	7.88
2.	Total Suspended Solids	(mg/l)	192	128	32	16	1460	08
3.	Total Dissolved Solids at 180° C	(mg/l)	2056	2092	1196	1572	2150	-
4.	Chloride (as Cl)	(mg/l)	650	550	282	495	365	-
5.	Sulphate (as SO_4)	(mg/l)	501	265	193	318	562	-
6.	BOD 3 days at 27^0 C	(mg/l)	590	336	24	13	4090	48
7.	Chemical Oxygen Demand	(mg/l)	2160	1280	232	104	14800	-
8.	Ammonical Nitrogen	(mg/l)	14.0	16.8	14.0	8.4	36.4	<5.0
9.	Total Kjeldhal Nitrogen	(mg/l)	22.4	25.2	19.6	11.2	61.6	-
10.	Sulphide (as S)	(mg/l)	7.2	6.4	1.2	1.2	19.2	-
11	Total Nitrogen (as N)	(mg/l)	-	-	-	-	-	0.70
12.	Phenolic Compounds (as Phenol)	(mg/l)	0.073	0.059	0.015	<0.0005	0.093	-
13.	Percent Sodium	(%)	21	31	25	26	23	-
14.	Fecal Coliform	(mg/l)	-	-	-	-	-	*

***Fecal Coliform – Facility is not available.**

End of the Report

19/07/2023
Env.Scientist

22/07/2023
Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Report No. DEL/DGL/126

Tamil Nadu Pollution Control Board

DISTRICT ENVIRONMENTAL LABORATORY, DINDIGUL-624 004.

REPORT OF ANALYSIS

1. Name and Address of the Sender : The District Environmental Engineer, Tamil Nadu Pollution Control Board, Karur.
2. Date and time of Collection : 25.05.2023 at 12.15 PM to 12.40 PM.
3. Date and time of Receipt at Laboratory : 25.05.2023 at 04.15 PM.
4. Condition of Seals, Fastening and Container : Sealed and Fastened Condition in Polythene Carbuoy of 2.5 Lit x 6 Nos.
5. Nature and Number of Samples : Five Nos. of Trade Effluent Samples & One No. of Sewage Sample.

DEE Code No.	Lab Code No.	Point of Collection	T/UT/PT/NM
37/AEE/KAR	303	Low BOD Stream	Untreated
38/AEE/KAR	304	Inlet of ASL Combined Effluent (Low & High BOD)	Partially treated
39/AEE/KAR	305	Secondary Clarifier Outlet of ETP	Treated
40/AEE/KAR	306	Seepage Canal	----
41/AEE/KAR	307	High BOD Stream	Untreated
42/AEE/KAR	308	Outlet of Colony STP	Treated

Jr.Env.Scientist

Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Sl.No	Parameters	LAB Code	303	304	308	308	307	308
		DEE Code	37/AEE/KAR	38/AEE/KAR	39/AEE/KAR	40/AEE/KAR	41/AEE/KAR	42/AEE/KAR
1.	pH		6.56	7.17	8.10	8.12	4.58	7.63
2.	Total Suspended Solids (mg/l)		264	196	40	20	1648	08
3.	Total Dissolved Solids at 180° C (mg/l)		2464	2480	1576	1596	2768	-
4.	Chloride (as Cl) (mg/l)		930	780	515	590	685	-
5.	Sulphate (as SO_4) (mg/l)		516	463	269	308	527	-
6.	BOD 3 days at 27° C (mg/l)		675	368	27	14	2740	06
7.	Chemical Oxygen Demand (mg/l)		2360	1400	240	112	9800	48
8.	Ammonical Nitrogen (mg/l)		16.8	19.6	16.8	8.4	42.0	<5.0
9.	Total Kjeldhal Nitrogen (mg/l)		25.2	28.0	22.4	11.2	67.2	-
10.	Sulphide (as S) (mg/l)		8.8	4.0	1.2	1.2	21.6	-
11	Total Nitrogen (as N) (mg/l)		-	-	-	-	-	0.71
12.	Phenolic Compounds (as Phenol) (mg/l)		0.093	0.082	0.020	<0.0005	0.11	-
13.	Percent Sodium (%)		40	28	25	24	25	-
14.	Fecal Coliform (mg/l)		-	-	-	-	-	*

***Fecal Coliform – Facility is not available.**

End of the Report

Jr.Env.Scientist

Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Report No. DEL/DGL/054

Tamil Nadu Pollution Control Board

DISTRICT ENVIRONMENTAL LABORATORY, DINDIGUL-624 004.

REPORT OF ANALYSIS

1. Name and Address of the Sender : The District Environmental Engineer, Tamil Nadu Pollution Control Board, Karur.
2. Date and time of Collection : 26.04.2023 at 12.15 PM to 12.40 PM.
3. Date and time of Receipt at Laboratory : 26.04.2023 at 04.25 PM.
4. Condition of Seals, Fastening and Container : Sealed and Fastened Condition in Polythene Carbuoy of 2.5 Lit x 6 Nos.
5. Nature and Number of Samples : Five Nos. of Trade Effluent Samples & One No. of Sewage Sample.

DEE Code No.	Lab Code No.	Point of Collection	T/UT/PT/NM
15/AEE/KAR	132	Low BOD Stream	Untreated
16/AEE/KAR	133	Inlet of ASL Combined Effluent (Low & High BOD)	Partially treated
17/AEE/KAR	134	Secondary Clarifier Outlet of ETP	Treated
18/AEE/KAR	135	Seepage Canal	-------
19/AEE/KAR	136	High BOD Stream	Untreated
20/AEE/KAR	137	Outlet of Colony STP	Treated

26/05/2023
Jr.Env.Scientist

26/05/2023
Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Sl.No	Parameters	LAB Code	132	133	134	135	136	137
		DEE Code	15/AEE/KAR	16/AEE/KAR	17/AEE/KAR	18/AEE/KAR	19/AEE/KAR	20/AEE/KAR
1.	pH		6.34	7.44	8.26	8.21	4.52	7.86
2.	Total Suspended Solids (mg/l)		284	236	36	20	1860	08
3.	Total Dissolved Solids at 180° C (mg/l)		2696	2184	1592	1428	3196	-
4.	Chloride (as Cl) (mg/l)		1020	640	375	410	760	-
5.	Sulphate (as SO_4) (mg/l)		524	401	275	236	987	-
6.	BOD 3 days at 27° C (mg/l)		635	328	25	14	2830	06
7.	Chemical Oxygen Demand (mg/l)		2280	1240	232	112	10200	48
8.	Ammonical Nitrogen (mg/l)		19.6	16.8	14	8.4	47.6	<5.0
9.	Total Kjeldhal Nitrogen (mg/l)		28.0	25.2	19.6	11.2	72.8	-
10.	Sulphide (as S) (mg/l)		9.6	3.2	1.2	1.2	22.4	-
11	Total Nitrogen (as N) (mg/l)		-	-	-	-	-	0.88
12.	Phenolic Compounds (as Phenol) (mg/l)		0.10	0.06	0.015	<0.0005	0.12	-
13.	Percent Sodium (%)		48	27	24	41	26	-
14.	Fecal Coliform (mg/l)		-	-	-	-	-	*

***Fecal Coliform – Facility is not available.**

End of the Report

26/05/2023

Jr.Env.Scientist

26/05/2023

Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

LATEST NABL ACCREDITED & MoEF&CC RECOGNIZED THIRD PARTY LAB – WATER ANALYSIS TEST REPORT

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001 2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858223000007005F

Report No	:	**EN23090847**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd.**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water			
Sample No	:	EN23090847	**Sample Collected on**	:	22 Sep 2023
Sample Identification	:	High BOD Stream	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Completed on**	:	29 Sep 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units
Discipline: Chemical				
Group: Pollution and Environment				
1	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	2100	mg/L
2	Colour	by Visual Examination	Brown	-
3	Percent Sodium	CL/EN/SOP/147	39.40	%
4	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	4.40	-
5	Sulphate as SO4	IS 3025 (Part 24): 2014	213	mg/L
6	Sulphide as S	APHA 23rd Edition Part 4500 S-- F : 2017	BDL(DL:1.0)	mg/L
7	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	1924	mg/L
8	Total Nitrogen as N*	APHA 23rd Edition Part 4500 Norg H : 2017	54	mg/L
9	Total Suspended Solids	APHA 23rd Edition Part 2540 D : 2017	229	mg/L
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	293	mg/L
11	Oil & Grease	APHA 23rd Edition Part 5520 B :2017	BDL(DL:4.0)	mg/L
12	Phenolic compound	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L
13	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	34	mg/L
14	Ammonical Nitrogen as NH3-N	APHA 23rd Edition Part 4500 NH3 C : 2017	18.80	mg/L
15	Chemical Oxygen Demand	APHA 23rd Edition Part 5220 B,C : 2017	5091	mg/L

Note : BDL: Below Detection Limit, DL: Detection Limit
* Non NABL Parameter

Verified By

Authorized Signature
E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #D/1.1 St Floor, Sri Jothi Complex Murugesan Street, Balaviganagar Nagar, Arumbakkam Chennai 600 106

Terms and Conditions:
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* The Test Report Shall not be reproduced in full or part without the written approval of Glens.
* The test items will not be retained for more than 15 days from the date of issue of test report except in the case as required by the application regulations.
* The Laboratory's Responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
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TC - 8582

TEST REPORT

ULR No : TCBS8223000007006F

Report No	:	**EN23090848**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water			
Sample No	:	EN23090848	**Sample Collected on**	:	22 Sep 2023
Sample Identification	:	Low BOD Stream	**Sample Reeelved on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Completed on**	:	29 Sep 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units
Discipline: Chemical				
Group: Pollution and Environment				
1	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	340	mg/L
2	Colour	by Visual Examination	Brown	-
3	Percent Sodium	GL/EN/SOP/147	46.50	%
4	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.81	-
5	Sulphate as SO4	IS 3025 (Part 24): 2014	216	mg/L
6	Sulphide as S	APHA 23rd Edition Part 4500 S– F : 2017	BDL(DL:1.0)	mg/L
7	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	1784	mg/L
8	Total Nitrogen as N*	APHA 23rd Edition Part 4500 Norg H : 2017	31	mg/L
9	Total Suspended Solids	APHA 23rd Edition Part 2540 D : 2017	124	mg/L
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	889	mg/L
11	Oil & Grease	APHA 23rd Edition Part 5520 B :2017	BDL(DL:4.0)	mg/L
12	Phenolic compound	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L
13	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	22	mg/L
14	Ammonical Nitrogen as NH3-N	APHA 23rd Edition Part 4500 NH3 C : 2017	4.2	mg/L
15	Chemical Oxygen Demand	APHA 23rd Edition Part 5220 B,C : 2017	1580	mg/L

Note : BDL: Below Detection Limit, DL: Detection Limit
* Non NABL Parameter

Verified By

Authorized Signature
E. PRITHVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 St Floor, Sri Jothi Complex Murugesan Street, Balaji Nagar Nagar, Arumbakkam Chennai 600 106

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TC - 8582

TEST REPORT

ULR No : TC858223000007007F

Report No	:	**EN23090849**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water			
Sample No	:	EN23090849	**Sample Collected on**	:	22 Sep 2023
Sample Identification	:	Inlet to ASL Combined Effluent (Both High and Low BOD)	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Completed on**	:	29 Sep 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units
Discipline: Chemical				
Group: Pollution and Environment				
1	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	330	mg/L
2	Colour	by Visual Examination	Black	-
3	Percent Sodium	GL/EN/SOP/147	35.90	%
4	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.75	-
5	Sulphate as SO4	IS 3025 (Part 24): 2014	164	mg/L
6	Sulphide as S	APHA 23rd Edition Part 4500 S-- F : 2017	BDL(DL:1.0)	mg/L
7	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	1984	mg/L
8	Total Nitrogen as N*	APHA 23rd Edition Part 4500 Norg B : 2017	24.0	mg/L
9	Total Suspended Solids	APHA 23rd Edition Part 2540 D : 2017	168	mg/L
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	489	mg/L
11	Oil & Grease	APHA 23rd Edition Part 5520 B :2017	BDL(DL:4.0)	mg/L
12	Phenolic compound	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L
13	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	15	mg/L
14	Ammonical Nitrogen as NH3-N	APHA 23rd Edition Part 4500 NH3 C : 2017	6.60	mg/L
15	Chemical Oxygen Demand	APHA 23rd Edition Part 5220 B,C : 2017	680	mg/L

Note : BDL: Below Detection Limit, DL: Detection Limit
* Non NABL Parameter

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Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, No/1, 1 st Floor, Sri Jothi Complex Murugesan Street, Balaviniyagar Nagar, Arumbakkam Chennai 600106

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TC - 8582

TEST REPORT

ULR No : TC858223000007008F

Report No	:	**EN23090850**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water			
Sample No	:	EN23090850	**Sample Collected on**	:	22 Sep 2023
Sample Identification	:	Seepage Canel	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Completed on**	:	29 Sep 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units
Discipline: Chemical				
Group: Pollution and Environment				
1	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	11.70	mg/L
2	Colour	by Visual Examination	Brown	-
3	Percent Sodium	GL/EN/SOP/147	57.40	%
4	pH @ 25°C	APHA 23rd Edition Part 4500 H+ H : 2017	7.88	-
5	Sulphate as SO4	IS 3025 (Part 24): 2014	381	mg/L
6	Sulphide as S	APHA 23rd Edition Part 4500 S-- F : 2017	BDL(DL:1.0)	mg/L
7	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	2512	mg/L
8	Total Nitrogen as N*	APHA 23rd Edition Part 4500 Norg H : 2017	13.30	mg/L
9	Total Suspended Solids	APHA 23rd Edition Part 2540 D : 2017	30.0	mg/L
10	Chloride as Cl	APHA 23rd Edidon Part 4500 Cl - B : 2017	729	mg/L
11	Oil & Grease	APHA 23rd Edition Part 5520 B :2017	BDL(DL:4.0)	mg/L
12	Phenolic compound	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L
13	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	7.60	mg/L
14	Ammonical Nitrogen as NH3-N	APHA 23rd Edition Part 4500 NH3 C : 2017	BDL(DL:1.0)	mg/L
15	Chemical Oxygen Demand	APHA 23rd Edition Part 5220 B,C : 2017	48	mg/L

Note : BDL: Below Detection Limit, DL: Detection Limit
* Non NABL Parameter

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Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1, I St Floor, Sri Jothi Complex Murugesan Street, Balaramayagar Nagar, Arumbakkam Chennai 600106

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TC - 8582

TEST REPORT

ULR No : TC858223000007009F

Report No	:	EN23090851	**Report Date**	:	10 Oct 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water			
Sample No	:	EN23090851			
Sampling Location	:	Outlet of Colony STP	**Sample Collected on**	:	22 Sep 2023
Sample Condition	:	Good	**Sample Received on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Started on**	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	29 Sep 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	As per TNPCB Limit
Discipline: Chemical					
Group: Pollution and Environment					
1	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	4.10	mg/L	<50
2	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.10	-	5.5 - 9.0
3	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	5.80	mg/L	30
4	Chemical Oxygen Demand(COD)	APHA 23rd Edition Part 5220 B,C : 2017	22	mg/L	-
5	Total Kjeldahl Nitrogen as	APHA 23rd Edition Part 4500 Norg B : 2017	5.50	mg/L	-
6	Ammonical Nitrogen as NH3-N	APHA 23rd Edition Part 4500 NH3 C : 2017	BDL(DL1.0)	mg/L	-
7	Free Residual Chlorine	APHA 23rd Edition Part 4500 Cl B : 2017	BDL(DL0.1)	mg/L	-
Microbiology Test					
08	Faecal coliforms	APHA 23rd Edition 9221E: 2017	90	MPN/100mL	-

Remarks: The above STP Outlet water sample is below the TNPCB discharge limit against the above tested parameters for which the limit has been provided in the specification.

Note : **BDL**: Below Detection Limit.

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

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TC - 8582

TEST REPORT

ULR No : TC858223000007010P

Report No	:	**EN23090852**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water			
Sample No	:	EN23090052	Sample Collected on	:	22 Sep 2023
Sample Identification	:	Secoudary Clarifier Outlet of ETP	Sample Received on	:	26 Sep 2023
Sample Condition	:	Good	Test Started on	:	26 Sep 2023
Sample Quantity	:	5 Litre	Test Completed on	:	03 Oct 2023
Sample Submission Type	:	**Collected ny Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	As per TNPCB Limit
Discipline: Chemical					
Group: Pollution and Enviroument					
1	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	23	mg/L	100
2	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	1885	mg/L	2100
3	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.94	-	5.5 to 9.0
4	Oil & Grease	APHA 23rd Edition Part 5520 B:2017	BDL(DL:4.0)	mg/L	10
5	Ammonical Nitrogen as NH_3	APHA 23rd Edition Part 4500 NH3 C : 2017	BDL(DL:1.0)	mg/L	50
6	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	15	mg/L	100
7	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	19	mg/L	30
8	Chemical Oxygen Demand (COD)	APHA 23rd Edition Part 5220 B,C : 2017	193	mg/L	250
9	Percent Sodium	GL/EN/SOP/147 Issue no.1 : 2019	43.0	%	-
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	613	mg/L	1000
11	Sulphate as SO_4	IS 3025 (Part 24): 2014	240	mg/L	1000
12	Sulphide as S	APHA 23rd Edition Part 4500 S– F : 2017	BDL(DL:1.0)	mg/L	2
13	Phenolic Compounds as C_6H_5OH	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L	1
14	Colour	Visual Examination	Brown	-	-
15	TOC	By Conversion	72	mg/L	-
16	AOX*	EPA 1653,5021 & 8260	2.90	mg/L	-

Note : BDL: Below Detection Limit, DL: Detection Limit
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ANNEXURE IV

ONLINE – WATER QUALITY WATCH MONITORING DATA

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ONLINE WATER QUALITY WATCH MONITORING DATA

Date	ETP_1_OUTLET-BOD (mg/l)	ETP_1_OUTLET-COD (mg/l)	ETP_1_OUTLET-TSS (mg/l)	ETP_1_OUTLET-pH
Apr-23				
01-04-2023	8.36	76.06	21.34	7.74
02-04-2023	8.39	76.24	25.19	7.76
03-04-2023	8.73	79.41	18.53	7.72
04-04-2023	7.94	72.10	18.47	7.69
05-04-2023	8.54	77.51	20.40	7.73
06-04-2023	9.13	83.01	26.83	7.74
07-04-2023	8.94	81.26	26.06	7.75
08-04-2023	8.32	75.57	24.07	7.76
09-04-2023	8.68	78.92	25.02	7.75
10-04-2023	9.15	83.16	19.88	7.74
11-04-2023	8.73	79.45	26.11	7.73
12-04-2023	8.66	78.55	27.45	7.74
13-04-2023	8.24	74.83	22.84	7.73
14-04-2023	8.63	78.31	30.92	7.80
15-04-2023	8.51	77.33	23.43	7.85
16-04-2023	8.04	72.95	26.38	7.80
17-04-2023	9.17	83.31	32.86	7.74
18-04-2023	9.85	89.63	22.86	7.75
19-04-2023	10.11	92.04	27.50	7.73
20-04-2023	8.59	78.09	22.33	7.85
21-04-2023	8.75	79.53	31.84	8.15
22-04-2023	7.90	71.73	20.83	8.21
23-04-2023	9.62	87.48	23.49	8.21
24-04-2023	10.05	91.50	19.39	8.23
25-04-2023	9.15	83.09	18.23	8.23
26-04-2023	9.51	86.42	15.79	8.18
27-04-2023	10.26	93.46	19.33	8.18
28-04-2023	9.80	89.17	19.31	8.19
29-04-2023	10.56	96.14	18.60	8.20
30-04-2023	10.57	96.25	23.18	8.20
MINIMUM	**7.90**	**71.73**	**15.79**	**7.69**
MAXIMUM	**10.57**	**96.25**	**32.86**	**8.23**
AVERAGE	**270.88**	**2462.50**	**698.46**	**237.08**

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ONLINE WATER QUALITY WATCH MONITORING DATA

Date	ETP_1_OUTLET-BOD (mg/l)	ETP_1_OUTLET-COD (mg/l)	ETP_1_OUTLET-TSS (mg/l)	ETP_1_OUTLET-pH
May-23				
01-05-2023	9.45	86.00	15.36	8.17
02-05-2023	7.74	70.19	14.55	8.17
03-05-2023	10.17	92.48	18.84	8.21
04-05-2023	10.83	98.66	25.59	8.20
05-05-2023	9.10	82.70	12.89	8.26
06-05-2023	7.02	63.53	13.74	8.23
07-05-2023	4.91	44.01	11.63	7.98
08-05-2023	4.82	43.11	17.51	7.89
09-05-2023	4.56	40.69	11.19	7.94
10-05-2023	4.97	44.37	12.39	7.96
11-05-2023	5.51	49.45	14.69	8.02
12-05-2023	6.76	60.95	16.67	8.05
13-05-2023	10.73	97.51	32.65	8.18
14-05-2023	10.35	94.08	23.69	8.27
15-05-2023	11.16	101.65	27.51	8.26
16-05-2023	8.46	76.71	23.90	8.25
17-05-2023	9.73	88.38	21.91	8.27
18-05-2023	9.67	87.93	24.67	8.25
19-05-2023	8.68	78.84	27.65	8.25
20-05-2023	9.69	88.05	24.28	8.25
21-05-2023	9.97	90.71	30.95	8.25
22-05-2023	10.12	92.07	30.52	8.23
23-05-2023	9.65	87.83	27.87	8.19
24-05-2023	7.73	70.13	26.28	7.98
25-05-2023	9.15	83.06	27.99	8.00
26-05-2023	10.10	91.82	28.51	7.99
27-05-2023	8.90	80.83	21.90	8.07
28-05-2023	8.30	75.29	24.46	8.03
29-05-2023	7.80	70.41	36.35	8.03
30-05-2023	9.54	86.79	27.02	8.10
31-05-2023	8.57	77.63	13.76	8.15
MINIMUM	**4.56**	**40.69**	**11.19**	**7.89**
MAXIMUM	**11.16**	**101.65**	**36.35**	**8.27**
AVERAGE	**8.52**	**77.29**	**22.16**	**8.13**

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ONLINE WATER QUALITY WATCH MONITORING DATA

Date	ETP_1_OUTLET-BOD (mg/l)	ETP_1_OUTLET-COD (mg/l)	ETP_1_OUTLET-TSS (mg/l)	ETP_1_OUTLET-pH
Jun-23				
01-06-2023	11.07	100.79	36.67	8.10
02-06-2023	9.83	89.32	27.92	8.17
03-06-2023	8.50	77.11	24.18	8.22
04-06-2023	9.49	86.09	23.92	8.20
05-06-2023	9.65	87.72	28.23	8.22
06-06-2023	9.48	86.15	27.68	8.16
07-06-2023	10.18	92.64	19.28	8.16
08-06-2023	9.55	86.86	16.01	8.11
09-06-2023	7.04	63.65	19.86	8.13
10-06-2023	8.27	74.89	29.79	7.98
11-06-2023	8.47	76.84	17.11	7.98
12-06-2023	7.65	69.29	21.02	8.01
13-06-2023	8.66	78.53	28.86	7.98
14-06-2023	8.60	78.08	21.64	7.94
15-06-2023	9.24	83.87	26.67	7.91
16-06-2023	10.78	98.15	22.73	7.88
17-06-2023	10.59	96.37	20.96	7.90
18-06-2023	8.54	77.64	19.98	7.87
19-06-2023	8.70	78.97	27.17	7.92
20-06-2023	7.94	71.89	21.72	7.97
21-06-2023	7.91	71.58	20.24	7.97
22-06-2023	9.67	87.92	21.70	7.93
23-06-2023	9.72	88.52	24.17	7.97
24-06-2023	7.97	72.43	18.86	7.94
25-06-2023	7.44	67.49	22.60	7.92
26-06-2023	5.70	51.27	15.94	7.90
27-06-2023	7.53	68.26	27.16	7.95
28-06-2023	6.93	62.80	23.11	7.91
29-06-2023	7.26	65.68	29.88	7.86
30-06-2023	7.63	69.25	22.23	7.88
MINIMUM	**5.70**	**51.27**	**15.94**	**7.86**
MAXIMUM	**11.07**	**100.79**	**36.67**	**8.22**
AVERAGE	**8.67**	**78.67**	**23.58**	**8.00**

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ONLINE WATER QUALITY WATCH MONITORING DATA

Date	ETP_1_OUTLET-BOD (mg/l)	ETP_1_OUTLET-COD (mg/l)	ETP_1_OUTLET-TSS (mg/l)	ETP_1_OUTLET-pH
Jul-23				
01-07-2023	8.59	78.07	28.74	7.92
02-07-2023	6.80	61.62	22.13	7.92
03-07-2023	7.80	70.63	19.85	7.89
04-07-2023	9.78	89.06	25.23	7.93
05-07-2023	10.06	91.57	23.35	7.97
06-07-2023	9.15	83.24	17.08	7.98
07-07-2023	9.56	87.01	22.97	8.00
08-07-2023	7.00	63.37	20.73	7.95
09-07-2023	8.30	75.33	20.86	7.99
10-07-2023	8.64	78.53	19.88	8.03
11-07-2023	8.12	73.64	21.04	8.06
12-07-2023	8.58	77.98	31.30	8.01
13-07-2023	6.45	58.24	21.40	8.00
14-07-2023	7.31	66.18	26.62	8.05
15-07-2023	8.53	77.52	29.48	8.06
16-07-2023	7.65	69.49	18.19	8.07
17-07-2023	7.68	69.69	22.64	8.11
18-07-2023	7.85	71.21	28.96	8.06
19-07-2023	7.99	72.56	26.88	8.04
20-07-2023	6.59	59.64	26.11	8.07
21-07-2023	6.96	63.00	26.84	8.10
22-07-2023	5.96	53.68	24.15	8.08
23-07-2023	5.44	48.79	16.05	8.05
24-07-2023	7.70	69.74	27.61	8.10
25-07-2023	8.00	72.56	23.70	8.12
26-07-2023	8.44	76.56	31.71	8.10
27-07-2023	9.00	81.76	27.93	8.12
28-07-2023	9.34	84.80	22.41	8.30
29-07-2023	9.01	81.90	21.91	8.33
30-07-2023	8.40	76.30	21.17	8.35
31-07-2023	7.43	67.34	13.72	8.37
MINIMUM	**5.44**	**48.79**	**13.72**	**7.89**
MAXIMUM	**10.06**	**91.57**	**31.71**	**8.37**
AVERAGE	**8.00**	**72.61**	**23.57**	**8.07**

TNPL *TAMILNADU NEWSPRINT AND PAPERS LIMITED*

ONLINE WATER QUALITY WATCH MONITORING DATA

Date	ETP_1_OUTLET-BOD (mg/l)	ETP_1_OUTLET-COD (mg/l)	ETP_1_OUTLET-TSS (mg/l)	ETP_1_OUTLET-pH
Aug-23				
01-08-2023	7.70	69.73	20.93	8.29
02-08-2023	8.54	77.58	24.11	8.28
03-08-2023	8.44	76.52	25.77	8.29
04-08-2023	9.13	83.03	23.31	8.30
05-08-2023	8.00	72.65	21.68	8.32
06-08-2023	6.56	59.25	29.49	8.28
07-08-2023	6.96	62.89	23.55	8.36
08-08-2023	7.65	69.36	22.37	8.26
09-08-2023	8.92	80.96	26.87	8.10
10-08-2023	7.95	72.11	20.02	8.10
11-08-2023	8.16	73.98	17.56	8.08
12-08-2023	11.08	100.90	21.57	8.03
13-08-2023	9.43	85.82	18.66	8.11
14-08-2023	7.77	70.47	20.56	8.13
15-08-2023	7.88	71.48	23.03	8.14
16-08-2023	8.07	73.17	26.39	8.15
17-08-2023	6.67	60.13	24.42	8.15
18-08-2023	7.82	70.97	21.51	8.18
19-08-2023	8.78	79.70	22.80	8.16
20-08-2023	8.73	79.26	20.45	8.16
21-08-2023	9.36	85.04	20.81	8.18
22-08-2023	9.93	90.34	25.25	8.18
23-08-2023	9.31	84.61	24.90	8.24
24-08-2023	8.32	75.54	29.92	8.21
25-08-2023	6.55	59.06	24.16	8.17
26-08-2023	8.75	79.38	25.65	8.21
27-08-2023	8.82	80.10	22.77	8.24
28-08-2023	6.55	59.16	18.31	8.22
29-08-2023	5.20	46.63	14.56	8.21
30-08-2023	4.52	40.44	19.78	8.21
31-08-2023	6.17	55.53	25.90	8.26
MINIMUM	**4.52**	**40.44**	**14.56**	**8.03**
MAXIMUM	**11.08**	**100.90**	**29.92**	**8.36**
AVERAGE	**7.99**	**72.44**	**22.81**	**8.20**

TNPL *TAMILNADU NEWSPRINT AND PAPERS LIMITED*

ONLINE WATER QUALITY WATCH MONITORING DATA

Date	ETP_1_OUTLET-BOD (mg/l)	ETP_1_OUTLET-COD (mg/l)	ETP_1_OUTLET-TSS (mg/l)	ETP_1_OUTLET-pH
Sep-23				
01-09-2023	7.51	68.01	24.76	8.31
02-09-2023	7.96	72.22	31.04	8.29
03-09-2023	6.33	57.10	24.67	8.24
04-09-2023	7.00	63.20	25.75	8.25
05-09-2023	6.85	61.96	21.09	8.27
06-09-2023	6.26	56.44	24.47	8.25
07-09-2023	4.82	43.16	18.12	8.24
08-09-2023	5.71	51.36	23.73	8.19
09-09-2023	5.63	50.60	21.12	8.18
10-09-2023	5.09	45.67	16.32	8.18
11-09-2023	6.25	56.28	20.38	8.24
12-09-2023	6.42	57.85	16.42	8.25
13-09-2023	6.48	58.36	16.86	8.27
14-09-2023	7.08	63.93	19.31	8.37
15-09-2023	7.98	72.38	26.75	8.41
16-09-2023	6.98	63.21	14.13	8.42
17-09-2023	4.63	41.32	13.70	8.17
18-09-2023	5.66	50.86	22.42	8.20
19-09-2023	6.05	54.43	25.08	8.24
20-09-2023	4.78	42.81	16.29	8.21
21-09-2023	5.32	47.75	25.93	8.23
22-09-2023	3.53	31.32	27.69	8.16
23-09-2023	5.11	45.74	32.05	8.24
24-09-2023	4.83	43.19	18.76	8.29
25-09-2023	4.45	39.62	10.32	8.34
26-09-2023	5.90	53.04	22.50	8.29
27-09-2023	5.51	49.47	23.87	8.29
28-09-2023	3.56	31.53	18.81	8.25
29-09-2023	3.01	26.39	15.46	8.20
30-09-2023	4.67	41.72	20.17	8.25
MINIMUM	**3.01**	**26.39**	**10.32**	**8.16**
MAXIMUM	**7.98**	**72.38**	**32.05**	**8.42**
AVERAGE	**5.71**	**51.36**	**21.27**	**8.26**

ANNEXURE V

TNPCB - GROUND WATER ANALYSIS REPORT

Report No. DEL/DGL/236

Tamil Nadu Pollution Control Board

DISTRICT ENVIRONMENTAL LABORATORY, DINDIGUL-624 004.

REPORT OF ANALYSIS

1. Name and Address of the Sender : The District Environmental Engineer, Tamil Nadu Pollution Control Board, Karur – 1.
2. Date and time of Collection : 27.06.2023 at 01.00 PM to 01.40 PM.
3. Date and time of Receipt at Laboratory : 27.06.2023 at 05.45 PM
4. Condition of Seals, Fastening and Container : Sealed and Fastened Condition in Polythene Carbuoy of 2.5 Lit x 11 Nos.
5. Nature and Number of Samples : Nine Nos. of Open Well Water Samples & Two Nos.of Channel Water Samples.

DEE Code No.	Lab Code No.	Point of Collection	T/UT/PT/NM
74/AEE/KAR	566	Palamapuram Bhagavathi Amman temple irrigation open well	-----
75/AEE/KAR	567	Periyasamy open well	-----
76/AEE/KAR	568	Ponnusamy Irrigation open well	-----
77/AEE/KAR	569	Pandipalayam Hand pump	-----
78/AEE/KAR	570	Pandipalayam Open well	-----
79/AEE/KAR	571	Moolimangalam Pandipalayam Road (Rasappan Open Well)	-----
80/AEE/KAR	572	E.Palanisamy Open Well	-----
81/AEE/KAR	573	Thangavelu Open Well	-----
82/AEE/KAR	574	Periyasamy open well Sakthi pallam	-----

19/07/2023
Env.Scientist

20/07/2023
Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

Sl. No	Parameters	LAB Code	566	567	568	569	570	571	572	573	574
		DEE Code	74/AEE/ KAR	75/AEE/ KAR	76/AEE/ KAR	77/AEE/ KAR	78/AEE/ KAR	79/AEE/ KAR	80/AEE/ KAR	81/AEE/ KAR	82/AEE/ KAR
1.	pH		7.76	7.72	7.77	8.27	7.73	7.75	7.84	7.88	8.35
2.	Total Suspended Solids	(mg/l)	08	04	04	04	04	04	04	04	04
3.	Total Dissolved Solids at 180° C	(mg/l)	3392	3068	3124	2748	3104	3112	2472	2436	2736
4.	Chloride (as Cl)	(mg/l)	950	920	890	820	900	890	700	680	820
5.	Sulphate (as SO_4)	(mg/l)	380	333	486	302	446	528	410	402	462
6.	BOD 3 days at 27^0 C	(mg/l)	06	05	05	04	05	05	04	04	04
7.	Chemical Oxygen Demand	(mg/l)	48	40	40	32	40	40	32	32	32
8.	Fluoride (as F)	(mg/l)	1.37	1.17	1.22	1.00	1.07	1.20	0.91	1.08	0.76
9.	Alkalinity (as $Caco_3$)	(mg/l)	32	24	28	16	24	24	16	16	20
10.	Total Hardness	(mg/l)	770	840	650	660	590	580	530	510	540
11.	Calcium (as Ca)	(mg/l)	132	100	116	64	96	116	96	120	48
12.	Magnesium (as Mg)	(mg/l)	107	143	87	122	85	70	70	51	102
13.	Percent Sodium	(%)	31	29	36	38	43	42	41	41	36
14.	Iron Total (as Fe)	(mg/l)	0.05	0.03	0.05	0.01	<0.01	0.02	0.03	<0.01	<0.01

End of the Report

19/07/2023
Env.Scientist

20/07/2023
Deputy Chief Scientific Officer,
DEL, TNPC Board, Dindigul.

LATEST NABL ACCREDITED & MoEF&CC RECOGNIZED THIRD PARTY LAB – GROUND WATER ANALYSIS TEST REPORT

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017 CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858223000007011P

Report No	:	**EN23090853**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN23090853			
Sampling Location	:	Palamapuram bhagavathi amman temple	**Sampling Date**	:	22 Sep 2023
Sample Condition	:	Fit for Analysis	**Sample Received on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Started on**	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units
1	pH at 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	6.98	-
2	Total Dissolved solids	APHA 23rd Edition Part 2540 C : 2017	3556	mg/L
3	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	7.70	No Unit
4	Chloride as Cl	APHA 23rd Edition Part 4500 Cl B : 2017	1135	mg/L
5	Calcium as Ca	APHA 23rd Edition:3500 Ca H:2017	200	mg/L
6	Fluoride as F	APHA 23rd Edition Part 4500 F- D: 2017	0.17	mg/L
7	Magnesium as Mg	APHA 23rd Edition Part 3500 Mg B : 2017	107	mg/L
8	Total Alkalinity as CaCO3	IS 3025 (Part 23): 1986 RA : 2014	653	mg/L
9	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C: 2017	1267	mg/L

Verified By

Authorized Signature

E. PRITHIVIRAJAN

LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, 86/1,1 St Floor , Sri Jothi Complex Murugesan Street , Balasundaram Nagar, Arumbakkam Chennai 600 106

Terms and Conditions:

* The Test Results Relate only to the items tested.
* The Test Report Shall not be reproduced in full or part without the written approval of Glens.
* The test items will not be retained for more than 15 days from the date of issue of test report unless (in the case as required by the application regulations).
* The Laboratory's Responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
* A satisfactory test report in no way implies that the product so tested is approved by NABL.
* Laboratory is not responsible for the authenticity of photocopied test reports.

TEST REPORT

Report No : **EN23090853** **Report Date** : **10 Oct 2023**

S.No	Test Name	Test Method	Results	Units
10	Oil and Grease	APHA 23rd Edition Part 5520 :2017	BDL(DL:4.0)	mg/L
11	Iron as Fe	APHA 23rd Edition Part 3500 Fe B :2017	0.80	mg/L
12	Percent Sodium (%)	GL/EN/SOP/147	56.7	%
13	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	5.0	mg/L
14	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	468	mg/L
15	COD	APHA 23rd Edition Part 5220 B,C : 2017	36	mg/L
16	BOD at 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	091	mg/L
17	Colour	IS 3025 (Part 4): 1983 RA : 2017	20	Hazen
18	Odour	IS 3025 (Part 5): 2018	Agreeable	No Unit
19	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	2.50	NTU
20	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43): 1992 RA : 2014	BDL(DL:0.001)	mg/L
21	Cyanide as CN	IS 3025 (Part 27): 1986 RA : 2014	BDL(DL:0.01)	mg/L
22	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	96	mg/L
23	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	6.8	mg/L
24	Nitrate Nitrogen as NO3	IS 3025 (Part 34): 1988 RA : 2014	BDL(DL:1.0)	mg/L
25	Mercury as Hg	EPA Method 200.8	BLQ(LOQ:0.0005)	mg/L
26	Total Arsenic as As	IS 3025 (Part-65):2014	BLQ(LOQ:0.002)	mg/L
27	Total Chromium as Cr	IS 3025 (Part-65):2014	0.0014	mg/L

Note: BDL-Below Detection Limit, DL- Detection Limit

.....End of Report.....

Verified By

Authorized Signature
E. PRITHVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,3 St Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600 106

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GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001 2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858223000007012F

Report No	:	**EN23090854**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN23090854			
Sampling Location	:	Periyasamy open well	**Sampling Date**	:	22 Sep 2023
Sample Condition	:	Fit for Analysis	**Sample Received on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Started on**	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units
1	pH at 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	6.86	-
2	Total Dissolved solids	APHA 23rd Edition Part 2540 C : 2017	3252	mg/L
3	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	6.0	No Unit
4	Chloride as Cl	APHA 23rd Edition Part 4500 Cl B : 2017	1057	mg/L
5	Calcium as Ca	APHA 23rd Edition:3500 Ca B:2017	232	mg/L
6	Fluoride as F	APHA 23rd Edition Part 4500 F- D: 2017	1.16	mg/L
7	Magnesium as Mg	APHA 23rd Edition Part 3500 Mg B : 2017	102	mg/L
8	Total Alkalinity as CaCO3	IS 3025 (Part 23): 1986 RA : 2014	554	mg/L
9	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C: 2017	1000	mg/L

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, 8B/1.1 St Floor , Sri Jothi Complex Murugesan Street , Balavinayagar Nagar, Arumbakkam Chennai 600106

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GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017 CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

Report No : EN23090854 **Report Date** : 10 Oct 2023

S.No	Test Name	Test Method	Results	Units
10	Oil and Grease	APHA 23rd Edition Part 5520 :2017	BDL(DL:4.0)	mg/L
11	Iron as Fe	APHA 23rd Edition Part 3500 Fe B :2017	0.10	mg/L
12	Percent Sodium (%)	GL/EN/SOP/147	48.80	%
13	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	BDL	mg/L
14	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	397	mg/L
15	COD	APHA 23rd Edition Part 5220 B,C : 2017	9.0	mg/L
16	BOD at 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L
17	Colour	IS 3025 (Part 4): 1983 RA : 2017	10	Hazen
18	Odour	IS 3025 (Part 5): 2018	Agreeable	No Unit
19	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	Less then 0.1	NTU
20	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43): 1992 RA : 2014	BDL(DL:0.001)	mg/L
21	Cyanide as CN	IS 3025 (Part 27): 1986 RA : 2014	BDL(DL:0.01)	mg/L
22	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	2.9	mg/L
23	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	6.90	mg/L
24	Nitrate Nitrogen as NO3	IS 3025 (Part 34): 1988 RA : 2014	BDL(DL:1.0)	mg/L
25	Mercury as Hg	EPA Method 200.8	BLQ(LOQ:0.0005)	mg/L
26	Total Arsenic as As	IS 3025 (Part-65):2014	BLQ(LOQ:0.002)	mg/L
27	Total Chromium as Cr	IS 3025 (Part-65):2014	0.008	mg/L

Note: BDL-Below Detection Limit, DL- Detection Limit

-----End of Report-----

Verified By

Authorized Signature

E. PRITHIVIRAJAN

LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1, 1 St Floor , Sri Jothi Complex Murugesan Street , Balaventayagar Nagar, Arumbakkam Chennai 600 106

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GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858223000007 0 3F

Report No	:	**EN23090855**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN23060561			
Sampling Location	:	Ponnusamy Irragtion open well	**Sampling Date**	:	22 Sep 2023
Sample Condition	:	Fit for Analysis	**Sample Received on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Started on**	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units
1	pH at 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	6.82	-
2	Total Dissolved solids	APHA 23rd Edition Part 2540 C : 2017	3340	mg/L
3	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	4.50	No Unit
4	Chloride as Cl	APHA 23rd Edition Part 4500 Cl B : 2017	1389	mg/L
5	Calcium as Ca	APHA 23rd Edition:3500 Ca B:2017	353	mg/L
6	Fluoride as F	APHA 23rd Edition Part 4500 F- D: 2017	1.19	mg/L
7	Magnesium as Mg	APHA 23rd Edition Part 3500 Mg B : 2017	141	mg/L
8	Total Alkalinity as CaCO3	IS 3025 (Part 23): 1986 RA : 2014	475	mg/L
9	Total Hardness as CaCD3	APHA 23rd Edition Part 2340 C: 2017	1460	mg/L

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1, I St Floor, Sri Jothi Complex Murugesan Street, Balaji Nagar, Nagar, Arumbakkam Chennai 600106

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* Laboratory is not responsible for the authenticity of photocopied test reports.

TEST REPORT

Report No : EN23090855 **Report Date** : 10 Oct 2023

S.No	Test Name	Test Method	Results	Units
10	Oil and Grease	APHA B 23rd Edition Part 5520 :2017	BDL(DL:4.0)	mg/L
11	Iron as Fe	APHA 23rd Edition Part 3500 Fe B :2017	0.22	mg/L
12	Percent Sodium (%)	GL/EN/SOP/147	45.0	%
13	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	BDL(DL:1.0)	mg/L
14	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	555	mg/L
15	COD	APHA 23rd Edition Part 5220 B,C : 2017	17	mg/L
16	BOD at 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L
17	Colour	IS 3025 (Part 4): 1983 RA : 2017	10	Hazen
18	Odour	IS 3025 (Part 5): 2018	Agreeable	No Unit
19	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	5.50	NTU
20	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43): 1992 RA : 2014	BDL(DL:0.001)	mg/L
21	Cyanide as CN	IS 3025 (Part 27): 1986 RA : 2014	BDL(DL:0.01)	mg/L
22	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	4.0	mg/L
23	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	7.0	mg/L
24	Nitrate Nitrogen as NO3	IS 3025 (Part 34): 1988 RA : 2014	BDL(DL:1.0)	mg/L
25	Mercury as Hg	EPA Method 200.8	BLQ(LOQ:0.0005)	mg/L
26	Total Arsenic as As	IS 3025 (Part-65):2014	BLQ(LOQ:0.002)	mg/L
27	Total Chromium as Cr	IS 3025 (Part-65):2014	0.012	mg/L

Note: BDL-Below Detection Limit, DL- Detection Limit

.......End of Report.......

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1, 1st Floor, Sri Jothi Complex Murugesan Street, Dalavinayagar Nagar, Arumbakkam Chennai 600106

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TC - 8582

TEST REPORT

ULR No : TC858223000007014F

Report No	:	EN23090856	**Report Date**	:	10 Oct 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN23090856			
Sampling Location	:	Pandipalayam Hand pump	**Sampling Date**	:	22 Sep 2023
Sample Condition	:	Fit for Analysis	**Sample Received on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Started on**	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/081 & 003	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units
1	pH at 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.64	-
2	Total Dissolved solids	APHA 23rd Edition Part 2540 C : 2017	2904	mg/L
3	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	7.88	No Unit
4	Chloride as Cl	APHA 23rd Edition Part 4500 Cl B : 2017	841	mg/L
5	Calcium as Ca	APHA 23rd Edition:3500 Ca B:2017	112	mg/L
6	Fluoride as F	APHA 23rd Edition Part 4500 F- D: 2017	1.70	mg/L
7	Magnesium as Mg	APHA 23rd Edition Part 3500 Mg D : 2017	73	mg/L
8	Total Alkalinity as CaCO3	IS 3025 (Part 23): 1986 RA : 2014	693	mg/L
9	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C: 2017	580	mg/L

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TC - 8582

TEST REPORT

Report No : **EN23090856** **Report Date** : **10 Oct 2023**

S.No	Test Name	Test Method	Results	Units
10	Oil and Grease	APHA B 23rd Edition Part 5520 :2017	BDL(DL:4.0)	mg/L
11	Iron as Fe	APHA 23rd Edition Part 3500 Fe B :2017	0.21	mg/L
12	Percent Sodium (%)	GL/EN/SOP/147	61	%
13	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	BDL(DL:1.0)	mg/L
14	Sulphate as SO4	IS 3025 (Part 24): 1906 RA : 2014	321	mg/L
15	COD	APHA 23rd Edition Part 5220 B,C : 2017	BDL(DL:4.0)	mg/L
16	BOD at 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L
17	Colour	IS 3025 (Part 4): 1983 RA : 2017	05	Hazen
18	Odour	IS 3025 (Part 5): 2018	Agreeable	No Unit
19	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	Less then 0.1	NTU
20	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43): 1992 RA : 2014	BDL(DL:0.001)	mg/L
21	Cyanide as CN	IS 3025 (Part 27): 1986 RA : 2014	BDL(DL:0.01)	mg/L
22	Potassium as K	APHA 23rd Edition:3500 Ca 0:2017	16.40	mg/L
23	Dissolved Oxygen	APHA 23rd Edition Part 4500 D 0: 2017	6.90	mg/L
24	Nitrate Nitrogen as NO3	IS 3025 (Part 34): 1988 RA : 2014	BDL(DL:1.0)	mg/L
25	Mercury as Hg	EPA Method 200.8	BLQ(LOQ:0.0005)	mg/L
26	Total Arsenic as As	IS 3025 (Part-65):2014	BLQ(LOQ:0.002)	mg/L
27	Total Chromium as Cr	IS 3025 (Part-65):2014	0.0014	mg/L

Note: BDL-Below Detection Limit, DL- Detection Limit

.....End of Report.....

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TC - 8582

TEST REPORT

ULR No : TC858223000007015F

Report No	:	EN23090857	Report Date	:	10 Oct 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd.			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN23090857			
Sampling Location	:	Pandipalayam Open Well	Sampling Date	:	22 Sep 2023
Sample Condition	:	Fit for Analysis	Sample Received on	:	26 Sep 2023
Sample Quantity	:	2 Litre	Test Started on	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	Test Completed on	:	03 Oct 2023
Sample Submission Type	:	Collected by Lab Representative			

Test result

S.No	Test Name	Test Method	Results	Units
1	pH at 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.07	-
2	Total Dissolved solids	APHA 23rd Edition Part 2540 C : 2017	3220	mg/L
3	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	7.70	No Unit
4	Chloride as Cl	APHA 23rd Edition Part 4500 Cl B : 2017	988	mg/L
5	Calcium as Ca	APHA 23rd Edition:3500 Ca B:2017	392	mg/L
6	Fluoride as F	APHA 23rd Edition Part 4500 F- D: 2017	1.51	mg/L
7	Magnesium as Mg	APHA 23rd Edition Part 3500 Mg B : 2017	00	mg/L
8	Total Alkalinity as CaCO3	IS 3025 (Part 23): 1986 RA : 2014	653	mg/L
9	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C: 2017	840	mg/L

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TC - 8582

TEST REPORT

Report No : **EN23090857** **Report Date** : **10 Oct 2023**

S.No	Test Name	Test Method	Results	Units
10	Oil and Grease	APHA B 23rd Edition Part 5520 :2017	BDL(DL:4.0)	mg/L
11	Iron as Fe	APHA 23rd Edition Part 3500 Fe B :2017	0.32	mg/L
12	Percent Sodium (%)	GL/EN/SOP/147	57.0	%
13	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	3.0	mg/L
14	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	407	mg/L
15	COD	APHA 23rd Edition Part 5220 B,C : 2017	4.10	mg/L
16	BOD at 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L
17	Colour	IS 3025 (Part 4): 1983 RA : 2017	10	Hazen
18	Odour	IS 3025 (Part 5): 2018	Agreeable	No Unit
19	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	2.0	NTU
20	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43): 1992 RA : 2014	BDL(DL:0.001)	mg/L
21	Cyanide as CN	IS 3025 (Part 27): 1986 RA : 2014	BDL(DL:0.01)	mg/L
22	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	1.7	mg/L
23	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	7.0	mg/L
24	Nitrate Nitrogen as NO3	IS 3025 (Part 34): 1988 RA : 2014	BDL(DL:1.0)	mg/L
25	Mercury as Hg	EPA Method 200.8	BLQ(LOQ:0.0005)	mg/L
26	Total Arsenic as As	IS 3025 (Part-65):2014	BLQ(LOQ:0.002)	mg/L
27	Total Chromium as Cr	IS 3025 (Part-65):2014	0.0012	mg/L

Note: BDL-below Detection Limit, DL- Detection Limit

.....End of Report.....

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E PRITHIVIRAJAN

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TC - 8582

TEST REPORT

ULR No : TC858223000007016F

Report No	:	**EN23090858**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN23090858			
Sampling Location	:	Moolimaugalam Pandipalayam roof (Rasappan open well)	**Sampling Date**	:	22 Sep 2023
Sample Condition	:	Fit for Analysis	**Sample Received on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Started on**	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units
1	pH at 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.05	-
2	Total Dissolved solids	APHA 23rd Edition Part 2540 C : 2017	2071	mg/L
3	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	5.90	No Unit
4	Chloride as Cl	APHA 23rd Edition Part 4500 Cl B : 2017	871	mg/L
5	Calcium as Ca	APHA 23rd Edition:3500 Ca B:2017	176	mg/L
6	Fluoride as F	APHA 23rd Edition Part 4500 F- D: 2017	1.39	mg/L
7	Magnesium as Mg	APHA 23rd Edition Part 3500 Mg B : 2017	92	mg/L
8	Total Alkalinity as CaCO3	IS 3025 (Part 23): 1986 RA : 2014	634	mg/L
9	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C: 2017	020	mg/L

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E. PRITHIVIRAJAN
LAB MANAGER

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TC - 8582

TEST REPORT

Report No : **EN23090858** **Report Date** : **10 Oct 2023**

S.No	Test Name	Test Method	Results	Units
10	Oil and Grease	APHA 23rd Edition Part 5520 :2017	BDL(DL:4.0)	mg/L
11	Iron as Fe	APHA 23rd Edition Part 3500 Fe B :2017	0.14	mg/L
12	Percent Sodium (%)	GL/EN/SOP/147	50.0	%
13	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	BDL(DL:1.0)	mg/L
14	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	427	mg/L
15	COD	APHA 23rd Edition Part 5220 B,C : 2017	BDL(DL:2.0)	mg/L
16	BOD at 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L
17	Colour	IS 3025 (Part 4): 1983 RA : 2017	Less then 1.0	Hazen
18	Odour	IS 3025 (Part 5): 2018	Agreeable	No Unit
19	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	Less then 0.1	NTU
20	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43): 1992 RA : 2014	BDL(DL:0.001)	mg/L
21	Cyanide as CN	IS 3025 (Part 27): 1986 RA : 2014	BDL(DL:0.01)	mg/L
22	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	11.10	mg/L
23	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	6.50	mg/L
24	Nitrate Nitrogen as NO3	IS 3025 (Part 34): 1988 RA : 2014	BDL(DL:1.0)	mg/L
25	Mercury as Hg	EPA Method 200.8	BLQ(LOQ:0.0005)	mg/L
26	Total Arsenic as As	IS 3025 (Part-65):2014	BLQ(LOQ:0.002)	mg/L
27	Total Chromium as Cr	IS 3025 (Part-65):2014	0.0083	mg/L

Note: BDL-Below Detection Limit, DL- Detection Limit

End of Report.....

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TC - 8582

ULR No : TC858223000007017F

TEST REPORT

Report No	:	**EN23090859**	**Report Date**	:	**10 Oct 2023**
Costomer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN23090859			
Sampling Location	:	E-Palanisamy Open well	**Sampling Date**	:	22 Sep 2023
Sample Coodition	:	Fit for Analysis	**Sample Received on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Started on**	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units
1	pH at 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.16	-
2	Total Dissolved solids	APHA 23rd Edition Part 2540 C : 2017	2120	mg/L
3	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	1.20	No Unit
4	Chloride as Cl	APHA 23rd Edition Part 4500 Cl B : 2017	675	mg/L
5	Calcium as Ca	APHA 23rd Edition:3500 Ca B:2017	273	mg/L
6	Fluoride as F	APHA 23rd Edition Part 4500 F- D: 2017	0.67	mg/L
7	Magnesium as Mg	APHA 23rd Edition Part 3500 Mg B : 2017	126	mg/L
8	Total Alkalinity as CaCO3	IS 3025 (Part 23): 1986 RA : 2014	297	mg/L
9	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C: 2017	1200	mg/L

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TEST REPORT

Report No : EN23090859 **Report Date** : 10 Oct 2023

S.No	Test Name	Test Method	Results	Units
10	Oil and Grease	APHA 8 23rd Edition Part 5520 :2017	BDL(DL:4.0)	mg/L
11	Iron as Fe	APHA 23rd Edition Part 3500 Fe B :2017	0.32	mg/L
12	Percent Sodium (%)	GL/EN/SOP/147	15.0	%
13	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	BDL(DL:1.0)	mg/L
14	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	118	mg/L
15	COD	APHA 23rd Edition Part 5220 B,C : 2017	35	mg/L
16	BOD at 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	8.60	mg/L
17	Colour	IS 3025 (Part 4): 1983 RA : 2017	Less then 1.0	Hazen
18	Odour	IS 3025 (Part 5): 2018	Agreeable	No Unit
19	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	Less then 0.1	NTU
20	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43): 1992 RA : 2014	BDL(DL:0.001)	mg/L
21	Cyanide as CN	IS 3025 (Part 27): 1986 RA : 2014	BDL(DL:0.01)	mg/L
22	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	4.0	mg/L
23	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	7.10	mg/L
24	Nitrate Nitrogen as NO3	IS 3025 (Part 34): 1988 RA : 2014	BDL(DL:1.0)	mg/L
25	Mercury as Hg	EPA Method 200.8	BLQ(LOQ:0.0005)	mg/L
26	Total Arsenic as As	IS 3025 (Part-65):2014	BLQ(LOQ:0.002)	mg/L
27	Total Chromium as Cr	IS 3025 (Part-65):2014	0.009	mg/L

Note: BDL-Below Detection Limit, DL- Detection Limit

End of Report.....
Page 2 of 2

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TC - 8582

TEST REPORT

ULR No : TC858223000007018F

Report No	:	**EN23090860**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd.**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN23090860			
Sampling Location	:	Thangavelu Open well	**Sampling Date**	:	22 Sep 2023
Sample Condition	:	Fit for Analysis	**Sample Received on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Started on**	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units
1	pH at 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.17	-
2	Total Dissolved solids	APHA 23rd Edition Part 2540 C : 2017	2288	mg/L
3	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	5.40	No Unit
4	Chloride as Cl	APHA 23rd Edition Part 4500 Cl B : 2017	607	mg/L
5	Calcium as Ca	APHA 23rd Edition:3500 Ca B:2017	176	mg/L
6	Fluoride as F	APHA 23rd Edition Part 4500 F- D: 2017	1.0	mg/L
7	Magnesium as Mg	APHA 23rd Edition Part 3500 Mg B : 2017	39	mg/L
8	Total Alkalinity as CaCO3	IS 3025 (Part 23): 1986 RA : 2014	634	mg/L
9	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C: 2017	660	mg/L

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TC - 8582

TEST REPORT

Report No : EN23090860 **Report Date** : 10 Oct 2023

S.No	Test Name	Test Method	Results	Units
10	Oil and Grease	APHA B 23rd Edition Part 5520 :2017	BDL(DL:4.0)	mg/L
11	Iron as Fe	APHA 23rd Edition Part 3500 Fe B :2017	0.28	mg/L
12	Percent Sodium (%)	GL/EN/SOP/147	52.0	%
13	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	2.0	mg/L
14	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	219	mg/L
15	COD	APHA 23rd Edition Part 5220 B,C : 2017	45	mg/L
16	BOD at 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	13.30	mg/L
17	Colour	IS 3025 (Part 4): 1983 RA : 2017	05	Hazen
18	Odour	IS 3025 (Part 5): 2018	Agreeable	No Unit
19	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	1.40	NTU
20	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43): 1992 RA : 2014	BDL(DL:0.001)	mg/L
21	Cyanide as CN	IS 3025 (Part 27): 1986 RA : 2014	BDL(DL:0.01)	mg/L
22	Potassium as K	APHA 23rd Edition:3500 Cs B:2017	9.90	mg/L
23	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	7.10	mg/L
24	Nitrate Nitrogen as NO3	IS 3025 (Part 34): 1988 RA : 2014	BDL(DL:1.0)	mg/L
25	Mercury as Hg	EPA Method 200.8	BLQ(LOQ:0.0005)	mg/L
26	Total Arsenic as As	IS 3025 (Part-65):2014	BLQ(LOQ:0.002)	mg/L
27	Total Chromium as Cr	IS 3025 (Part-65):2014	0.005	mg/L

Note: BDL-Below Detection Limit, DL- Detection Limit

.....End of Report.....

Verified By

Authorized Signature

E. PRITHIVIRAJAN

LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1, I St Floor, Sri Jothi Complex Murugesan Street, Balaji Nagar, Arumbakkam Chennai 600106

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GLens Innovation Labs Pvt Ltd.

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TC - 8582

TEST REPORT

ULR No : TC858223000007019P

Report No	:	**EN23090861**	**Report Date**	:	**10 Dec 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN23060567			
Sampling Location	:	Periyasamy Open well Sakthi pallam	**Sampling Date**	:	22 Sep 2023
Sample Condition	:	Fit for Analysis	**Sample Received on**	:	26 Sep 2023
Sample Quantity	:	2 Litre	**Test Started on**	:	26 Sep 2023
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test result

S.No	Test Name	Test Method	Results	Units
1	pH at 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	6.76	-
2	Total Dissolved solids	APHA 23rd Edition Part 2540 C : 2017	3459	mg/L
3	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	7.50	No Unit
4	Chloride as Cl	APHA 23rd Edition Part 4500 Cl B : 2017	1164	mg/L
5	Calcium as Ca	APHA 23rd Edition:3500 Ca B:2017	281	mg/L
6	Fluoride as F	APHA 23rd Edition Part 4500 F- D: 2017	1.30	mg/L
7	Magnesium as Mg	APHA 23rd Edition Part 3500 Mg B : 2017	192	mg/L
8	Total Alkalinity as CaCO3	IS 3025 (Part 23): 1986 RA : 2014	554	mg/L
9	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C: 2017	1120	mg/L

Verified By

Authorized Signature
E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, 46/1, I St Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600 106

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TC - 8582

TEST REPORT

Report No : EN23090861 **Report Date** : 10 Oct 2023

S.No	Test Name	Test Method	Results	Units
10	Oil and Grease	APHA B 23rd Edition Part 5520 :2017	BDL(DL:4.0)	mg/L
11	Iron as Fe	APHA 23rd Edition Part 3500 Fe B :2017	0.17	mg/L
12	Percent Sodium (%)	GE/EN/SOP/147	53.0	%
13	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	22	mg/L
14	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	534	mg/L
15	COD	APHA 23rd Edition Part 5220 B,C : 2017	48	mg/L
16	BOD at 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	10.40	mg/L
17	Colour	IS 3025 (Part 4): 1983 RA : 2017	10	Hazen
18	Odour	IS 3025 (Part 5): 2018	Agreeable	No Unit
19	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	2.20	NTU
20	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43): 1992 RA : 2014	BDL(D):0.001)	mg/L
21	Cyanide as CN	IS 3025 (Part 27): 1986 RA : 2014	BDL(DL:0.01)	mg/L
22	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	2.90	mg/L
23	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	6.60	mg/L
24	Nitrate Nitrogen as NO3	IS 3025 (Part 34): 1988 RA : 2014	BDL(DL: 1.0)	mg/L
25	Mercury as Hg	EPA Method 200.8	BLQ(LOQ:0.0005)	mg/L
26	Total Arsenic as As	IS 3025 (Part-65):2014	BLQ(LOQ:0.002)	mg/L
27	Total Chromium as Cr	IS 3025 (Part-65):2014	0.0011	mg/L

Note: BDL-Below Detection Limit, DL- Detection Limit

.....End of Report.....

Verified By

Authorized Signature

E. PRITHIVIRAJAN

LAB MANAGER

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ANNEXURE VI

LATEST NABL ACCREDITED & MoEF&CC RECOGNIZED THIRD PARTY LAB - AOX AND TOC TEST REPORT

INTER OFFICE MEMORANDUM

From	To
AGM (Lab)	AGM (Env)

18.10.2023

AOX & TOC analysis report of final treated effluent water sample collected on **22.9.2023.**

S.No	Particulars	Unit	Results
1	Volume of effluent water discharged	m^3	14457
2	Paper Production	Tons	1230.86
3	AOX generated per ton of Paper	kg/t	0.03
4	TOC generated per ton of Paper	kg/t	0.85

Remarks: Norms: AOX -1kg / ton of paper (Maximum). TOC- No Norms.

R. S. Ramkumar
AGM (LAB)

CC:
ED (O)-FAC
GM (Energy, Pulp & SR)
File - 95

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 - 2017, CERTIFIED AS PER ISO 9001 2015 & ISO 45001 - 2018

TC - 8582

TEST REPORT

ULR No: TC858223000007010P

Report No	:	EN23090852	Report Date	:	10 Oct 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water			
Sample No	:	EN23090852	Sample Collected on	:	22 Sep 2023
Sample Identification	:	Secondary Clarifier Outlet of ETP	Sample Received on	:	26 Sep 2023
Sample Condition	:	Good	Test Started on	:	26 Sep 2023
Sample Quantity	:	5 Litre	Test Completed on	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	As per TNPCB Limit
Discipline: Chemical					
Group: Pollution and Environment					
1	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	23	mg/L	100
2	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	1085	mg/L	2100
3	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.94	-	5.5 to 9
4	Oil & Grease	APHA 23rd Edition Part 5520 B:2017	BDL(DL:4.0)	mg/L	10
5	Ammonical Nitrogen as NH_3	APHA 23rd Edition Part 4500 NH3 C : 2017	BDL(DL:1.0)	mg/L	50
6	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	15	mg/L	100
7	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	19	mg/L	30
8	Chemical Oxygen Demand (COD)	APHA 23rd Edition Part 5220 B,C : 2017	193	mg/L	250
9	Percent Sodium	CL/EN/SOP/147 Issue no.1 : 2019	43.0	%	-
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	613	mg/L	1000
11	Sulphate as SO_4	IS 3025 (Part 24): 2014	240	mg/L	1000
12	Sulphide as S	APHA 23rd Edition Part 4500 S– F : 2017	BDL(DL:1.0)	mg/L	2
13	Phenolic Compounds as C_6H_5OH	APHA 23rd Edition Part 5530 G : 2017	BDL(DL:0.001)	mg/L	1
14	Colour	Visual Examination	Brown	-	-
15	TOC	By Conversion	72	mg/L	-
16	AOX*	EPA 1653,5021 & 8260	2.90	mg/L	-

Note : BDL: Below Detection Limit, DL: Detection Limit
* Non NABL Parameter

Verified By

Authorized Signature
E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 St Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600106

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- Laboratory is not responsible for the authenticity of photocopied test results.

INTER OFFICE MEMORANDUM

From	To
AGM (Lab)	AGM (Env)

14.10.2023

AOX & TOC analysis report of fiual treated effluent watet sample collected on 23.8.2023

S.No	Particulars	Uuit	Results
1	Volume of effluent water discharged	m^3	27099
2	Paper Production	Tons	972.289
3	AOX generated per ton of Paper	kg/t	0.06
4	TOC generated per ton of Paper	kg/t	1.70

Remarks: Norms: AOX -1kg / ton of paper (Maximum). TOC- No Norms.

P.S. Sundaram
AGM (LAB)
14/10/23

CC:
ED (O)-FAC
GM (Energy, Pulp & SR)
File - 95

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858Z230000006367F

Report No	: EN23080777	Report Date	:	01 Sep 2023
Customer Name	: M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	: Kagithapuram, Karur – 639136.			
Sample Name	: Water			
Sample Description	: Waste Water			
Sample No	: EN23080777	Sample Collected on	:	23 Aug 2023
Sample Identification	: Secondary Clarifier Outlet of ETP	Sample Received on	:	24 Aug 2023
Sample Condition	: Good	Test Started on	:	25 Aug 2023
Sample Quantity	: 5 Litre	Test Completed on	:	30 Aug 2023
Sample Submission Type	: Collected by Lab Representative			

Test Results

Sl.No	Test Name	Test Method	Results	Units	As per TNPCB Limit
Discipline: Chemical					
Group: Pollution and Environment					
1	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	43	mg/L	100
2	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	1820	mg/L	2100
3	pH @ 25°C	APHA 23ed Edition Part 4500 H+ B : 2017	7.80	-	5.5 to 9.0
4	Oil & Grease	APHA 23rd Edition Part 5520 B:2017	BDL(DL:4.0)	mg/L	10
5	Ammonical Nitrogen as NH_3	APHA 23rd Edition Part 4500 NH3 C : 2017	BDL(DL:1.0)	mg/L	50
6	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	23	mg/L	100
7	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	21	mg/L	30
8	Chemical Oxygen Demand (COD)	APHA 23rd Edition Part 5220 B,C : 2017	164	mg/L	250
9	Percent Sodium	GL/EN/SOP/147 Issue no.1 : 2019	32.8	%	-
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	690	mg/L	1000
11	Sulphate as SO_4	IS 3025 (Part 24): 2014	343	mg/L	1000
12	Sulphide as S	APHA 23rd Edition Part 4500 S-- F : 2017	BDL(DL:1.0)	mg/L	2
13	Phenolic Compounds as C_6H_5OH	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L	1
14	Colour	Visual Examination	Brown	-	-
15	TOC	By Conversion	61.0	mg/L	-
16	AOX*	EPA 1653,5021 & 8260	2.10	mg/L	-

Note : BDL: Below Detection Limit, DL: Detection Limit
* Non NABL Parameter

Verified By

Authorized Signature
E. PRITHIVIRAJAN
LAB MANAGER

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INTER OFFICE MEMORANDUM

From	To
AGM (Lab)	AGM (Env)

17.8.2023

AOX & TOC analysis report of final treated effluent water sample collected on **18.7.2023**

S.No	Particulars	Unit	Results
1	Volume of effluent water discharged	m^3	27719
2	Paper Productiun	Tons	1658.6521
3	AOX generated per ton of Paper	kg/t	0.07
4	TOC generated per ton of Paper	kg/t	0.75

Remarks: Norms: AOX -1kg / ton of paper (Maximum). TOC- No Norms.

R. S. Tamilarasy
AGM (LAB)
18/8/23

CC:
ED (O)-FAC
GM (Energy, Pulp & SR)
File - 95

GLens Innovation Labs Pvt Ltd.

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TC - 8582

TEST REPORT

ULR No : TC858223000005511P

Report No	:	EN23070654	**Report Date**	:	27 July 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water			
Sample No	:	EN23070654	Sample Collected on	:	18 July 2023
Sample Identification	:	Secondary Clarifier Outlet of ETP	Sample Received on	:	21 July 2023
Sample Condition	:	Good	Test Started on	:	22 July 2023
Sample Quantity	:	5 Litre	Test Completed on	:	27 July 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	As per TNPCB Limit
1	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	45	mg/L	100
2	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	2051	mg/L	2100
3	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.69	-	5.5 to 9.0
4	Oil & Grease	APHA 23rd Edition Part 5520 B:2017	BDL(DL:4.0)	mg/L	10
5	Ammonical Nitrogen as NH_3	APHA 23rd Edition Part 4500 NH3 C : 2017	BDL(DL:1.0)	mg/L	50
6	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	21.7	mg/L	100
7	Biochemical Oxygen Demand @ 27°C	IS 3025 (Part 44): 1993 RA : 2014	22	mg/L	30
8	Chemical Oxygen Demand (COD)	APHA 23rd Edition Part 5220 B,C : 2017	202	mg/L	250
9	Percent Sodium	GL/EN/SOP/147 Issue no.1 : 2019	43.7	%	-
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	714	mg/L	1000
11	Sulphate as SO_4	IS 3025 (Part 24): 2014	499	mg/L	1000
12	Sulphide as S	APHA 23rd Edition Part 4500 S-- F : 2017	BDL(DL:1.0)	mg/L	2
13	Phenolic Compounds as C_6H_5OH	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L	1
14	Colour	Visual Examination	Brown	-	-
15	TOC	By Conversion	45.1	mg/L	-
16	AOX*	EPA 1653,5021 & 8260	4.23	mg/L	-

Note : BDL: Below Detection Limit, DL: Detection Limit
* Non NABL Parameter

Verified By

Authorized Signature
E. PRITHIVIRAJAN
LAB MANAGER

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INTER OFFICE MEMORANDUM

From	To
AGM (Lab)	AGM (Env)

20.07.2023

AOX & TOC analysis report of final treated effluent water sample collected on **14.6.2023.**

S.No	Particulars	Uuit	Results
1	Volume of effluent water discharged	m^3	27705
2	Paper Production	Tons	1070.78
3	AOX generated per ton of Paper	kg/t	0.08
4	TOC generated per ton of Paper	kg/t	2.03

Remarks: Norms: AOX -1kg / ton of paper (Maximum). TOC- No Norms.

AGM (LAB)

CC:

ED (O)-FAC
GM (Energy, Pulp & SR)
File - 95

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TC - 8582

TEST REPORT

ULR No : TC858223000004854P

Report Date : 26 June 2023

Report No	:	ENZ3060555			
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water	Sample Collected on	:	14 June 2023
Sample No	:	EN23060555	Sample Received on	:	16 June 2023
Sample Identification	:	Secondary Clarifiar Outlet of ETP	Test Started on	:	16 June 2023
Sample Condition	:	Good	Test Completed on	:	26 June 2023
Sample Quantity	:	5 Litre			
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	As per TNPCB
1	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	51.0	mg/L	100
2	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	1740	mg/L	2100
3	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.78	-	5.5 to 9.0
4	Oil & Grease	APHA 23rd Edition Part 5520 B:2017	BDL(DL:4.0)	mg/L	10
5	Ammonical Nitrogen as NH_3	APHA 23rd Edition Part 4500 NH3 C : 2017	BDL(DL:1.0)	mg/L	50
6	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg R : 2017	23	mg/L	100
7	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	21	mg/L	30
8	Chemical Oxygen Demand (COD)	APHA 23rd Edition Part 5220 B,C : 2017	210	mg/L	250
9	Percent Sodium	GL/EN/SOP/147 Issue no.1 : 2019	41.2	%	-
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	561	mg/L	1000
11	Sulphate as SO_4	IS 3025 (Part 24): 2014	346	mg/L	1000
12	Sulphine as S	APHA 23rd Edition Part 4500 S-- P : 2017	BDL(DL:1.0)	mg/L	2
13	Phenolic Compounds as C_6H_5OH	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L	1
14	Colour	Visual Examination	Yellow	-	-
15	TOC	By Conversion	78.7	mg/L	-
16	AOX*	EPA 1653,5021 & 8260	3.3	mg/L	-

Note : BDL: Below Detection Limit, DL: Detection Limit
* Non NABL Parameter

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

Verified By

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 St Floor , Sri Jothi Complex Murugesan Street , Balavinayagar Nagar, Arumbakkam Chennai 600106

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INTER OFFICE MEMORANDUM

From	To
AGM (Lab)	AGM (Env)

07.07.2023

AOX & TOC analysis report of final treated effluent water sample collected on **16.5.2023**

S.No	Particulars	Unit	Results
1	Volume of effluent water discharged	m^3	25192
2	Paper Production	Tons	1135.2583
3	AOX generated per ton of Paper	kg/t	0.09
4	TOC generated per ton of Paper	kg/t	1.48

Remarks: Norms: AOX -1kg / ton of paper (Maximum). TOC- No Norms.

R. S. Tamilarasan
AGM (LAB)
08/7/23

CC:
ED (O)
CGM (Plantation, R&D and SO)
GM (Energy, Pulp & SR)
File - 95

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858223000003780P

Report No	:	**EN23051317**	**Report Date**	:	**26 May 2023**
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	**Water**			
Sample Description	:	**Waste Water**			
Sample No	:	**EN23051317**	Sample Collected on	:	16 May 2023
Sample Identification	:	Secondary Clarifier Outlet of ETP	Sample Received on	:	18 May 2023
Sample Condition	:	Good	Test Started on	:	19 May 2023
Sample Quantity	:	5 Litre	Test Completed on	:	26 May 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	As per TNPCB
1	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	44	mg/L	100
2	Total Dissolved Solids (Inorgaoic)	APHA 23rd Edition Part 2540 C : 2017	2030	mg/L	2100
3	pH @ 25°C	APNA 23rd Edition Part 4500 H+ B : 2017	7.63	-	5.5 to 9.0
4	Oil & Grease	APHA 23rd Edition Part 5520 B:2017	BDL(DL:4.0)	mg/L	10
5	Ammonical Nitrogen as NH_3	APHA 23rd Edition Part 4500 NH3 C : 2017	BDL(DL:1.0)	mg/L	50
6	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	17.7	mg/L	100
7	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	24	mg/L	30
8	Chemical Oxygen Demand (COD)	APHA 23rd Edition Part 5220 B,C : 2017	178	mg/L	250
9	Percent Sodium	GL/EN/SOP/147 Issue no.1 : 2019	44.9	%	-
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	673	mg/L	1000
11	Sulphate as SO_4	IS 3025 (Part 24): 2014	491	mg/L	1000
12	Sulphide as S	APHA 23rd Edition Part 4500 S– F : 2017	BDL(DL:1.0)	mg/L	2
13	Phenolic Compounds as C_6H_5OH	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L	1
14	Colour	Visual Examination	Yellow	-	-
15	TOC	By Conversion	66.8	mg/L	-
16	AOX*	EPA 1653,5021 & 8260	3.9	mg/L	-

Note : BDL: Below Detection Limit, DL: Detection Limit

* Non NABL Parameter

Verified By

Authorized Signature

E. PRITHIVIRAJAN

LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 St Floor , Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600106

Terms and Conditions;

* The Test Results Relate only to the items tested.
* The Test Report Shall not be reproduced in full or part without the written approval of Glens.
* The test items will not be retained for more than 15 days from the date of issue of test report excepts in the case as required by the application regulations.
* The Laboratory's Responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
*A Satisfactory test report in no way implies that the product so tested is approved by NABL.
* Laboratory is not responsible for the authenticity of photocopied test reports.

INTER OFFICE MEMORANDUM

From	To
SM (Lab)	DGM (Env)

18.5.2023

Thro' DGM (R&D and QC)

AOX & TOC analysis report of final treated effluent water sample collected on **25.4.2023**

S.No	Particulars	Unit	Results
1	Volume of effluent water discharged	m^3	27093
2	Paper Production	Tons	1331.60
3	AOX generated per ton of Paper	kg/t	0.07
4	TOC generated per ton of Paper	kg/t	1.24

Remarks: Norms: AOX -1kg / ton of paper (Maximum). TOC- No Norms.

SM (Lab)

CC:

ED (O)
CGM (Production & Project Coordination)
CGM (Plantation, R&D and SO)
AGM (ENV)
File - 95

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858223000003338P

Report No	:	**EN23050724**	**Report Date**	:	**08 May 2023**
Sample submission Type	:	**Collected by Lab Representative**			
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Water			
Sample Description	:	Waste Water			
Sample No	:	EN23050724	Sample Collected on	:	25 April 2023
Sample Identification	:	Secondary Clarifier Outlet of ETP	Sample Received on	:	02 May 2023
Sample Condition	:	Fit for Analysis	Test Started on	:	03 May 2023
Sample Quantity	:	5 Litre	Test Completed on	:	04 May 2023

Test Results

Sl.No	Test Name	Test Method	Results	Units	As per TNPCB
1	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	38	mg/L	100
2	Total Dissolved Solids (Inorganic)	APHA 23rd Edition Part 2540 C : 2017	2008	mg/L	2100
3	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.81	-	5.5 to 9.0
4	Oil & Grease	APHA 23rd Edition Part 5520 B:2017	UDL(DL:4.0)	mg/L	10
5	Ammonical Nitrogen as NH_3	APHA 23rd Edition Part 4500 NH3 C : 2017	BDL(DL:1.0)	mg/L	50
6	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	19.0	mg/L	100
7	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44):1993-RA:2014	26	mg/L	30
8	Chemical Oxygen Demand (COD)	APHA 23rd Edition Part 5220 B,C : 2017	211	mg/L	250
9	Percent Sodium	GL/EN/SOP/147 Issue no.1 : 2019	46.0	%	-
10	Chloride as Cl	APHA 23rd Edition Part 4500 Cl - B : 2017	695	mg/L	1000
11	Sulphate as SO_4	IS 3025 (Part 24): 2014	454	mg/L	1000
12	Sulphide as S	APHA 23rd Edition Part 4500 S-- P : 2017	BDL(DL:1.0)	mg/L	2
13	Phenolic Compounds as C_6H_5OH	APHA 23rd Edition Part 5530 C : 2017	BDL(DL:0.001)	mg/L	1
14	Colour	Visual Examination	Yellow	-	-
15	TOC	By Conversion	60.8	mg/L	-
16	AOX*	EPA 1653,5021 & 8260	3.3	mg/L	-

Note : BDL: Below Detection Limit, DL: Detection Limit

* Non NABL Parameter

Verified by

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

#6/1,1st Floor, Sri Jothi Complex, Murugesan Street, Balavinayagar Nagar,Arumbakkam, Chennai – 600106.

Terms and Conditions:
* The Test Results Relate only to the items tested. * The Test Report Shall not be reproduced in full or part without the written approval of Glens. * The test items will not be retained for more than 15 days from the date of issue of test report except in the case as required by the application regulations. * The Laboratory's Responsibility under this report is limited to proven willful negligence and will in no case be more than the invoiced amount. *A Satisfactory test report in no way implies that the product so tested is approved by NABL. * Laboratory is not responsible for the authenticity of photocopied test reports.

ANNEXURE VII

COMPREHENSIVE WATER MANAGEMENT PLAN

WATER AND WASTE WATER RECYCLING MANAGEMENT IN TNPL

TNPL has completed Mill Development Plan (MDP) in May'08 with a capital expenditure of Rs.612 crores and is successfully operating to achieve more environmental friendly operational performance of the mill by adopting *state of the art* Elemental Chlorine Free bleaching technique and simultaneously accomplished the objective of modernization of the process technology with a marginal increase in production capacity. Further, TNPL has implemented Mill Expansion Plan (MEP) by installing a third Paper Machine to enhance the production capacity from 245,000 tpa to 400,000 tpa and reduced specific water consumption.

The mill has implemented the following major water conservation (To reduce waste water generation) and waste water recycling (To reduce TDS in Waste water) projects to improve the overall environmental performance of the mill operations.

To reduce TDS in Waste water

- Recycling of around 1800M^3 EOP alkaline filtrate in post Oxygen washer in hardwood fiber line operations by close looping Extraction stage effluent from hardwood into the brown loop to reduce TDS in the waste water.
- Return of soft water back to soft water plant after usage in NIPCO hydraulic system to reduce soft water re-generation.
- Recycling any chemical Bagasse fibre line EOP filtration in the post oxygen press to close the brown loop to reduce TDS in Waste water.

To reduce waste water generation

- Polishing excess clear filtrate of PM#1 using Algas filter.
- Recycling of around 9000 M^3 Paper Machine Effluent after clarification in raw material preparation
- Recovery of steam condensate from chlorine vaporiser and pumping to cooling tower
- Use of excess hot water from hardwood fiber line for pulp washing in Chemical bagasse ECF bleach plant.
- Recovery of pump seal cooling water and pumping to cooling tower
- Re-circulation of chlorine di-oxide generator cooling process water to cooling tower
- Recovery of dilution air compressor water and pumping to cooling tower
- Re-circulation of New Hardwood fibreline Hydraulic cooling water to water treatment plant
- Replacing of freshwater with cooling water for Recovery Boiler-3 feed pump cooling system
- Re-circulation of the chlorine di-oxide plant transformer rectifier cooling water to cooling tower
- Reusing of white liquor clariant disc (WLCD) compressor sealing water and condenser cooling water
- Use of process condensate in brown stock washing in bagasse pulping line.
- Replacing of freshwater with cooling water for Recovery Boiler-3 spout cooling system
- Re-circulation of CB-ECF plant Hydraulic cooling water within the system

- Replacement of conventional drum washers with twin roll presses to reduce water consumption
- Adaptation of improved technologies to re-use super clear filtrate from Paper Machine #3 backwater to minimize the fresh water usage.
- Recycling of Pick-up Uhle Box Water to White water chest/seal water tank to minimize make up in Fresh water in PM#2
- Use of PM/c back water for cationic starch cooking instead of fresh water
- Diversion of Algas filter water to culvert pit make up to avoid fresh water make up in PM#1.
- Replacement of fresh water with EOP filtrate for Optimization of fresh water for scrubber dilution in HW street
- Replacement of hot water with EOP filtrate in Post Oxygen Washer (POW) 2 Press in Chemical Bagasse street.
- Replacement of fresh water with Machine backwater for wet lap #2 and #3 usage and reuse of Wetlap # 2 filtrate in De-inking plant (through Wetlap # 3)
- Replacement of fresh water / process condensate with Back Water Clarification System water in flushing box at digester in Chemical Bagasse street
- Buffering Wetlap 1 Filtrate / PM/c back water in Mechanical Bagasse Pulp tower and reuse at HW
- final tower stand pipe dilution Replacement of fresh water with Machine backwater for wet lap #1 usage
- Diversion of Algas filter water to culvert pit make up to avoid fresh water make up in PM#1.
- Recycling of Uhle Box Water to White water chest to minimize make up in Fresh water in PM#2
- Use of PM/c back water for cationic starch cooking instead of fresh water
- Online dilution for A-PAM and C-PAM (RDA) in Paper Machine
- Return of water after usage from Alfa-2 evaporator and RB#3 to water treatment plant
- Recycling of water after usage from Alfa-1 evaporator to chemical bagasse plant
- Usage of excess process condensate in causticizing pumps and Alfa 1 evaporator pumps
- Diversion of algas filter drain to WW-2 PM#1.
- Installation of Water collection tray for bottom press felt in PM#1
- Utilization of Machine backwater for floor cleaning inPM#1,2 &3
- Replacement of high pressure shower nozzle size (0.7 mm from 1.0 mm) of Bottom & Top press fabrics in PM#1
- Diversion of tertiary screen reject to WW2 by processing through vibrating screen in PM#1
- Collection and diversion of bottom press felt high pressure shower water to vacuum pump sever pit in PM#2
- Replacement of fresh water with machine back water for cationic starch preparation in PM#3 Replacement of fresh water with machine back water for online dilution of A-PAM & C-PAM in PM#3 Collection of filler unloading and dosing pump seal water and transfer to warm water tank at CCK (PM#3)

- Diversion of excess cloudy filtrate over flow water to clear chest in PM#3
- Replacement of fresh water with machine back water to dilute cationic starch slurry at CCK
- Replacement of existing 0.9 & 0.7 mm H.P shower nozzles size with 0.7 & 0.6 mm for forming and press fabric at PM#3
- Replacement of fresh water with machine back water for dispersing Machine discharge pump and line flushing at CCK
- Replacement of fresh water with machine back water for WPCC/WGCC slurry unloading pump and line flushing at CCK
- Replacement of fresh water with machine back for save- all cleaning in paper machine#3.
- The sulphide stripping plant is operating continuously and the strip-off gas is incinerated in lime kiln along with non – condensable gases. After removal of sulphide from the Evaporator Vacuum Pump seal water of 1000 KLD is recycled to process conserving an equivalent amount of fresh water.

In order to further reduce water consumption, a dedicated team of executives has been formed with members drawn from various departments. The team is identifying and implementing various water conservations schemes without affecting quality of product and treated effluent.

These steps have paved way to reduce

- Overall water consumption from 70,000 M3/day during 2007 to about 40,000M3/day during 2016-17 even after increasing the paper production from 205000 tpa to 400000 tpa and in house pulp production from 165000 tpa to 264000 tpa.
- Specific water consumption from 102 M3/Ton of machine production during 2007 to about 27 M^3/Ton of machine production during Apr'23 to Sep'23.

ANNEXURE VIII

COPIES OF FLY ASH DETAILS SUBMITTED TO O/O. JCEE, TNPCB, SALEM

TNPL

TAMILNADU NEWSPRINT AND PAPERS LIMITED

ENV/02/23
Octnber 9, 2023

The Joint Chief Environmental Engineer (Monitoring),
ND: 9, 4th cross strect, Brindhavan road, Fairlands,
Tamilnadu Pollution Control Board (TNPCB),
Salem - 636016

Sir,

Sub: TNPL Captive Power Plant – Disposal of Fly Ash - Submission of Action Taken Report against the instruction issued- reg.

Ref: Letter No. JCEE (M)/TNPCB/F.67/KARUR/TNPL-CPP/2019 dated 06.11.2019.

We hereby acknowledge the receipt of the letter cited under reference.

It is submitted that the fly ash quantity generated from the TNPL Captive Power Plant are being utilized in the Cement Production at TNPL Mini Cement Plant (LSFM) unit details for the period between 01/07/2023 and 30/09/2023 is submitted hereunder for your kind information.

All values are in MT

Period	Fly ash opening Balance	Fly ash generation	Fly ash utilized for TNPL Cement Production	Fly ash disposed to outside agencies, if any	Fly ash Closing Balance
01/07/2023 to 31/07/2023	426.26	2811	2840	0	397.26
01/08/2023 to 31/08/2023	397.26	3117	3199	0	315.26
01/09/2023 to 30/09/2023	315.26	3409	3366	0	358.26

It is pertinent to note that the fly ash generated during last three months were utilized only for Cement Production in compliance to the directions issued vide reference cited above.

This is for your kind information and records.

Thanking you.

Yours faithfully,
for M/s Tamil Nadu Newsprint and Papers Limited,

09/10/2023

Assistant General Manager (Environment)

TNPL

TAMILNADU NEWSPRINT AND PAPERS LIMITED

ENV/02/23
July 7, 2023

The Joint Chief Environmental Engineer (Monitoring),
No: 9, 4th cross street, Brindhavan road, Fairlands,
Tamilnadu Pollution Control Board (TNPCB),
Salem - 636016

Sir,

Sub: TNPL Captive Power Plant – Disposal of Fly Ash - Submission of Action Taken Repert against the instruction issued- reg.

Ref: Letter No. JCEE (M)/TNPCB/F.67/KARUR/TNPL-CPP/2019 dated 06.11.2019.

We hereby acknowledge the receipt of tha letter cited under reference.

It is submitted that the fly ash quantity generated from the TNPL Captive Power Plant are being utilized in the Cement Production at TNPL Mini Cement Plant (LSFM) unit details for the period between 01/04/2023 and 30/06/2023 is submitted hereunder for your kind information.

All values are in MT

Period	Fly ash opening Balance	Fly ash generation	Fly ash utilized for TNPL Cemeat Production	Fly ash disposed to outside agencies, if any	Fly ash Closing Balance
01/04/2023 to 30/04/2023	228.52	2174.000	2030.74	0	371.78
01/05/2023 to 31/05/2023	371.78	2136.00	2006.91	0	500.87
01/06/2023 to 30/06/2023	500.87	2121.00	2195.61	0	426.26

It is pertinent to note that the fly ash generated during last three months were utilizad only for Cement Production in compliance to the dimctions issued vide reference cited above.

This is for your kind information and records.

Thanking you.

Yours faithfully,
for M/s Tamil Nedu Newsprint and Papers Limited,

Assistant General Manager (Environment)

ANNEXURE IX

GREEN BELT DETAILS

GREEN BELT DEVELOPMENT AT TNPL - 2023-24

ABSTRACT

SL. NO	LOCATION	TOTAL AREA. IN HA	AREA TO BE COVERED UNDER GREEN COVER (33%) IN HA	GREEN COVER DEVELOPED IN HA	NO. OF TREES DEVELOPED	% OF GREEN BELT VS TOTAL AREA
1	MAIN PLANT	83.56	27.57 (33%)	32.11	103304	38.42%
2	CAPTIVE POWER PLANT	38.16	12.59(33%)	16.17	45503	42.37%
	TOTAL	**121.72**	**40.16 (33%)**	**48.28**	**148807**	**40.39%**

MAIN PLANT

SL.NO	Name of the Tree	No.of Trees
1	Peltophorum ferrugineum(Copper pod tree)	3095
2	Bahinia purpurea (Orchid tree)	893
3	Casia siamea	65
4	Pongamia pinnata (Pungam)	3990
5	Porasus flabelifer (Palmyrah)	18
6	Caryota urens (Fish tail palm)	9
7	Tecoma stans	26
8	Samania saman (Rain tree)	208
9	Mangifera indica (Mango)	3
10	Cocos neusifera (Coconut)	116
11	Terminalia catapa (Badam)	100
12	Ficus religiosa (Peepal)	10
13	Lagerstroemia speciosa (Pride of India)	20
14	Azadirachta indica (Neem)	5600
15	Polyalthia longifolia (Ashoka)	300
16	Syzizium cumini (Naval)	25
17	Tabebuia argentea	34
18	Acacia auriculiformis(Australian wattle)	1000
19	Eucalyptus sps	25151
20	Leucaena leucocephala (Subabul)	2000
21	Tamarindus indica (Tamarind)	90
22	Spthodea companulata (African tulip tree)	20
23	Albizzia lebbek (Vagai)	300
24	Sterculia foetida	3
25	Delonix regia (Gulmohar)	300
26	Casuarina equisetifolia	48480
27	Bamboosa sps (Bamboo)	200
28	Dalbergia sissoo	9622
29	Ailanthus excelsa	102
30	Glaricidia maculata	129
31	Kaya	103
32	Melia dubia (Malai vembu)	500
33	Swietenia mahagoni	223
34	Tectona grandis (Teak)	48
35	Callophyllum innophyllum	32
36	Terminalia arjuna	60
37	Singapore cherry	316
38	Millingtonia hortensis (Tree jasmine)	60
39	Madhuca latifolia (Iluppai)	10
40	Ficus bengalensis (Banyan)	3
41	Mimosops elengi (Makilam)	10
42	Cassia fistula (Golden shower)	10
43	Achrus sapota (Sapota)	10
44	Phyllanthus emblica (Amla)	10
	Total	**103304**

CAPTIVE POWER PLANT

SL.NO	Name of the Tree	No.of Trees
1	Peltophorum ferrugineum(Copper pod tree)	2200
2	Bahinia purpurea (Orchid tree)	264
3	Pongamia pinnata (Pungam)	1621
4	Samania saman (Rain tree)	100
5	Terminalia catapa (Badam)	60
6	Ficus religiosa (Peepal)	7
7	Azadirachta indica (Neem)	4828
8	Polyalthia longifolia (Ashoka)	24
9	Syzizium cumini (Naval)	15
10	Acacia auriculiformis(Australian wattle)	318
11	Eucalyptus sps	10100
12	Leucaena leucocephala (Subabul)	1164
13	Tamarindus indica (Tamarind)	30
14	Albizzia lebbek (Vagai)	164
15	Delonix regia (Gulmohar)	82
16	Casuarina equisetifolia	21080
17	Bamboosa sps (Bamboo)	106
18	Dalbergia sissoo	2696
19	Melia dubia (Malai vembu)	380
20	Singapore cherry	238
21	Millingtonia hortensis (Tree jasmine)	24
22	Ficus bengalensis (Banyan)	2
	Total	**45503**


Kayal aquarium
TNPL
TOWNSHIP
TNPL
Kagithapuram
கா கி த பு ர ம்
Alagapuri
அழகாபுரி
Tamilnadu Newsprint
And Papers Limited
TNPL
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1003
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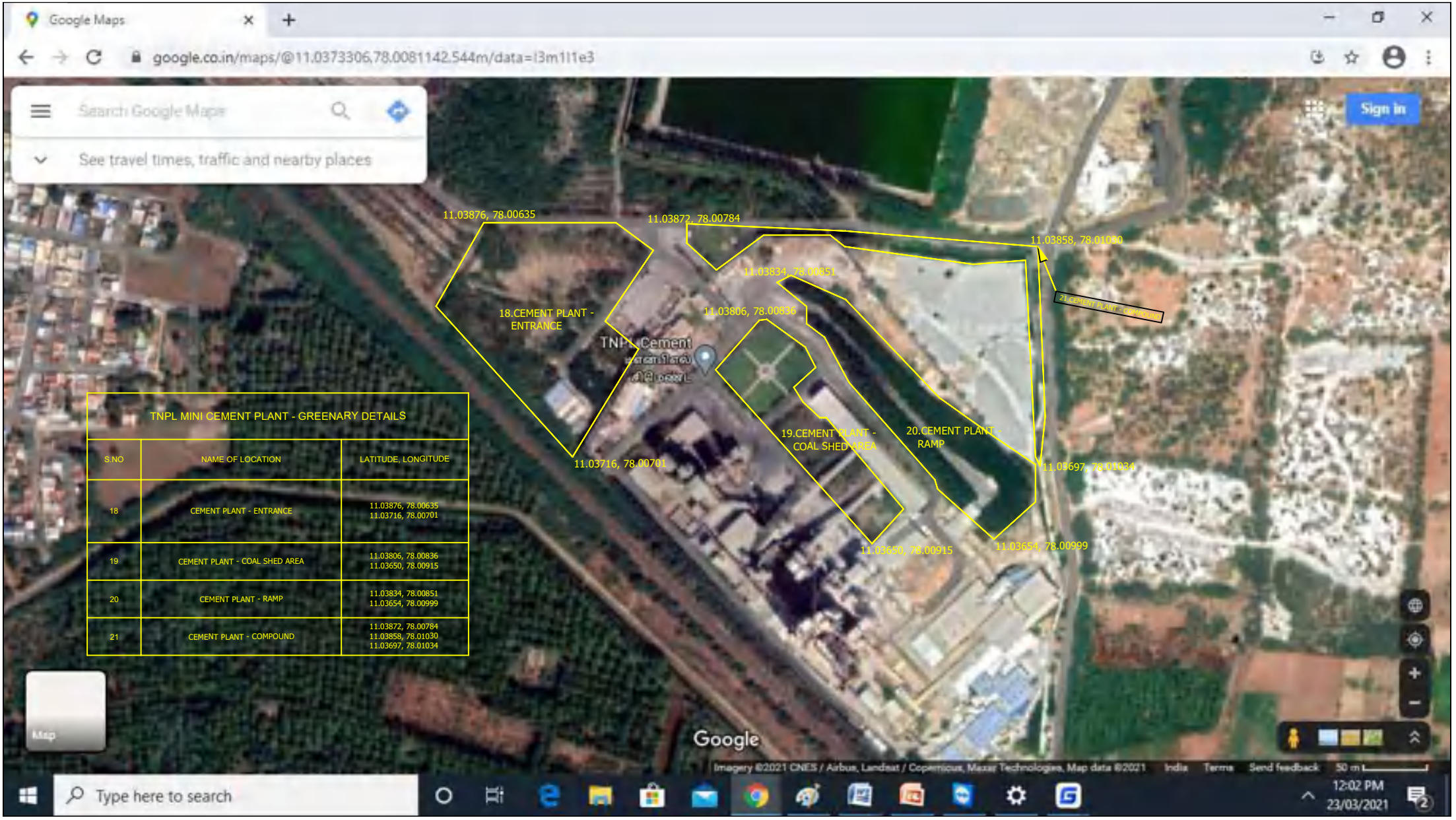
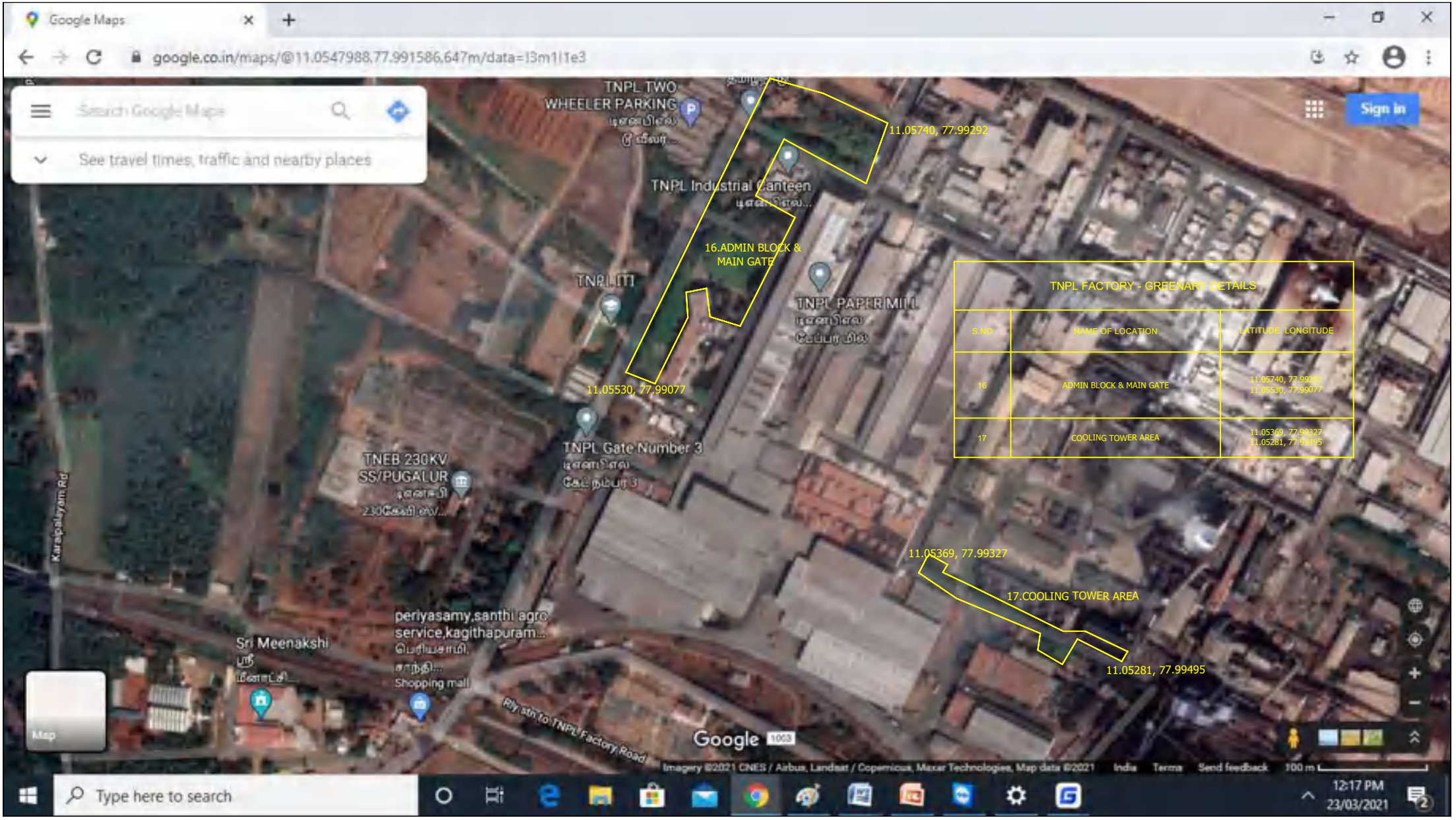
Bagavathiyamman
Temple
Government nursary
and primary school
Sri Sakthi
Vinayagar Temple
Google

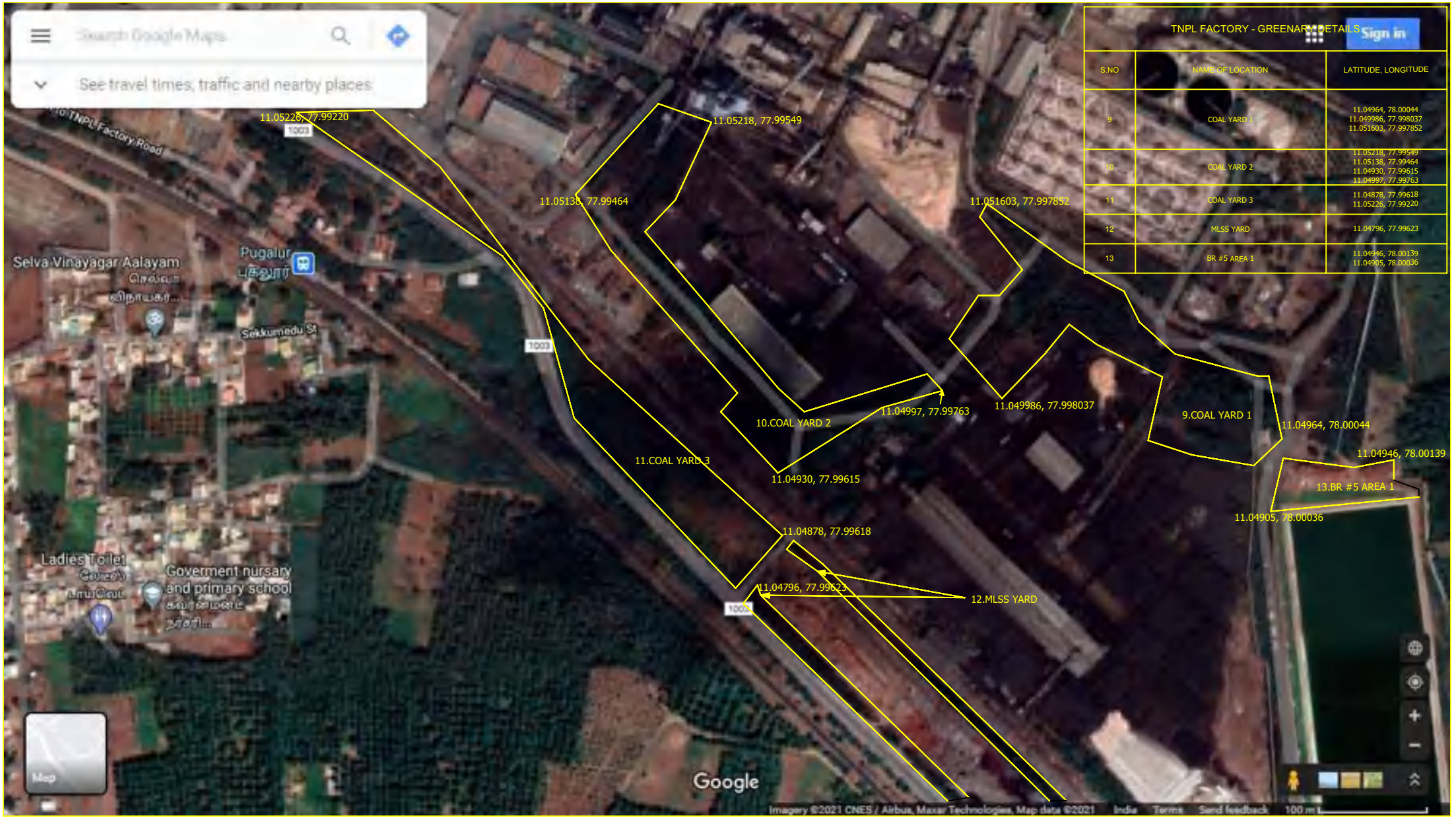


TNPL MINI CEMENT PLANT - GREENARY DETAILS

S.NO	NAME OF LOCATION	LATITUDE, LONGITUDE
18	CEMENT PLANT - ENTRANCE	11.03876, 78.00635 11.03716, 78.00701
19	CEMENT PLANT - COAL SHED AREA	11.03806, 78.00836 11.03650, 78.00915
20	CEMENT PLANT - RAMP	11.03834, 78.00851 11.03654, 78.00999
21	CEMENT PLANT - COMPOUND	11.03872, 78.00784 11.03858, 78.01030 11.03697, 78.01034

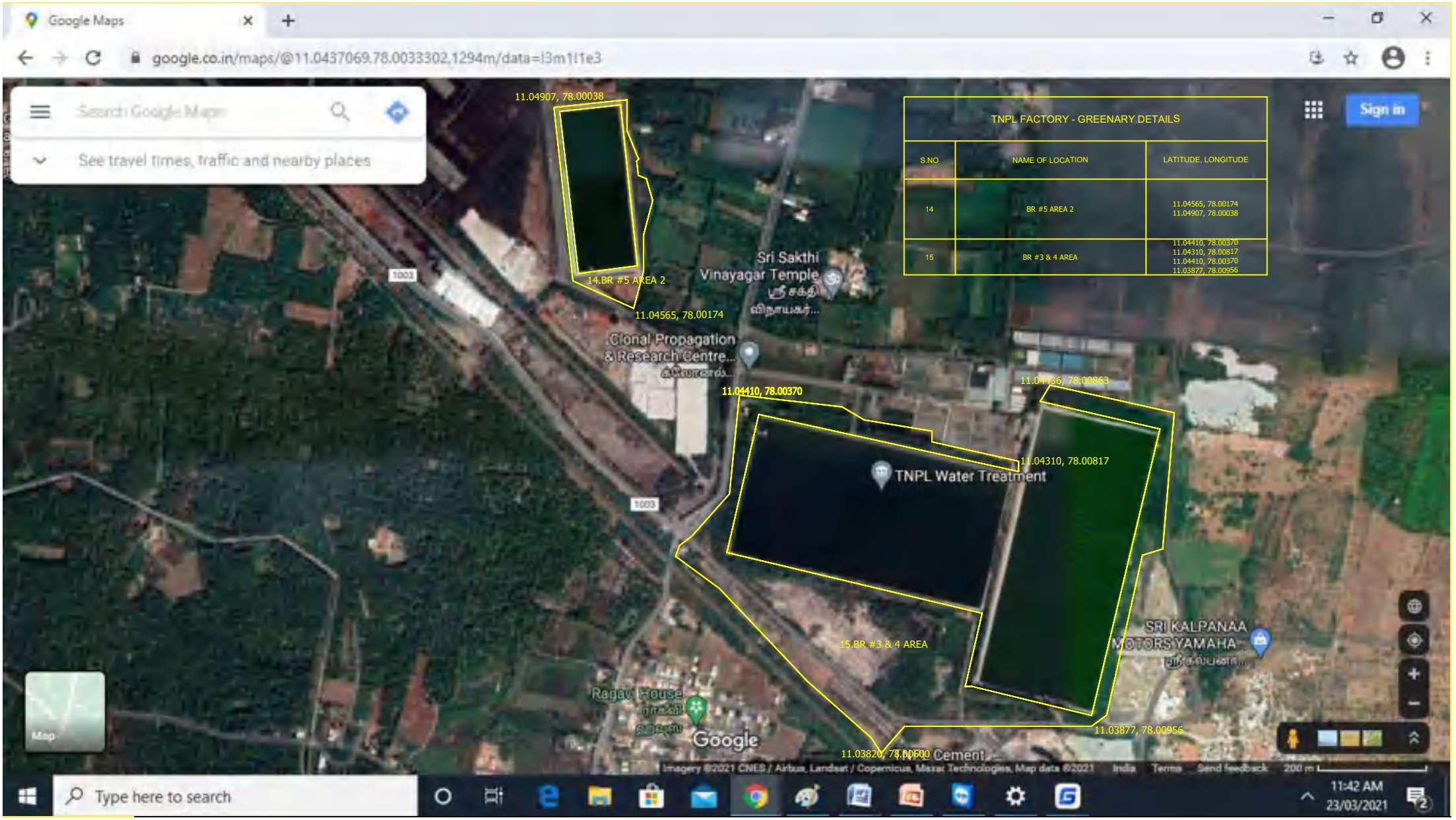


TNPL FACTORY - GREENARY DETAILS		
S.NO	NAME OF LOCATION	LATITUDE, LONGITUDE
16	ADMIN BLOCK & MAIN GATE	11.05740, 77.99292 11.05530, 77.99077
17	COOLING TOWER AREA	11.05369, 77.99327 11.05281, 77.99495



TNPL FACTORY - GREENARY DETAILS

S.NO	NAME OF LOCATION	LATITUDE, LONGITUDE
9	COAL YARD 1	11.04964, 78.00044 11.049986, 77.998037 11.051603, 77.997852
10	COAL YARD 2	11.05218, 77.99549 11.05138, 77.99464 11.04930, 77.99615 11.04997, 77.99763
11	COAL YARD 3	11.04878, 77.99618 11.05226, 77.99220
12	MLSS YARD	11.04796, 77.99623
13	BR #5 AREA 1	11.04946, 78.00139 11.04905, 78.00036



TNPL FACTORY - GREENARY DETAILS		
S.NO	NAME OF LOCATION	LATITUDE, LONGITUDE
14	BR #5 AREA 2	11.04565, 78.00174 11.04907, 78.00038
15	BR #3 & 4 AREA	11.04410, 78.00370 11.04310, 78.00817 11.04410, 78.00370 11.03877, 78.00956

TNPL FACTORY - GREENARY DETAILS		
S.NO	NAME OF LOCATION	LATITUDE, LONGITUDE
4	BR#2 - ETP AREA	11.056669, 78.001924 11.051862, 78.001927
5	ASL LAGOON - ETP AREA	11.051279, 78.001232 11.049440, 78.001060 11.052612, 77.997906
6	CLARIFIER - ETP AREA	11.052104, 78.001451 11.052462, 77.999145 11.051138, 77.999628
7	ANAEROBIC LAGOON	11.056921, 77.999947 11.054034, 77.998891
8	PRIMARY CLARIFIER #2 AREA	11.054268, 77.999256 11.053087, 77.999682 11.055362, 77.999030

ANNEXURE X

OCCUPATIONAL HEALTH AND SAFETY REPORT

OCCUPATIONAL HEALTH CENTRE

Tamil Nadu Newsprint and Papers Limited (TNPL) take great care of health of its employees and their dependants. Various schemes in vogue stand a testimony to the care and concern shown by the company towards the health of its employees and their dependants.

OCCUPATIONAL HEALTH CENTRE (OHC):-

TNPL has an Occupational Health Centre manned by qualified and experienced four Medical Officers, paramedical staff of two nurses, two pharmacists, one ANM, two male attenders, three female attenders and eleven Ambulance drivers.

The scope of the TNPL Occupational Health Centre includes Preventing occupational hazards at work, protecting workers against hazards at work, help in adapting work and the work environment to the capabilities of the worker, promoting the physical, mental and social well-being of workers and rehabilitation of accidental occupational injuries.

The main objective of the TNPL OHC are,

- To provide medical treatment and support in case of an emergency illness or accident.
- To monitor, manage and modify any adverse health effects which may occur at the workplace.
- To promote good health at the workplace.
- To plan and execute health education and awareness programmes for employees.

The major activities at TNPL are,

- Medical surveillance through measures such as periodical medical check-ups.
- Pre-employment medical check-ups.
- Medical treatment for illness and accidents.
- Conducting health education programmes.
- Providing first aid and other related training to the employees.
- Promoting health awareness and wellness measures among employees.

The OHC renders free Medical treatment and guidance to the employees and their family members. An Amount of Rs. 13.00 lakhs per annum is spent towards medicines. Apart from the above facility, Specialists from various hospitals visit OHC on Sundays. Ambulance facility is extended to the employees to provide emergency treatment. TNPL conducts medical camp every month to attend to the health needs of the neighborhood population. Special medical camps in various specialties are conducted once in 3 months.

MEDICAL EQUIPMENTS:

Oxygenator:

Oxygenator is equipment which supplies pure oxygen from the normal atmospheric air. It works on 230v AC power. It is useful equipment for those patients suffering from Asthma, other Bronchial diseases. It's a good replacement for the oxygen cylinders. It need not be refilled and the same is maintained well.

T.N.P.L. Occupational Health Centre has an latest up to date model of Oxygenator, which is used for patients with Respiratory Difficulty.

Nebulizers are commonly used for treatment of cystic fibrosis, asthma, COPD and other respiratory diseases. Nebulizers use oxygen, compressed air or ultrasonic power to break up medical solutions and suspensions into small aerosol droplets that can be directly inhaled from the mouthpiece of the device.

T.N.P.L. Occupational Health centre has 2 latest versions of Nebulizers which render great service in treating Respiratory problems.

Suction Apparatus:

Suction Apparatus is a device for removing liquids or gases by suction, especially an instrument that uses suction to remove substances, such as mucus or serum, from a body cavity. It is used to create a partial vacuum. A suction machine helps to remove secretions and mucus from the airways. In addition, a suction machine may be needed when a patient has moist cough, or unable to effectively clear secretions from the throat, or are having difficulty in breathing or feel that they cannot get enough air.
The Occupational Health Centre is well equipped with 2 Suction Apparatus to handle any kind of emergencies.

Electro Cardiogram Machine:

ECG is used to measure the rate and regularity of heartbeats as well as the size and position of the chambers, the presence of any damage to the heart, and the effects of drugs or devices used to regulate the heart.

The Occupational Health Centre in T.N.P.L. has 2 latest model Electro Cardiogram Machines, which helps immensely in the early detection of Cardiac Diseases among the employees and their families.

Microscope:

A **microscope** is an instrument used to see objects that are too small for the naked eye. This is an optical instrument containing one or more lenses producing an enlarged image of a sample placed in the focal plane.
A latest model Microscope is used in the T.N.P.L. OHC, for various sample identifications.

Traction Apparatus:

Traction is applied to the cervical or lumber spine through harnesses fastened to the head or pelvic area. This widens the inter-vertebral spaces which relieves nerve root compression by the inter-vertebral discs. The compression of the nerve roots causes sensations of pain, burning, tingling in the neck, shoulders and arms, or in the back, buttocks, legs and feet. Traction force is determined by the patient's tolerance.

T.N.P.L. OHC has an Electronic Traction apparatus that is used to treat muscular skeletal disorders.

Ophthalmoscope:

Ophthalmoscopy (fundscopy or fundoscopy) is a test that allows a health professional to see inside the fundus of the eye and other structures using an ophthalmoscope (funduscope). It is done as part of an eye examination and this is used as a part of a routine physical examination It is crucial in determining the health of the retina and the vitreous humor.

The Occupational Health Centre has an Ophthalmoscope that is used in early detection of Diseases like Hypertension and Diabetes Mellitus.

Otoscope:

An Otoscope or auriscope is a medical device which is used to look into the ears. Health care provides use otoscopes to screen for illness during regular check-ups and also for investigating the symptoms involving the ears. With an otoscope, it is possible to see the outer ear and middle ear. The Otoscope in the Occupational Health Centre is used in ailments like, Foregin Body in Ear etc.

Automated External Defibrillator (AED):

A Defibrillator is a device that gives a high energy electric shock to the heart of the patient who is in Cardiac arrest. This high energy shock is called defibrillation and it's an essential part in trying to save the life of the patient, who is in Cardiac Arrest.

Ambulance:

TNPL Occupational Health Centre has 3 state of the art Ambulance vehicles which render yeoman service to the working community for transportation of sick and injured persons for treatment.

Cyclotron:

A Cyclotron is a type of particle accelerator. It is used in blood samples preparations.

TNPL Occupational Health Centre has to its credit a wide range of Drugs, Suture materials, emergency medicines (including anti-venom) for managing any kind Industrial Accidents, and other medicines for Clinical Emergencies and regular Outpatient Treatment.

Medicine Storage room:

The OHC has a well stocked Medicine Storage room.

A dedicated team of Doctors, staff nurses, pharmacists and paramedical staff, ensure the efficient and correct, timely health management and treatment is provided at the T.N.P.L. Occupational Health Centre, round the clock.

SPECIALIST DOCTORS VISIT TO TNPL OCCUPATIONAL HEALTH CENTRE:

For the benefit of TNPL Employees and their families, every Sunday forenoon a Specialist Doctor visits the Premise of Occupational Health Centre. The TNPL Employees and their families avail this opportunity to have their health examined. The names and their field of specialist are furnished below:

01. Dr. P. Ramesh, M.S.	-	Ophthalmic Surgeon
02. Dr. D.M.T. Saravanan, MBBS, MRCP (UK).	-	Cardiologist
03. Dr. R. Karuppaiah, M.S.	-	Orthopaedic Surgeon
04. Dr. K. Ramachandran, B.D.S.	-	Dental Surgeon
05. Dr. D. Gurusamy Nachimuthu, M.S.	-	Orthopaedic Surgeon
06. Dr. S. Kiruthika, MBBS, DDVL.	-	Dermatologist

07. Dr. V. Shankar, M.D.D.M.	-	Gastro Entero Logist
08. Dr. S. Shankar, M.S.	-	General Surgeon
09. Dr. G. Sathish, M.S.	-	Orthopaedic Surgeon
10. Dr. K.S. Murugesan, D.D.	-	Dermatologist
11. Dr. C. Balakrishnan, M.D.	-	General Physician
12. Dr. R. Hariprasad,M.D.	-	Pulmonologist
14.Dr.K.Madheswaran,M.Ch (Neuro)	-	Neuro Surgeon

Monthly Free Rural Medical Camps & Health Awareness:

The most important reason why the development of rural life in India is excessively slow is because of lack of education which further impacts every simple aspect of life. The medical know-how of the rural people is almost missing. **Medical awareness** is very important for the overall **development of the weaker and socially, educationally, and economically backward sections of the society.**

We in Tamilnadu Newsprint and Papers Limited are aware, that for a prosperous country, the villages must be kept healthy. Each one needs to be socially aware and educated to have knowledge of various kinds of diseases and that a doctor needs to be consulted whenever he undergoes any kind of health problem rather than practice anything else. The backward class people are not so affluent that they can afford doctors for every simple disease condition.

The significance of medical camps is felt here. Medical camps are instituted not only to provide free medical service and checkup to the rural population, but they also focus on issues related to hygienic conditions of rural living, awareness of mothers and children who the most vulnerable to diseases. Awareness is imparted on how to live smartly.

Diseases are categorized and explained to the village folk telling them more about the health conditions that can be treated at home the ways in which they can be treated, diseases that need Doctor's prescription, diseases that require Doctor's care for a longer period of time, and diseases that require hospitalization immediately. The rural population tends to get panicked about any health hazards because they are not aware of the pros and cons of those.

They get emotionally disturbed about it easily. India is known for its poverty and depression because of health problems which is essentially due to lack of medical awareness.

Keeping this in mind, for the past Twenty Four Years, Doctors from the T.N.P.L. Occupational Health Centre visit the nearby villages every month and conduct Free, comprehensive, Health Awareness & Treatment camps. The villages that are benefited are Onavakkalmedu,

Nalliyampalayam, Sottaiyur, Kandhasamipalayam, Nanaparappu, Moolimangalam, Pazhamapuram, Masagoundanpudur, Kurrukupalayam. So far 288 Free Rural Medical camps have been conducted by TNPL.

In Rural Camps, the deficiencies like Acid Peptic Disease, Impetigo, Low Back Ache, Myalgia, Upper Respiratory Infection, Worm Infection, AGE, Head Ache, Pyrexia unknown Origin, Migraine, Blood Pressure and General cases are treated and medicines at free of cost are also provided.

The approach towards health is now changing from cure to prevention. The engineering approach is to ensure safer processes, an integrated systems approach and better occupational environment, whereas the medical approach emphasizes identifying the health risks and their prevention of occupational diseases.

TNPL OHC is well equipped and updated with the latest medical technology in order to give efficient and comprehensive health care to the Working Community.

MASTER HEALTH CHECK-UP

Ever year, all the permanent employees who have completed 40 years, 45 years, 50 years, 55 years and 59 years of age are sponsored for a comprehensive Master Health check-up by the management. For this year 2023-24, we have arranged Master Health check-up at Royal Care Super Speciality Hospital, Coimbatore at the rate of Rs.3,500/- for male employee and Rs.5,000/- for female employee through tender processing. The employee attended details from **15.09.2023 to 30.09.2023** for Master Health check-up is detailed below:

Category of Age	No of employees attended	
	Male	Female
40 yrs	-	-
45 yrs	4	-
50 yrs	13	-
55 yrs	36	-
59 yrs	31	-
Total	**84**	

EYE TEST:

Employees who are operating heavy vehicles viz., equipment operators and drivers have undergone eye test.

Distant Vision, near vision, color vision and fundal examination were performed. An amount of Rs.58,500/- was incurred towards Eye Test in the year, 2023.

EYE TEST REPORT:

	Total No of Personnel tested	**Normal**	**Abnormal**
Regular employees and Contract Workmen	**234**	**234**	**-**

AUDIOMETRY TEST:

Audiometry test was done to employees, those who were exposed to high noise levels. An amount of Rs.35,750/- was incurred for Audiometry Test in the year, 2023.

The summary of expenditure incurred for the health care of the employees is given below:

PURE TONE AUDIOGRAM REPORT

No. of Employees Tested	Normal Audiogram	Abnormal Audiogram
143	143	NIL

All employees who are exposed to noise in the work environment are provided with good quality **ear muffs** to protect their hearing capacity.

PRE-EMPLOYMENT MEDICAL EXAMINATION:

The candidates, who are selected for jobs in TNPL, undergo Pre-Employment Medical Tests as advised by the Occupational Health Centre, TNPL.

They are advised to undergo the following Medical Tests in reputed laboratories.

1. Blood Tests – Urea, Creatinine, Blood Sugar, Cholesterol.
2. Urine Tests – Urine Routine, Specific Gravity, Urine Albumin, Urine Sugar.
3. Chest X-ray.
4. Electro Cardio Gram (ECG).
5. Pulmonary Function Test (PFT).
6. Pure Tone Audiogram.

7. Ophthalmic Evaluation.
8. E.N.T Surgeon's Opinion.
9. Ophthalmic Surgeon's Opinion.
10. General Physician's Opinion.

INDUSTRIAL ACCIDENT:

When employees sustain injuries while on duty, Company bears the entire medical expenses. For the period, April, 2023 to September, 2023 an amount of Rs.5.88 lakhs was incurred towards entire medical expenses by the company.

MEDICAL ASSISTANCE UNDER SERIOUS AILMENTS SCHEME:

Company pays the entire hospitalization charges for employees, who suffer from the following Serious Ailments:

1. Heart Ailment
2. Cancer
3. Kidney Transplantation
4. Paralysis
5. Leprosy
6. Tuberculosis
7. Brain Surgery
8. Covid-19

The company has a list of approved hospitals in major cities, where is employees can take treatment for the above 7 Serious Ailments.

180 days of Special Leave is sanctioned to those employees, who suffer from any one of the above Serious Ailments. The employees who have exhausted the Special Leave are sanctioned additional 180 days of Special Leave on case to case basis depending upon the severity of the ailments. The expenses incurred towards the above medical facility for the period, April 2023 to September 2023 was Rs.48.99 lakhs.

SPECIAL MEDICAL ASSISTANCE SCHEME:

If the employee's medical expenditure is more than Rs.3,000/- and that there is a minimum period of 2 days of hospitalization, approximately 50% of the medical expenses are borne by the company for the medical expenses incurred for the employees and their dependants. The expenses incurred towards the above medical facility for the period April 2023 to September 2023 was Rs.101.89 lakhs.

ANNEXURE XI

FIRE PROTECTION FACILITIES

1. FIRE FIGHTING FACILITIES AVAILABLE IN TNPL MAIN SITE AS ON 30.09.2023

Sl. No.	PARTICULARS	CAPACITY
1	Fire Tender vehicles (FTV)	Two Numbers of Fire Tender Vehicles are available. FTV No.1 & 2 Tank Capacities are 4500 Ltrs and 5000 Ltrs respectively with foam making specialities.
2	Pumps (Effluent Treated Water)	3 Nos (All Rated 150kw/1500 rpm/720m^3/hr) Two pumps are in continouse operation for hydrant lines only.
3	Standby Diesel Operated Fire Water Pumps	3 Nos of Diesel Engines 1. No.503, 155 kw
		2. No.506, 113 kw / 410 m^3 / hr / Bhp 231 / rpm 1500
		3. No.507 113 kw / 410 m^3 / hr / Bhp 231 / rpm 1500
4	Standby Electrical Motor Operated Jockey Pumps	1 No. 37 kw / 240 m^3 / hr / rpm 2850
5	Diesel Driven Booster Pump	273m^3/hr @ 88 m/133 HP / 1800 rpm
6	Standby Electrical Motor Operated Pump No.1	273m^3/hr @ 88 m/120 HP / 90 kw / 2980 rpm
7	Standby Electrical Motor Operated Pump No.2	273m^3/hr @ 88 m/120 HP / 90 kw / 2980 rpm
8	Electrical Motor Operated Jockey Pump	273m^3/hr @ 88 m/ 11KW / 2900 rpm
9	Boilers 1 ,2 ,3 & 4 Booster Pump	273m^3/hr @ 88 m/ 15KW / 2900 rpm
10	Boiler No. 5 Booster Pump	273m^3/hr @ 88 m/ 11KW / 2900 rpm
11	Boilers 6 & 7 Booster Pump	273m^3/hr @ 88 m/ 22KW / 2955 rpm
12	Recovery Boiler area Booster Pump(Electrical Motor)	273m^3/hr @ 88 m/ 45 KW / 2900 rpm
13	Coal Yard Booster Pump	273m^3/hr @ 88 m/ 22KW / 2955 rpm
14	Electrical Driven Fire Pump at Cement Plant	273m^3/hr @ 88 m/ 45 KW / 2900 rpm
15	Total nos. of Fire Hydrants and Line pressure	674 NOS. and 4.8 Kg / cm^2 to 7 Kg/cm^2
16	Fire Extinguishers (Various types)	1670
17	Fire buckets and Stands	Fire Buckets Stand - 246 Buckets filled with sand and water - 1108
18	Water Avalability in the Tanks for Fire Fighting	Reservoir - I - 174000 M^3
		Reservoir - III - 650000 M^3
		Reservoir - IV - 650000 M^3
		Reservoir - V - 180000 M^3
		Calarifloculator - I - 8150 M^3
		Calarifloculator - II - 11400 M^3
19	Fire Fighting Crew	Fire Fighting Crew is Available Round the Clock
20	Reserve Personnel for Fire Fighting	Plant Personnel are Trained in Fire Fighting on Regular Basis

2. STATUS OF FIRE EQUIPMENTS AS ON 30.09.2023

(A) FIRST AID FIRE FIGHTING EQUIPMENTS

SLNO	EXTINGUSHER NAME	MAIN SITE	OFF SITE & WIND FARM	TOTAL	REMARKS
1	WATER CO_2 9 LTR	311	62	373	
2	FOAM (AFFF) 9 LTR	204	15	219	
3	FOAM 160 LTR (AFFF)	9	0	9	
4	DCP 6 KG	419	50	469	
5	DCP 9 KG	184	10	194	
6	CO_2 2 KG	17	0	17	
7	CO_2 4.5 KG	378	115	493	
8	CO_2 6 KG	2	0	2	
9	CO_2 6.5 KG	6	0	6	
10	CO_2 6.8 KG	8	0	8	
11	CO_2 9 KG	7	0	7	
12	CO_2 22.5 KG	25	0	25	
13	CLEAN AGENT - 1 KG	19	0	19	
14	CLEAN AGENT - 2 KG	66	0	66	
15	ABC 02 KG	15	0	15	
TOTAL		1670	252	1922	

(B) OTHER FIRE FIGHTING APPLIANCES

SLNO	EXTINGUSHER NAME	MAIN SITE	OFF SITE & WIND FARM	TOTAL	REMARKS
1	FIRE BUCKET STAND	246	24	270	
2	FIRE BUCKETS	1108	122	1230	
3	HOSE BOXES	213	8	221	
4	FIRE HOSE - 30 MTRS	82	25	107	
5	FIRE HOSE - 15 MTRS	172	18	190	
6	FIRE HOSE - 7.5 MTRS	83	10	93	
7	BRANCH PIPE /NOZZLE	206	16	222	
8	HYDRANT POINTS	674	0	674	
	SINGLE HYD. - 306+10+05+12=333				
	DOUBLE HYD. - 65				
	IS HYDRANTS - 50				
	FE HYDRANTS - 115				
	COAL SPRIN.+ SH - 4+4+8+63 = 79				
	MONITOR HYD. - 08+02+02= 12				
	CEMENT PLANT SH - 20				
TOTAL		2784	223	3007	

3. FIRE TENDER DETAILS AS ON 30.09.2023

Sl. No.	DESCRIPTION	FIRE TENDER NO 1	FIRE TENDER NO 2
1	AUTO SL.NO	405	442
2	REGN.NO.	TN47 D 8310	TN 47 AT 9389
3	MODEL	1996	2016
4	TYPE	SL54	1616 IL
5	MAKE	ASHOK LEYLAND / COMET	ASHOK LEYLAND
6	PUMP	SHRI GANESH FIRE EQUIPMENT (P) LTD., NEW DELHI. C.E MARK NO: CE 98/37.559.00, PRODUCT: FIRE PUMP EN-1028:1&2 SLNO. 475, MODEL NO. CNMHL-2230, YEAR 2013 PUMP CAPACITY:2250LPM, RPM:3000	FIRE FLY PUMP. CAPACITY 2250 LPM AT 7 KG/CM2 (NORMAL PRESSURE) AND 250 LPM AT 30 KG/CM2 (HIGH PRESSURE). TYPE - CENTERFUGAL HIGH PRESSURE AND LOW PRESSURE. MATERIAL - GUN METAL
7	BUILDER	SAKTHI FIRE EQUIPMENT , CHENNAI	M/S AAREL INDUSTRIES , NO:52 SECTOR "A" SANWER ROAD, INDORE.
8	DIESEL CAPACITY	200 LTRS	200 LTRS
9	TANK CAPACITY	4500 LTRS	5000 LTRS
10	FC DUE	26.03.2024	07.06.2024

4. FIRE CALLS ATTENDED

SL. NO	YEAR	TNPL CALLS			OUT SIDE CALLS			TOTAL CALLS ATTENDED
		MILL AREA	OUT SIDE MILL AREA	TOTAL	OUT SIDE CALLS	SPECIAL ASSISTANCE	TOTAL	
1	1996	34	5	39	7	0	7	46
2	1997	40	30	70	4	0	4	74
3	1998	29	19	48	5	1	6	54
4	1999	36	22	58	10	2	12	70
5	2000	13	1	14	14	2	16	30
6	2001	28	3	31	7	0	7	38
7	2002	23	-	23	11	2	13	36
8	2003	13	-	13	2	0	2	15
9	2004	12	2	14	2	0	2	16
10	2005	6	6	12	3	0	3	15
11	2006	16	-	16	6	1	7	23
12	2007	21	2	23	3	2	5	28
13	2008	23	-	23	5	0	5	28
14	2009	29	2	31	7	0	7	38
15	2010	21	-	21	5	0	5	26
16	2011	21	4	25	5	0	5	30
17	2012	51	1	52	12	0	12	64
18	2013	21	4	25	7	1	8	33
19	2014	30	4	34	6	0	6	40
20	2015	23	5	28	7	3	10	38
21	2016	39	3	42	5	1	6	48
22	2017	24	7	31	16	4	20	51
23	2018	27	2	29	4	0	4	33
24	2019	26	5	31	1	2	3	34
25	2020	19	7	26	2	0	2	28
26	2021	9	2	11	4	1	5	16
27	2022	14	2	16	5	3	8	24
28	2023(Sep)	22	4	26	3	1	4	30
		670	**142**	**812**	**168**	**26**	**194**	**1006**

5. MAIN SITE - PLANT WISE FIRE EXTINGUISHERS PLACEMENT DETAILS AS ON 30.09.2023

SL. NO	DEPARTMENTS	W/ CO_2	FOAM		DCP		CO_2							CLEAN AGENT		ABC 02 KG	TOTAL	FIRE BUCKETS		HOSE BOX	HOSES			Nozzle
		09 LTR	09 LTR	150 LTR	06 KG	09 KG	02 KG	4.5 KG	6 KG	6.5 KG	6.8 KG	09 KG	22.5 KG	01 KG	02 KG			STAND	NOS		30 MTR	15 MTR	7.5 MTR	
1	FIRE OFFICE / SECURITY OFFICE	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
2	ADMIN / IT BUILDINGS	9	0	0	9	0	0	12	0	1	0	0	1	8	11	0	51	2	9	2	2	1	1	2
3	CANTEEN / TELE EX/TIME OFFICE	1	3	0	6	1	0	7	0	0	0	0	0	0	2	0	20	2	8	0	0	0	0	0
4	WTP	0	5	0	9	6	1	8	0	0	0	1	0	0	0	0	30	3	12	4	0	6	2	4
5	WOOD YARD CHIPPER HOUSE SILO	8	3	0	12	1	0	6	0	0	0	0	0	0	1	0	31	0	0	11	1	17	3	11
6	MBP MILL	0	2	0	3	1	0	0	0	0	0	0	1	0	0	0	7	1	4	0	0	0	0	0
7	HARD WOOD PULP MILL	2	5	0	10	6	0	7	0	0	0	0	1	0	1	0	32	4	20	6	3	4	4	6
8	OLD WETLAB / PULP FEEDING	3	0	0	2	1	0	2	0	0	0	0	0	0	0	0	8	1	4	1	0	1	1	1
9	WORKS OFFICE / LAB	3	0	0	3	0	5	7	0	0	0	0	1	2	8	0	29	1	4	1	0	2	0	1
10	PAPER MACHINE III	24	23	1	38	15	0	38	0	0	0	0	3	0	9	0	151	18	85	28	14	19	7	28
11	PAPER MACHINE II	15	13	1	10	12	0	16	0	1	0	0	3	0	2	0	73	13	62	8	4	4	1	8
12	PAPER MACHINE I	29	19	2	11	16	0	19	1	1	4	0	1	0	3	0	106	15	75	12	12	9	3	8
13	CAP GODOWN I & II	2	0	0	2	0	0	3	0	0	0	0	0	0	1	0	8	0	0	4	0	4	4	4
14	PAPER GODOWN "A" & NEW F/H	24	0	0	7	0	0	4	0	0	0	0	0	0	0	0	35	3	12	4	1	4	1	4
15	OLD FIN. HOUSE / EMPL. CUTTER	11	0	0	1	1	1	3	0	0	0	0	0	0	0	0	17	3	14	3	1	2	1	3
16	WILE CUTTER & BIELOMATIC I & II	9	0	0	3	0	0	6	0	1	0	0	0	0	0	0	19	2	8	1	0	1	1	1
17	PASABAN CUTTER	2	1	0	5	0	0	4	0	0	0	0	0	0	0	0	12	0	0	2	0	2	2	2
18	ASRS GODOWN I & II / SHRINK	10	2	0	9	0	0	4	0	0	0	0	0	0	1	0	26	4	17	4	0	5	2	4
19	OLD REEL GODOWN I	14	0	0	7	0	0	4	0	0	0	0	0	0	0	0	25	8	39	10	5	15	2	10
20	NEW REEL GODOWN II	8	0	0	1	2	0	3	0	0	0	0	0	0	0	0	14	2	10	2	0	2	2	2
21	MARKETING / OS OFFICE	5	0	0	1	0	0	2	0	0	0	0	0	2	1	0	11	3	15	3	1	2	1	3
22	PROJECT GATE	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2	1	4	1	1	0	0	1
23	GENERAL STORES	13	4	0	6	2	0	9	0	0	0	0	0	1	2	0	37	2	9	1	1	0	0	1
24	KRAFT PAPER GODOWN I & II	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	8	1	1	0	0	1
25	CENTRAL / ELE WORK SHOP	2	2	0	4	1	1	2	0	0	0	0	0	0	0	0	12	2	9	0	0	0	0	0
26	SAFETY / CIVIL OFFICE	6	1	0	1	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0
27	BOILER I TO 4 & TG 1 TO 3	1	24	1	26	22	0	20	0	0	1	0	3	1	0	0	99	23	113	10	2	6	8	10
28	BOILER 5 / TG 4 & 5	0	7	0	16	5	0	9	0	0	0	0	3	0	1	0	41	9	29	4	2	2	0	4
29	BOILER VI & VII / TG VI	4	11	1	17	11	0	19	0	0	2	0	2	0	0	0	67	5	22	11	5	4	0	9
30	NEW SRP III	1	12	1	4	14	0	9	0	0	0	0	1	1	3	0	46	6	27	8	1	6	6	8
31	LIME KILN 1 & 2 / FURNACE OIL	0	4	1	4	2	0	4	0	0	0	0	0	0	0	0	15	3	13	2	0	2	0	2
32	O2 GENERATION PLANT	0	0	0	16	1	1	4	0	0	0	0	0	0	0	0	22	6	24	1	1	0	0	1
33	AUTO SECTION	1	3	0	5	1	0	3	0	0	0	0	0	0	1	0	14	4	18	0	0	0	0	0
34	DIESEL BUNK	0	2	1	0	3	0	0	0	0	0	0	1	0	0	0	7	2	8	1	1	0	0	1
35	ETP / MULTI PURPOSE GODOWN	1	3	0	11	5	1	8	0	0	0	0	0	0	0	0	29	4	17	2	0	4	0	2
36	SCRAP YARD	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	4	4	30	3	0	3	1	3
37	COAL YARD WEIGH BRIDGE	1	1	0	8	1	0	6	0	0	0	1	0	0	0	0	18	1	4	4	1	3	4	4
38	WASTE PAPER GODOWN / S/GATE	11	1	0	5	2	0	5	0	0	0	0	0	0	0	0	24	6	28	5	4	1	4	5
39	SRP I & II - CAUSTICIZER PLANT	0	5	0	12	7	2	11	0	0	0	1	1	0	0	0	39	8	35	1	1	0	0	1
40	OLD PULP MILL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	1	1	0	0	1
41	CBP II	1	5	0	7	6	0	6	0	0	1	0	1	0	0	0	27	2	8	2	1	1	1	2
42	CBP III / ECF	0	5	0	13	7	0	11	1	0	0	1	1	0	1	0	40	4	17	6	1	5	3	6
43	CLO2 PLANT	0	3	0	9	4	0	7	0	0	0	1	0	0	1	0	25	4	17	4	0	4	0	4
44	WET LAP II & III	5	0	0	1	2	0	3	0	0	0	1	0	0	0	0	12	0	0	1	1	0	0	1
45	DE INKING PLANT	3	6	0	9	5	0	8	0	2	0	0	1	0	1	0	35	3	15	6	0	6	6	6
46	DIP SLUDGE SCREW PRESS	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
47	DIP PULPER GODOWN	10	0	0	2	1	0	2	0	0	0	0	0	0	0	0	15	1	5	5	1	4	2	5
48	BACK WATER PLANT	1	1	0	5	1	0	5	0	0	0	1	0	0	0	0	14	1	5	0	0	0	0	0
49	BAGGASE YARD OLD / NEW	20	4	0	6	9	0	9	0	0	0	0	0	0	0	0	48	3	12	13	8	9	5	13
50	BIO GAS PLANT / WEIGH BRIDGE	0	0	0	6	0	0	3	0	0	0	0	0	0	1	0	10	1	5	0	0	0	0	0
51	BAGASSE GATE	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	1	5	0	0	0	0	0
TOTAL		**269**	**182**	**9**	**346**	**175**	**12**	**318**	**2**	**6**	**8**	**7**	**25**	**16**	**52**	**0**	**1427**	**194**	**890**	**199**	**78**	**160**	**78**	**193**

6. COLONY AREA / OUT POST FIRE EXTINGUISHERS PLACEMENT DETAILS AS ON 30.09.2023

SL. NO	DEPARTMENTS	W/ CO_2	FOAM		DCP		CO_2							CLEAN AGENT		ABC 02 KG	TOTAL	FIRE BUCKETS		Hose Box	HOSES			Nozzle
		09 LTR	09 LTR	160L TR	06K G	09 KG	02 KG	4.5 KG	06 KG	6.5 KG	6.8 KG	09 KG	22.5 KG	01 KG	02 KG			Stand	Buckets		30 MTR	15 MTR	7.5 MTR	
	COLONY AREA																							
	BROUGHT FORWARD	269	182	9	346	175	12	318	2	6	8	7	25	16	52	0	1427	194	890	199	78	160	78	193
1	TNPL MATRIC SCHOOL / BUS	4	0	0	4	0	0	4	0	0	0	0	0	0	4	15	31	2	8	0	0	0	0	0
2	TNPL PUBLIC SCHOOL	3	0	0	2	0	0	3	0	0	0	0	0	1	1	0	10	2	8	0	0	0	0	0
3	TNPL PRIMARY SCHOOL	3	0	0	1	0	0	2	0	0	0	0	0	0	3	0	9	1	4	0	0	0	0	0
4	STADIUM / SHOOTING RANGE	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	2	8	0	0	0	0	0
5	COLONY MAINTENANCE	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0
6	FAMC	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0
7	CAR SHED	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	2	8	0	0	0	0	0
8	RECREATION	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	4	1	4	0	0	0	0	0
9	STAFF CLUBS	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	4	2	8	0	0	0	0	0
10	COLONY GATE / TEMPLE	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	0
11	COMMUNITY HALL	2	1	0	2	0	0	2	0	0	0	0	0	0	0	0	7	2	8	0	0	0	0	0
12	HRD HALL / HORTICULTURE	2	0	0	2	0	0	2	0	0	0	0	0	0	0	0	6	2	8	0	0	0	0	0
13	CO-OP- STORE/ GAS GODOWN	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	4	2	8	0	0	0	0	0
14	MICRO LAB	2	0	0	1	0	3	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0
15	GUEST HOUSE	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
16	INDUSTRIAL TRAINING INSTITUTE	6	2	0	6	1	0	6	0	0	0	0	0	0	2	0	23	8	32	0	0	0	0	0
	TOTAL	299	187	9	373	180	16	346	2	6	8	7	25	17	62	15	1552	223	1007	199	78	160	78	193
	OUT POST																							
1	BR #3 (NEW RESERVOIR)	0	1	0	1	1	0	1	0	0	0	0	0	0	0	0	4	2	8	0	0	0	0	0
2	CPRC	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3	3	13	0	0	0	0	0
3	INTAKE WELL	0	2	0	7	0	0	5	0	0	0	0	0	0	0	0	14	4	20	0	0	0	0	0
4	TEWLIS PUMP HOUSE	0	1	0	1	1	0	1	0	0	0	0	0	0	0	0	4	1	4	0	0	0	0	0
5	CEMENT PLANT	11	13	0	36	2	0	25	0	0	0	0	0	2	4	0	93	13	56	14	4	12	5	13
6	BLS GODOWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	12	17	0	46	4	1	32	0	0	0	0	0	2	4	0	118	23	101	14	4	12	5	13

ANNEXURE XII

COMPLIANCE TO CREP RECOMMENDATIONS

STATUS OF IMPLEMENTATION OF CREP ACTION POINTS AS EVOLVED BY CPCB

<table>
<tr><th>RESPONSIBILITY</th><th>IMPLEMENTATION SCHEDULE</th><th>STATUS OF COMPLIANCE</th></tr>
<tr><td>1.DISCHARGE OF AOX kg/tonne of paper</td><td>AOX 1.5 Kg/tonne of paper within 2 years
AOX 1.0 Kg/tonne of paper within 5 years</td><td>The unit is maintaining AOx level in the treated effluent is maintaining below 0.1kg/T of product during the review period.
<table>
<tr><th colspan="4">AOX LEVEL – Apr’23 to Sep’23</th></tr>
<tr><th rowspan="2">S.NO</th><th rowspan="2">MONTH</th><th colspan="2">AOX</th></tr>
<tr><th>PPM</th><th>KG/T</th></tr>
<tr><td>1</td><td>Apr’23</td><td>3.3</td><td>0.07</td></tr>
<tr><td>2</td><td>May’23</td><td>3.9</td><td>0.09</td></tr>
<tr><td>3</td><td>Jun’23</td><td>3.3</td><td>0.08</td></tr>
<tr><td>4</td><td>Jul’23</td><td>4.2</td><td>0.07</td></tr>
<tr><td>5</td><td>Aug’23</td><td>2.1</td><td>0.06</td></tr>
<tr><td>6</td><td>Sep’23</td><td>2.9</td><td>0.03</td></tr>
<tr><td colspan="2">AVERAGE</td><td>3.29</td><td>0.07</td></tr>
</table></td></tr>
<tr><td>2. Installation of lime kiln</td><td>Within 4 years</td><td>The unit has already installed lime kiln with Lime sludge reburning in 1996. Installation of additional limekiln was completed during 2008 as part of Mill Development Plant now both lime kilns are under operation.</td></tr>
<tr><td>3. Waste water discharge cu. M / tonne of paper</td><td>Less than 140 Cu. M / tonne of paper within 2 years.
Less than 120 Cu. M / tonne in 4 years for units installed before 1992.
Less than 100 Cu. M / tonne of paper per units installed after 1992.</td><td>The average waste water discharge per ton of paper production is maintained around 19 M^3/Mt of paper produced.</td></tr>
<tr><td>4. Odour control by burning the reduced sulfur emissions in the boiler/lime-kiln</td><td>Installation of odour control system within 4 years.</td><td>The unit has installed following systems to control odour:
➢ Non Condensable Gas (NCG) which is the source for odour is collected from hot black liqour accumulator tank and evaporators & incinerated in lime kilns.
➢ NCG collection and incineration system provided in both lime kilns.</td></tr>
<tr><td>5. Utilization of treated effluent for irrigation</td><td>Utilization of treated effluent for irrigation wherever possible</td><td>The entire treated effluent discharge from the TNPL unit is fully utilized to irrigate lands, covered under TEWLIS, Captive plantation and addition to Greenery development in and around mill premises.</td></tr>
<tr><td>6. Color removal from the effluent</td><td>Indian Paper Manufacturers Association to take up project with Central Pulp & Paper Research Institute</td><td>Indian Paper Manufacturers Association has taken up this project with Central Pulp and Paper Research Institute. The unit has implemented tertiary treatment to reduce colour in the treated effluent by Ozonation at a capital outlay of Rs.400 lakhs (Rs.200 for Ozonization and Rs.200 of Oxygen feed plant). The unit was commissioned on 06th August 2010 and is in service. The operating expenditure will be about Rs. 70 lakh per annum @ Rs.20,000 per day. In addition to colour reduction in the final treated effluent, the ozonation further improves dissolved oxygen level in the treated effluent.</td></tr>
</table>

ANNEXURE XIII

COMMITMENTS MADE DURING PUBLIC HEARING

ACTION TAKEN ON PUBLIC HEARING MEETING /CONSULTATION MEETING COMMITMENTS

Public Hearing meeting was conducted for the De-inking Plant and Upgradation of Captive Co-generation plant on 18/05/2012. Public demanded various welfare measures such as provision of drinking water, dust control measures, infrastructure development, sanitation facilities. Subsequent to Public Hearing meeting, all the requests received from the eight Panchayats located around mill premises were prioritized based on the discussion with respective Panchayat President /Chairman and site inspection carried out by TNPL Officials during the Month of June '12.

Based on the above, necessary works were carried out as detailed below:

1. Drinking water supply:

SL NO	Name of Panchayat	Nature of Request	Details of work undertaken	Value of work in Lakh ₹	Current Status of work
01	Tamil Nadu Kagitha Aalai Panchayat	Provision of additional drinking water taps	11 Numbers of additional drinking water taps provided	2.10	Work completed
02	Punjai Pugalur Town Panchayat Area	Provision of drinking water pipelines	Laying of PVC pipelines for a length of 2.2 KMs	7.50	Work completed.
03	-do-	Overhead tank of drinking water supply	One Lakh Lt capacity drinking water tank has been constructed	17.00	Work completed.
04	-do-	GLR for drinking water supply from TNPL	Tank has been constructed	10.00	Work completed.
05	Athur Poolampalayam Village Panchayat	Provision of drinking water to Thanasi goundanpudur, Thundu perumalpalayam & Ambethkar Colony	Laying of separate lines to existing three Overhead tanks located in the respective areas	20.00	Work completed.
06	Thirukaduthurai Panchayat	Replacement of damaged drinking water pipelines for a distance of 0.5 Kms & Provision of drinking water storage tank	A 5000 Lt Sintex tank has been provided and pipelines were replaced	2.5	Work completed.

SL NO	Name of Panchayat	Nature of Request	Details of work undertaken	Value of work in Lakh ₹	Current Status of work
07	Kombupalayam Panchayat	Repairing of OHT at Noyyal Village & replacement of Sintex tank at Nathamedupalayayam	OHT repaired and sintex tank was replaced.	0.80	Work completed.
08	-do-	Repairing of drinking water tank at Panchayat Primary School, Noyyal	Repairing work completed.	0.10	Work completed.
09	Punnam Panchayat Area	Provision of RCC OHT at Punnam Adidravidar School	20,000 litres capacity tank was constructed.	5.00	Work completed.

2. Sanitation Arrangement:

SL NO	Name of Panchayat	Nature of Request	Details of work undertaken	Value of work in Lakh ₹	Current Status of work
01	Thottakuruchi Town Panchayat	Provision of Public Toilet at Thalavapalayam	Toilet constructed.	3.50	Work completed.
02	-do-	Provision of Public Toilet at Fishermen street at East Thavittupalayam	Toilet constructed.	3.50	Toilet constructed.
03	Kombupalayam Panchayat	Repairing of toilet at Panchayat Primary School, Noyyal	Toilet provided with new septic tank and pipelines	0.50	Work completed.
04	Nanjai Pugalur Panchayat Area	Provision of Public Toilet at Modhu Kaadu	Toilet constructed.	3.50	Toilet constructed.

3. Infrastructure and Drainage Development:

SL NO	Name of Panchayat	Nature of Request	Details of work undertaken	Value of work in Lakh ₹	Current Status of work
01	Tamil Nadu Kagitha Aalai Panchayat	Class room building for Panchayat union Elementary School, Pudu Kurukku palayam	Construction of three class rooms	8.00	Work completed.
02	Thirukaduthurai Panchayat	Front shed for Ration shop	Front shed for ration shop has been provided	0.5	Work completed.
03	Punnam Panchayat Area	Construction of Ration shop at Punnam chatram	Ration shop constructed.	5.0	Work completed.
04	-do-	Provision of drainage between Palamapuram & Ponniyagoundanpudur	Drainage provided	14.25	Work completed.
05	-do-	Provision of drainages and retaining walls at Moolimangalam and Thathampalayam	Drainage provided	22.50	Work completed.
06	Kombupalayam Panchayat	Construction of compound wall at Panchayat Primary School, Noyyal	Compound wall provided	1.9	Work completed.
07	-do-	Creation of burial ground and civil amenities at Muninathapuram	Work is being taken up	1.5	Work completed.

Total cost spent towards implementation of above schemes = Rs.144.82 lakhs.

ANNEXURE XIV

CSR ACTIVITES

STATUS OF CSR ACTIVITIES CARRIED OUT DURING APRIL - 2023 TO SEPTEMBER – 2023

Sl.No	CSR Activities Carried Out During Apr'2023 to Sep'2023	Cost incurred. Rs. in Lakhs
1	Contribution of Rs.50,000/- was made to organize 63rd All India Basket Ball Tournament at Karur District.	0.50
2	TNPL has provided sponsorship of Rs.35 lakhs to Tamil Nadu Champion Foundation for developing sports activities.	35.00
3	TNPL has provided sponsorship of Rs.50,000/-to Karur District Athletic Association for organize state level Javelin throw event.	0.50
4	2 children have been identified and enrolled from Onavakkalmedu village to undergo School education from L.K.G. to 12th standard at free of cost in TNPL Matriculation School. As of now, 37 students are studying under this scheme.	0.04
5	4 students who have finished 10th standard and residing permanently in villages around TNPL factory premises are being sponsored to undergo Diploma in Paper Technology course for 3 ½ years at Seshasayee Institute of Technology, Trichy TNPL (Total Rs.8.00 lakhs for 19 students).	7.82
6	TNPL has provided Sponsorship for "Two Days State Level Inter Collegiate Cultural Fest" at Arasu College of Arts & Science for Women at a cost of Rs.1,00,000/-.	1.00
7	Industrial Training Institute in affiliation with National Council Vocational Training (NCVT) and the Quality Council of India (QCI) is being run through TNPL Arakkodai Trust, covering four trades Viz. Instrument Mechanic, Fitter, Electrician and Welder.	30.58
8	283rd Monthly Mobile Medical camp was conducted on 21.04.2023 at surrounding villages of TNPL. Totally 238 persons were screened and medicines worth of Rs.11,995/- was issued at free of cost.	0.12
9	284th Monthly Mobile Medical camp was conducted on 17.06.2023 at surrounding villages of TNPL. Totally 219 persons were screened and medicines worth of Rs.11,856/- was issued at free of cost..	0.12
10	285th Monthly Mobile Medical camp was conducted on 28.07.2023 at surrounding villages of TNPL. Totally 232 persons were screened and medicines worth of Rs.11,996/- was issued at free of cost.	0.12
11	TNPL has organized a General Medical Camp in association with Royal Care Super Speciality Hospital, Coimbatore at TNPL School on 23.07.2023.In this General Medical Camp, 692 persons were benefitted.	5.75
12	286th Monthly Mobile Medical camp was conducted on 25.08.2023 at surrounding villages of TNPL. Totally 230 persons were screened and medicines worth of Rs.11,377/- was issued at free of cost.	0.11
13	Computer, Typewriting and Tailoring training centres have been set up to provide Career development training to unemployed youth in the neighbouring villages for enhancing employability skills / entrepreneurship skills.	1.62
14	Providing Physical Training at TNPL sports ground to the unemployed youth to take part in the Police Selection for the post of Constable and Sub-Inspector. Tiffin, Lunch, snacks, etc will be provided. Expert coaching classes are being provided during the training classes.	1.62

Sl.No	CSR Activities Carried Out During Apr'2023 to Sep'2023	Cost incurred. Rs. in Lakhs
15	Infrastructure development works in the surrounding Municipality, Town Panchayat and Panchayat areas viz. , Pugalur Municipality, Punjai Thottakurichi, and Nanjai Pugalur, Kombupalayam, Punnam, Thirukkaduthurai, Vettamangalam Panchayats and New proposals which may crop up during the year 2023-24. Financial Assistance to Construct Jannathul Firthous Jummah Mosque, Velayuthampalayam.	1.50
16	Supply of water heater to provide the heater to Primary Health Centre Olapalayam under CSR activity.	0.06
17	Distributing Drinking water to the surrounding villages viz. 1) Palamapuram, 2)Pandipalayam, 3)Tadhampalayam, 4)Moolimangalam, 5)Ponniagoundanpudur, 6)Narippalli Thottam, 7)Kariyampatti, 8)Kandasamipalayam, 9)Velliyampalayam, 10)Sullikaradu, 11) Chattram road, 12) Nanaparappu 13) Thannasigoundanputhur 14) Thunduperumal Palayam and TEWLIS Ayacut areas etc., and community development activities etc.,	26.55
18	Production and Supply of Tree Saplings and planting saplings in the surrounding villages.	0.32
2	Watering of Tree saplings planted around the factory	1.88
19	Developing greenbelt and garden in the surrounding areas and Karur Railway station. Promotion of organic manures, Developing Solid Waste Management projects in the surrounding villages.	0.67
20	TNPL has provided Sponsorship of Rs.5,00,000/- lakhs for Documenting the History, Evolution and Current Trends of south Indian Musical Instruments to MOPA, Chennai.	5.00
21	Financial assistance for Construction/ Extension / Kumbabisheham of 14 temples and 1 Mosque (Muthanampalayam, Punjai Pugalur, Panduthakaranpudur, Varunthiyapalayampudur, Kuppam, Sengalpalayam, Kattipalayam, Valayapalayam, Karur, Punjai Thottakurichi, Kuppam, Sadaiyampalayam, Kombupalayam, Venkamedu and Velayuthampalayam) in and around our factory premises.	6.26
22	TNPL has provided sponsorship of Rs.50,000/- to Naradha Gana Sabha's to celebrate 79th Annual Day events.	0.50
	GRAND TOTAL (Rs in lakhs)	**127.64**

Table No. 1

Enterprise Social Commitment

Sector	2013 -14	2014 -15	2015 - 16	2016 -17	2017 - 18	2018 - 19	2019 - 20	2020- 21	2021- 22	2022- 23
Education	69	47	120	110	92	88	103	17	68	80.85
Health Care and Medical Service	10	22	67	89	33	37	136	32	139	7.43
Infrastructure Development	94	-	-	-	54	84	44	49	5	21.8
Social Development	-	193	101	230	-	70	43	75	131	144.16
Livelihood / Economic Development	109	-	-	-	25	62	10	16	3	-
Environment & Sanitation	26	93	66	51	33	33	14	6	2	5.2
Culture & Heritage	20	18	16	26	19	21	35	16	0.4	2
Soil and Water Conservation	-	-	-	-	-	10	14	8	-	-
Total (Rs. in Lakhs)	327	373	369	505	255	406	399	219	349	261
Total (Rs. in Crores)	**34.66**									

Table No. 2

Cost Towards Pollution Control Facilities

Parameter	**Capital cost (Rs. Lakhs since 2013 EC)**	**Operating Cost Rs. Lakhs/year**
Air pollution control systems (ESP and Chimney for the power boiler#7 under capital)	800	325
DIP Sludge dewatering system and handling	1000	195
Water conservation and recycling for DIP	700	-
Cost incurred on Water conservation measures (118 projects)	157	-
Online monitoring and control equipment and instruments	123	10
Dust suppression system for coal handling area	130	23
Air cooled condenser for conservation of water	1000	193
Greenbelt and green cover development	64	125
Safety systems installations	100	
Safety and environmental staff costs		350
Total	**4074**	**1221**

Table No. 3

Status of Environment Protection Measures Proposed During MDP

Description	Investment (Rs In Crores)	Status
White liquor oxidation plant	4.0	Implementation completed as part of Mill Development Plan Commissioned in May 2008
Oxygen generation plant	11.0	
Bleach plant for chemical bagasse pulping lines	60.0	
Chlorine di oxide generation plant	47.6	
Lime mud reburning kiln	21.5	
Improvements in waste water treatment plant	4.9	
Electrostatic precipitators including online stack monitoring	10.0	
Total	**159.0**	

Table No. 4

Status of Environment Protection Measures Proposed During MEP

Description	Investment (Rs In Crores)	Status
Electrostatic Precipitator for proposed coal fired boiler	3	Commissioned in Jan 2011 as part of Mill Expansion Plan
Augmentation of wastewater treatment plant (WWTP)	3	Ozone treatment plant commissioned in May 2010
Oxygen delignification	36	Commissioned in Jan 2011 as part of Mill Expansion Plan
New brown stock washing	86	
Total	**128**	

ANNEXURE XV

TNPCB REPORT – AMBIENT AIR QUALITY MONITORING

Report No.DEL/DGL/20

TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Dindigul.
AMBIENT AIR QUALITY SURVEY – Report of Analysis.

Report No. F.No.70/TNPCB/DEL/DGL/AAQS/2023-2024, Date:20.10.2023

1. Name of the Industry : M/s. Tamilnadu Newsprint and Papers Ltd.,
2. Address of the Industry : Pulp Plant Division, Kagithapuram – 639 136, Karur District.
3. Date of Survey : 16.08.2023 & 17.08.2023.
4. Duration of Survey : 24 Hours.
5. Category : Red – Large.
6. Land use classification : Industrial
7. Type of Industry : Pulp Plant

Meteorological Conditions

Ambient Temperature (°C)	Min	Max	Relative Humidity (%)	Min	Max
	24 °C	34 °C		35 %	83 %
Weather Condition	Partially Cloud		Rain Fall (mm)	—	
Predominant Wind Direction	SW → NE		Mean Wind Speed (Km/hr)	11.8 Km/hr.	

Ambient Air Quality Survey Average Results (24 Hrs)

Sl. No	Location	Direction *	Distance (m) *	Height from GL (m)	Pollutants Concentration (µg/m³)					
					$PM_{2.5}$	PM_{10}	SO_2	NO_2	Cl_2 *	H_2S *
1	On top of the Decant House Tewlis Pump House.	NE	400	5	40	86	24	29	<1.0	<0.2
2	On top of Thiru.Muthusamy House No.34, Nallipalayam.	E	1000	5	-	78	20	26	<1.0	<0.2
3	On top of Thiru.Ramasamy House No.16, Sottaiyur.	ESE	1500	6	-	71	19	23	<1.0	<0.2
4	On top of the scaffolding near TNPL Reservoir, R.C.-3.	SE	500	4	-	69	18	27	<1.0	<0.2
5	On top of Thiru. Gopal House, Door No.20/4, Kurukkupalayam.	S	1000	5	-	66	15	18	<1.0	<0.2
6	On top of Thiru. R.Chidambaram House, Door No.3, Kongu Nagar.	SSW	750	5	-	64	13	17	<1.0	<0.2
7	On top of EB Quarters 'Q' Block- IV.	SW	400	7	31	56	15	19	<1.0	<0.2
8	On top of Units Biotech Laboratory Building.	W	400	6	-	62	17	21	<1.0	<0.2
9	On top of Bio- Methanation Building near TNPL Guest House.	NW	700	6	-	67	19	24	<1.0	<0.2
	Ambient Air- Quality Results for fugitive Emission.									
10	On top of the scaffolding near ETP area.	SW	5.0	4	-	140	23	34	<1.0	<0.2
11	On top of the scaffolding near Coal- Storage yard.	SE	20	4	-	167	28	39	<1.0	<0.2

Note: All the values are restricted to the sampling period of 08.00 Hours Average of 24 Hours.
*Indicate Minimum Detectable Limit
End of the report

Env.Scientist

Deputy Chief Scientific Officer
DEL, TNPCB, Dindigul.

LATEST NABL ACCREDITED & MoEF&CC RECOGNIZED THIRD PARTY LAB– AMBIENT AIR QUALITY MONITORING TEST REPORT

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017 CERTIFIED AS PER ISO 9001 : 2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858223000006959F

Report No	:	**EN23090797**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Ambient Air Quality			
Sample Description	:	Ambient Air Quality	**Sampling Date & Time**	:	20 to 21 Sep 2023
Sample No	:	EN23090797			01.30 pm to 01:30pm
Sample Location	:	TNPL Colony Bio Lab	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Relative Humidity	:	56%	**Test Completed on**	:	03 Oct 2023
Sampling Procedure	:	IS 5182 Part V & XIV	**Ambient Temperature**	:	33°C
Sample Submission Type	:	**Collected Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO_2	IS 5182 (Part 2):2001	14.00	µg/m³	80
2	Nitrogen Dioxide as NO_2	IS 5182 (Part 6):2006	24.60	µg/m³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	61.80	µg/m³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	26.40	µg/m³	60
5	Ozone as O_3	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m³	4
8	Ammonia as NH_3	GL/EN/SOP/057	BDL(DL:20)	µg/m³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
13	Hydrogen Sulphide as H2S*	IS 5182 (Part 7)	BDL(DL:10.0)	µg/m³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter * Non NABL Parameter

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1, I St Floor, Sri Jothi Complex Murugesan Street, Balaji Nagar, Nagar, Arumbakkam Chennai 600106

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* Laboratory is not responsible for the authenticity of unattested test results.

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001 2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC850223000006960F

Report No	:	**EN23090798**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd.**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Ambient Air Quality			
Sample Description	:	Ambient Air Quality	**Sampling Date & Time**	:	20 to 21 Sep 2023
Sample No	:	EN23090798			01:45 pm to 01:45pm
Sample Location	:	TNPL Guest house	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Relative Humidity	:	56%	**Test Completed on**	:	03 Oct 2023
Sampling Procedure	:	IS 5182 Part V & XIV	**Ambient Temperature**	:	33°C
Sample Submission Type	:	**Collected Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO_2	IS 5182 (Part 2):2001	15.90	µg/m³	80
2	Nitrogen Dioxide as NO_2	IS 5182 (Part 6):2006	25.20	µg/m³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	58.00	µg/m³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	22.80	µg/m³	60
5	Ozone as O_3	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m³	4
8	Ammonia as NH_3	GL/EN/SOP/057	BDL(DL:20)	µg/m³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
13	Hydrogen Sulphide as H2S*	IS 5182 (Part 7)	BDL(DL:10.0)	µg/m³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter. *Non NABL Parameter

Note : BDL: Below Detection Limit., DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

Verified By

End of Report

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #D/1,1 St Floor, Sri Jothi Complex Murugesam Street, Balaji Nagar, Arumbakkam Chennai 600106

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GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858Z230000006961F

Report No	:	**EN23090799**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Ambient Air Quality			
Sample Description	:	Ambient Air Quality	**Sampling Date & Time**	:	20 to 21 Sep 2023
					02.00 pm to 02:00pm
Sample No	:	EN23090799	**Sample Received on**	:	26 Sep 2023
Sample Location	:	TNPL 230 KV TNEB Station	**Test Started on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Completed on**	:	03 Oct 2023
Relative Humidity	:	56%	**Ambient Temperature**	:	33°C
Sampling Procedure	:	IS 5182 Part V & XIV			
Sample Submission Type	:	**Collected Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO_2	IS 5182 (Part 2):2001	13.90	µg/m³	80
2	Nitrogen Dioxide as NO_2	IS 5182 (Part 6):2006	24.40	µg/m³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	63.90	µg/m³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	27.50	µg/m³	60
5	Ozone as O_3	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m³	4
8	Ammonia as NH_3	GL/EN/SOP/057	BDL(DL:20)	µg/m³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
13	Hydrogen Sulphide as H2S*	IS 5182 (Part 7)	BDL(DL:10.0)	µg/m³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (38) Nov.2009, against the above tested parameter. *Non NABL Parameter

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #8/1, I SI Floor, Sri Jothi Complex Murugesan Street, Balaviinayagar Nagar, Arumbakkam Chennai 600106

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GLens Innovation Labs Pvt Ltd.

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TC - 8582

TEST REPORT

ULR No : TC858223000006962F

Report No	:	EN23090800	Report Date	:	10 Oct 2023
Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd.			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Name	:	Ambient Air Quality			
Sample Description	:	Ambient Air Quality	Sampling Date & Time	:	20 to 21 Sep 2023 02:15 pm to 02:15pm
Sample No	:	EN23090800			
Sample Location	:	TNPL Depither Area (On the terrace of BM Plant)	Sample Received on	:	26 Sep 2023
Sample Condition	:	Good	Test Started on	:	26 Sep 2023
Relative Humidity	:	56 %	Test Completed on	:	03 Oct 2023
Sampling Procedure	:	IS 5182 Part V & XIV	Ambient Temperature	:	33°C
Sample Submission Type	:	Collected Lab Representative			

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO_2	IS 5182 (Part 2):2001	14.80	µg/m³	80
2	Nitrogen Dioxide as NO_2	IS 5182 (Part 6):2006	25.10	µg/m³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	69.40	µg/m³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	31.60	µg/m³	60
5	Ozone as O_3	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m³	4
8	Ammonia as NH_3	GL/EN/SOP/057	BDL(DL:20)	µg/m³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
13	Hydrogen Sulphide as H2S*	IS 5182 (Part 7)	BDL(DL:10.0)	µg/m³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter. *Non NABL Parameter

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

Verified By

End of Report

Authorized Signature
E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, 60/1, 1 St Floor , Sri Lalitha Complex Murugesan Street , Balaji Nagar Nagar, Arumbakkam Chennai 600 106

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GLens Innovation Labs Pvt Ltd.

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TC - 8582

TEST REPORT

ULR No : TC858223000006963F

Report No	:	**EN23090801**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd.**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Ambient Air Quality			
Sample Description	:	Ambient Air Quality	**Sampling Date & Time**	:	21 to 22 Sep 2023 03.00 pm to 03:00pm
Sample No	:	EN23090801			
Sample Location	:	Mr.Chidambaram House (Kongu Nagar)	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Relative Humidity	:	56 %	**Test Completed on**	:	03 Oct 2023
SamplingProcedure	:	IS 5182 Part V & XIV	**Ambient Temperature**	:	33°C
Sample Submission Type	:	**Collected Lab Repreoentative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO_2	IS 5182 (Part 2):2001	17.50	µg/m³	80
2	Nitrogen Dioxide as NO_2	IS 5182 (Part 6):2006	25.80	µg/m³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	59.00	µg/m³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	21.10	µg/m³	60
5	Ozone as O_3	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m³	4
8	Ammonia as NH_3	GL/EN/SOP/057	BDL(DL:20)	µg/m³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
13	Hydrogen Sulphide as H2S*	IS 5182 (Part 7)	BDL(DL:10.0)	µg/m³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter. *Non NABL Parameter

Note : BDL: Below Detection Limit., DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

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LAB MANAGER

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TC - 8582

TEST REPORT

ULR No : TC858223000006965P

Report No	:	**EN23090803**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Name	:	Ambient Air Quality			
Sample Description	:	Ambient Air Quality	**Sampling Date & Time**	:	21 to 22 Sep 2023
Sample No	:	EN23090803			03:15 pm to 03:15pm
Sample Location	:	TNPL Balancing Reservoir-III	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Relative Humidity	:	59%	**Test Completed on**	:	03 Oct 2023
Sampling Procedure	:	IS 5182 Part V & XIV	**Ambient Temperature**	:	33°C
Sample Submission Type	:	**Collected Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO_2	IS 5182 (Part 2):2001	14.10	$\mu g/m^3$	80
2	Nitrogen Dioxide as NO_2	IS 5182 (Part 6):2006	25.40	$\mu g/m^3$	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	60.80	$\mu g/m^3$	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	24.10	$\mu g/m^3$	60
5	Ozone as O_3	IS 5182 (Part 9):1974	BDL(DL:20)	$\mu g/m^3$	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	$\mu g/m^3$	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m^3	4
8	Ammonia as NH_3	GL/EN/SOP/057	BDL(DL:20)	$\mu g/m^3$	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	$\mu g/m^3$	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m^3	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m^3	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m^3	-
13	Hydrogen Sulphide as H2S*	IS 5182 (Part 7)	BDL(DL:10.0)	$\mu g/m^3$	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter. *Non NABL Parameter

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

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Authorized Signature
E. PRITHIVIRAJAN
LAB MANAGER

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TC - 8582

TEST REPORT

ULR No : TC858223000069G4P

Report No	:	EN23090802	**Report Date**	:	10 Oct 2023
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd**			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Name	:	Ambient Air Quality			
Sample Description	:	Ambient Air Quality	**Sampling Date & Time**	:	21 to 22 Sep 2023 03.00 pm to 03:00pm
Sample No	:	EN23090802			
Sample Location	:	Mr.Gopals house New Kurukkupalayam	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Relative Humidity	:	56%	**Test Completed on**	:	03 Oct 2023
Sampling Procedure	:	IS 5182 Part V & XIV	**Ambient Temperature**	:	33°C
Sample Submission Type	:	**Collected Lab Representative**			

Test Results

St.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO_2	IS 5182 (Part 2):2001	15.30	µg/m³	80
2	Nitrogen Dioxide as NO_2	IS 5182 (Part 6):2006	26.50	µg/m³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	56.60	µg/m³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	22.30	µg/m³	60
5	Ozone as O_3	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m³	4
8	Ammonia as NH_3	GL/EN/SOP/057	BDL(DL:20)	µg/m³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
13	Hydrogen Sulphide as H2S*	IS 5182 (Part 7)	BDL(DL:10.0)	µg/m³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter. *Non NABL Parameter

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017 CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC058223000006966P

Report No	:	**EN23090804**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Name	:	Ambient Air Quality			
Sample Description	:	Ambient Air Quality	**Sampling Date & Time**	:	21 to 22 Sep 2023 03.30 pm to 03:30pm
Sample No	:	EN23090804			
Sample Location	:	Mr. Muthusamy House (Nallipalayam)	**Sample Received on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Started on**	:	26 Sep 2023
Relative Humidity	:	56%	**Test Completed on**	:	03 Oct 2023
Sampling Procedure	:	IS 5182 Part V & XIV	**Ambient Temperature**	:	33°C
Sample Submission Type	:	**Collected Lab Representative**			

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO_2	IS 5182 (Part 2):2001	15.50	µg/m³	80
2	Nitrogen Dioxide as NO_2	IS 5182 (Part 6):2006	24.50	µg/m³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	53.80	µg/m³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	19.00	µg/m³	60
5	Ozone as O_3	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m³	4
8	Ammonia as NH_3	GL/EN/SOP/057	BDL(DL:20)	µg/m³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m³	-
13	Hydrogen Sulphide as H_2S*	IS 5182 (Part 7)	BDL(DL:10.0)	µg/m³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3, (38) Nov.2009, against the above tested parameter. *Non NABL Parameter

Note : BDL: Below Detection Limit., DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

Verified By

End of Report

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

Terms and Conditions:
* The Test Results Relate only to the items tested.
* The Test Report Shall not be reproduced in full or part without the written approval of Glens.
* The test items will not be retained for more than 15 days from the date of issue of test report outside in the case as required by the notification regulations.
* The Laboratory's Responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
* A Satisfactory test report in no way implies that the product so tested is approved by NABL.
* Laboratory is not responsible for the authenticity of photocopied test reports.

ANNEXURE XVI

TNPCB REPORT – NOISE MONITORING

Report No.DEL/DGL/20

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Dindigul.

AMBIENT /SOURCE NOISE LEVEL SURVEY – Report of Analysis

Report No.TNPCB/DEL/DGL/F.No.70/NLS/2022-2023, Date:12.05.2023

1.	Name of the Industry	M/s.Tamilnadu Newsprint and Papers Ltd.,		
2.	Address of the Industry	Pulp Plant Division, Kagithapuram – 639 136, Karur District.		
3.	Date of Survey	16.08.2023		
4.	Consent Order No.	No.2307238725381, Dated:13.01.2023		
Category	Red – Large.	Land use classification	Industrial	
Type of Survey	Ambient/Noise	Time of Survey	Day	
Meteorological conditions		Clear Sky		

Logging Parameters

Instrument Used	Larson & Davis	Serial No.	824 A
Logging Interval	...Minutes each point	Measuring Range	40-120
Weighting "A"	Peak Weighting "C"	Time Weighting	A
Sound Incidence	Random / Frontal	Time in hrs	10.00 to 11.30

Report of Noise Level Monitoring

Sl. No	Location	Duration (min)	Distance (m)	Direction	Sound Level dB(A)		
					L_{eq}	L_{min}	L_{max}
1.	<u>LBoundary Line.</u> Near Community Hall Premises.	0.30	750	N	45.9	41.3	55.9
2.	Near Tewlis Pump House.	0.30	400	NE	44.3	38.6	54.8
3.	Near Sludge Gate Premises.	0.30	760	S	52.3	44.5	56.8
4.	Open Field Near Railway Station.	0.30	750	SW	46.8	42.6	55.3
5.	Behind TNPL Temple Premises.	0.30	750	W	51.9	43.7	58.4
6.	<u>AT SOURCE:</u> Paper Machine Area	0.30	-	-	83.6	80.5	92.8
7.	Power Boiler -V	0.30	-	-	89.7	82.3	94.0

End of the report

20/10/23
Env.Scientist

Deputy Chief Scientific Officer
DEL, TNPCB, Dindigul.

LATEST NABL ACCREDITED & MoEF&CC RECOGNIZED THIRD PARTY LAB – NOISE MONITORING TEST REPORT

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

ULR No : TC858223000006973F TO 6980F

Report No	:	**EN23090811 to 0818**	**Report Date**	:	**10 Oct 2023**
Costomer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Description	:	Ambient Noise Level Monitoring			
Sample No	:	FN23090811 to 0818	**Date of Measurement**	:	**21 Sep 2023**
Sampling Procedure	:	IS 9989:1981			
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

S.No	Sample Location	Noise Level dB(A)		CPCB Standards for Noise in Leq dB(A)	
		Day Time	Night Time	Day Limit	Night Limit
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Near Community Hall Premises	67.30	62.10	75 dB(A)	70 dB(A)
2	Near TEWLIS Pump House	68.20	61.60		
3	Near Kandasamy Palayam Baggase Road	66.30	60.60		
4	Infront of reservoir OR-11	69.40	61.30		
5	Near Sludge Gate Premises	68.70	62.70		
6	Opeu Field Near Railway Station	70.20	61.90		
7	Behind TNPL Temple Premises	66.00	60.30		
8	TNPL Staff Quarters (Staff Club Area)	67.20	59.90		

Note: The Noise Pollution (Regulation and Control) Rules,2000 were Published in the Gazette of India, Vide S.O.123(E) ,Dated 14.02.2000

End of Report

Verified By

Authorized Signature
E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 st Floor , Sri Jothi Complex Murugesan Street , Balasivasakthi Nagar, Arumbakkam Chennai 600106

Terms and Conditions:
* The Test Results Relate only to the items tested.
* The Test Report Shall not be reproduced in full or part without the written approval of Glens.
* The test items will not be retained for more than 15 days from the date of issue of test report except in the case as required by the application regulations.
* The Laboratory's Responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
*A Satisfactory test report in no way implies that the product so tested is approved by NABL.
* Laboratory is not responsible for the authenticity of photocopied test reports.

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017 CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

OLR No : TC858223000006981F to 6984F

Report No	:	**EN23090819 to 0822**	**Report Date**	:	**10 Oct 2023**
Costomer Name	:	**M/S. Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Description	:	Work zone Noise Level Monitoring			
Sample No	:	EN23090819 to 0822			
Sampling Procedure	:	IS 9989:1981	**Date of Measurement**	:	**21 Sep 2023**
Sample Submission Type	:	**Collected by Lab Representative**			

Test Results

S.No	Sample Location	Noise Level dB(A)	As Per Indian Factories act 1948
Discipline: Chemical			
Group: Atmospheric Pollution			
1	Lime Kiln Plant II	79.30	90 dB(A)
2	Chemical Baggase Processing Area	80.60	
3	Paper Machine Noise Area I	78.30	
4	Power Boiler V	77.20	

Note: The Noise Pollution (Regulation and Control) Rules,2000 were Published in the Gazette of India, Vide S.O. 123(E) ,Dated 14.02.2000

End of Report

Verified By

Authorized Signature

E. PRITHIVIRAJAN

LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 St Floor , Sri Jothi Complex Murugesan Street , Balaviinayagar Nagar, Arumbakkam Chennai 600 106

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* Laboratory is not responsible for the authenticity of photocopied test reports.

NOISE CONTROL MEASURES

MEASURES TAKEN TO CONTROL NOISE POLLUTION

- High noise generating Vapour Compression System has been replaced with low noise Vapour Absorption Machine in chilling plant operations.
- Reciprocating compressors are replaced with comparatively less noise generating centrifugal compressors
- Boiler start-up vent lines, Boiler safety valves, Steam line safety valves etc are provided with silencers to reduce noise pollution
- In order to minimise the exposure of high noise in compressor house, a separate room has been provided for the working personnel.
- Periodical maintenance and condition monitoring of equipments to minimize noise generation.
- Operators are not exposed near the machine for more period.
- Use of PPEs like Ear muffs and ear plugs by the working personnel in high noise zone is ensured.
- Awareness Boards on Noise Pollution have been displayed in all high noise zones.

ANNEXURE XVII

RAIN WATER HARVESTING FACILITIES AT TNPL

RAIN WATER HARVESTING STRUCTURES AT COLONY AREA

RAIN WATER COLLECTION POND AT COLONY

RAIN WATER HARVESTING AT BOREWELL POINTS

RAIN WATER HARVESTING STRUCTURES AT MILL

Water Reservoirs No : 1 & 2 in TNPL Colony

Substitution of process fresh water with harvested rain water from BR 5

RAIN WATER HARVESTING STRUCTURES AT ADMINSTRATIVE BUILDINGS

Rain water harvesting facilities at TNPL

Sl. No	Description	Roof Area	RWH pits	Collection	Effective area available for recharging
		(Sq.M)	(Nos)	%	(Sq.M)
	Plant Area				
1	Admin Buliding	1,200.00	4	100%	1,200.00
2	Industrial Canteen	1,100.00	6	100%	1,100.00
3	Security Office	430.00	3	100%	430.00
4	Time Office	130.00	5	100%	130.00
5	Telephone Exchange	70.00	2	100%	70.00
6	Civil Office	216.00	4	100%	216.00
7	Safety & Instrumentation	276.00	3	100%	276.00
8	Paper Machine III	11,595.58	24	60%	6,957.35
9	A -Godown	4,900.94	8	50%	2,450.47
10	New Reel Storage Godown	7,181.88	12	50%	3,590.94
11	Multi prupose godown (old compressor house)	738.39	5	100%	738.39
12	Energy Maintance Office	233.20	1	100%	233.20
13	110 KV YARD - MCC	161.60	2	100%	161.60
14	TG # 6	834.15	5	60%	500.49
15	Boiler # 6 Control room	137.32	3	100%	137.32
16	Boiler # 6 - MCC	237.25	2	100%	237.25
17	Boiler # 7 - MCC	81.25	2	100%	81.25
18	RB # 3 Office/ MCC / I/O rack..	808.20	6	100%	808.20
19	Deinking Plant - Type	3,796.00	5	40%	1,518.40
20	Pulper Building	4,551.00	14	80%	3,640.80
21	DIP waste paper Godown	2,135.00	7	75%	1,601.25
	Cement Plant				
22	Admin Buliding	324.82	3	100%	324.82
23	Canteen and Time Office	15.60	3	100%	15.60
24	Marketing Office	100.00	3	100%	100.00
25	Weigh Bridge	14.61	1	100%	14.61
26	CCR Building	358.09	5	100%	358.09
	Housing Colony				
27	Director Bungalow	162.64	2	100%	162.64
28	G.M Bungalow	177.97	4	100%	177.97
29	T.A- Type	514.87	4	100%	514.87
30	A - Type	1,313.01	8	100%	1,313.01
31	B - Type	1,692.94	12	100%	1,692.94
32	C - Type	4,595.72	46	100%	4,595.72

33	D - Type	4,111.52	56	100%	4,111.52
34	E - Type	3,557.62	66	100%	3,557.62
35	F - Type	8,840.15	164	100%	8,840.15
36	Guest House Rooms	194.33	3	100%	194.33
37	Guest House Suits	269.89	3	100%	269.89
38	Officer's Hostel	325.28	2	100%	325.28
39	Guest house Dinning/Kitchen	348.51	4	100%	348.51
40	A - Hostel	548.33	6	100%	548.33
41	B - Hostel	548.33	6	100%	548.33
42	A,B Hostel Dining	443.03	2	100%	443.03
43	Co-operative store	401.02	1	100%	401.02
44	Staff club	627.32	2	100%	627.32
45	Recreation club	318.31	1	100%	318.31
46	Colony maintenance office	103.72	2	100%	103.72
47	Dispensary	168.96	1	100%	168.96
48	OAT	121.75	1	100%	121.75
49	Post office	47.40	1	100%	47.40
50	Post master - Residence	47.86	1	100%	47.86
51	Matriculation School MAIN BLO	1,486.99	30	100%	1,486.99
52	Matriculation School PRIMARY B	1,208.18	28	100%	1,208.18
53	CBSE School	1,951.67	10	100%	1,951.67
54	ITI Building	690.52	12	100%	690.52
55	Bio-Tech Lab	290.06	2	100%	290.06
	Balancing Reservoir Area				
1	Balancing Reservoir Area # 1	32,000.00	1	100%	32,000.00
2	Balancing Reservoir Area # 2	95,000.00	1	100%	95,000.00
3	Balancing Reservoir Area # 3	100,000.00	1	100%	100,000.00
4	Balancing Reservoir Area # 4	112,500.00	1	100%	112,500.00
5	Balancing Reservoir Area # 5	30,000.00	1	100%	30,000.00
6	Rainwater collection bond # 6	5,000.00	1	100%	5,000.00
7	Rainwater collection bond # 7	5,000.00	1	100%	5,000.00
8	Rainwater collection bond # 8	7,450.00	1	100%	7,450.00
9	Rainwater collection bond # 9	2,850.00	1	100%	2,850.00
	Total	**466,534.78**	**627**		**451,799.93**

ANNEXURE XVIII

EC LETTER SUBMITTED TO TOWN PANCHAYAT

TNPL

TAMIL NADU NEWSPRINT AND PAPERS LIMITED

EMS/112/13
March 21, 2013

The Executive Officer,
Kagithapuram Town Panchayat,
Kagithapuram,
Karur Dist.

Sir,

Sub: Implementation of De-Inking plant and up-gradation of Captive Co-generation plant by TNPL- Intimation on receipt of Environmental Clearance- Reg.

Ref: F-No.J-11011/710/2007-IA-II(I) dated 11th February 2013.

With reference to subject matter, it is hereby informed that Ministry of Environment and Forests, New Delhi has accorded "Environmental Clearance" for installation of 300 TPD Deinked Pulp line and up-gradation of Captive Co-generation plant by TNPL vide reference cited above.

A copy of Environmental Clearance letter is enclosed for your information.

Thanking you,

Yours faithfully,
for TAMIL NADU NEWSPRINT AND PAPERS LIMITED,

21.3.13

(R. MANI)
DIRECTOR (OPERATIONS)

21/3/13

Name-Stamp of office of posting

Date-Stamp

Sender's Address : DIRECTOR (OPERATIONS)
Tamil Nadu Newsprint and Papers Ltd.,
KAGITHAPURAM
Karur Dist. Tamil Nadu.

PIN 639136

Em1/112/13

ACKNOWLEDGEMENT RECEIPT

No.

Received a Registered / Insured Letter / Post Card / Packet / Parcel

Addressed to (Name) The Executive officer
Tamil Nadu Kagitha Alaigal
Town Panchayat,
Kagithapuram, Karur Dist.
639 136

Insured for Rupees

Date of Delivery.....20

Score out the matter not required
For insured articles only.

Tamil Nadu Kagitha Alaigal Town Panchayat
Special Grade Town Panchayat
Kagithapuram, Pugalur-639136

Signature of the addressee

ANNEXURE XIX

SUBMISSION OF SIX MONTHLY REPORT DETAILS

SUBMITTING DETAILS OF SIX MONTHLY COMPLIANCE REPORT

Sl No	Description	Submitted on
01	First Report	17/04/2013
02	Second Report	30/11/2013
03	Third Report	29/05/2014
04	Fourth Report	10/12/2014
05	Fifth Report	19/06/2015
06	Sixth Report	26/11/2015
07	Seventh Report	25/06/2016
08	Eighth Report	27/10/2016
09	Ninth Report	27/04/2017
10	Tenth Report	13/11/2017
11	Eleventh Report	12/05/2018
12	Twelth Report	24/11/2018
13	Thirteen Report	08/05/2019
14	Fourteen Report	11/12/2019
15	Fifteenth Report	29/05/2020
16	Sixteenth Report	25/11/2020
17	Seventeenth Report	14/05/2021
18	Eighteenth Report	29/11/2021
19	Nineteenth Report	30/05/2022
20	Twentieth Report	29/11/2022
21	Twenty First Report	13/05/2023
22	Twenty Second Report	**Current Report**

ANNEXURE XX

ENVIRONMENTAL STATEMENT (FORM V)

TNPL

Tamilnadu Newsprint and Papers Limited

(A Government of Tamilnadu Enterprise)

Kagithapuram - 639 136, Karur Dist. Tamilnadu, India.
Phone : (0091) 04324 - 277001 to 277010 (10 Lines)
Fax : (0091) 04324 - 277025 PMD : 04324 - 277027
HR : 04324 - 277273 Cell : 94660 41341 to 41343

ICSI
NATIONAL AWARD
FOR EXCELLENCE IN
CORPORATE GOVERNANCE

TÜV NORD
ISO 9001 / ISO 14001

ENV/15/23
16 September 2023

The District Environmental Engineer,
Tamil Nadu Pollution Control Board,
S.F.No. 654 Part, 656 Part – L.N.S Village,
L.G.B Nagar, Arivutbirukkovil Road,
Karur – 639 002.

Dear Sir,

Sub: **Furnishing of Environmental Statement (Form V) - TNPL Main Plant (Pulp and Paper & Power Plant) - reg.**

We are enclosing the environmental statement pertaining to both TNPL Main Plant (Pulp and Paper Manufacturing Unit) and TNPL Captive Power Plant for the financial year ending 31st March 2023, in Form V duly filled in with all relevant details as per Environment (Protection) Act, 1986 and Rules 1986.

This is for your kind information and records.

Thanking you,

Yours truly,
For TAMIL NADU NEWSPRINT AND PAPERS LIMITED,

16/9/23
Executive Director (Operations) – F A C

CC:

The Joint Chief Environmental Engineer,
Tamil Nadu Pollution Control Board,
No.9, 4th Street, Brindbavan Road,
Fairlands,
Salem- 636 016

19 SEP 2023

FSC
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ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

FORM - V

(See Rule: 14)

Environmental Audit Report for the financial year ending the 31st March 2023.

PART - A

(i)	Name and address of the owner/occupier of the industry, operation or process	:	TAMIL NADU NEWSPRINT AND PAPERS LIMITED
(ii)	Industry category Primary:- (STC code) Secondary:- (SIC code)	:	RED
(iii)	Production capacity - Units		
	Newsprint & Printing and Writing Papers	:	4,80,000 MT/Annum
	Power Generation Capacity	:	103.62 MW
(iv)	Year of establishment	:	1979
(v)	Date of the last environmental Statement submitted	:	26/09/2022

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

PART - B

Water and Raw material consumption

Sl No	Description	UOM	Quantity
01	**Overall Water Consumption**	**KL/day**	**36342**
02	**Process Water Consumption**		
02 a)	Pulp Mill	KL/day	9417
02 b)	Paper Machine, DIP & CAP	KL/day	10936
02 c)	Soda Recovery Plant	KL/day	1495
02 d)	Soft water for process	KL/day	1764
02 e)	Others	KL/day	2539
	Total Quantity for Process use	**KL/day**	**26151**
03	**Cooling Water consumption**		
03 a)	Water used for boiler feed	KL/day	3003
03 b)	Water used for Cooling purpose	KL/day	3808
	Total quantity for cooling purpose	**KL/day**	**6811**
04	**Domestic Water**	**KL/day**	**3379**

Name of products	Process Water consumption (except Domestic) Per unit (MT) of products	
	During the Previous financial year (2021-2022)	During the current financial year (2022-2023)
	(1)	(2)
Writing ahd Printing papers	35 M^3 /t	29 M3 /t

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

(ii) RAW MATERIAL CONSUMPTION FOR PAPER PRODUCTION

SL NO	Name of the raw material	Name of Products	Consumption of raw material per unit of output	
			During the previous Financial year (2021-2022)	During the current Financial year (2022-2023)
Unit of measurement			ADMT/MT of Paper Produced	
01	Bagasse	Newsprint	-	-
02	Wood		-	-
01	Bagasse(Depithed)	Writing and Printing papers	1.99	1.83
02	Wood		1.00	1.03
03	Waste Paper		0.178	0.205
04	Imported Pulp		0.051	0.030

PRODUCTS MANUFACTURED

Writing and Printing papers	:	420793	MT
News Print	:	Nil	MT
Overall daily average Power production	:	59.93	MW
Equivalent Paper Production/Day	:	1153	MT

RAW MATERIAL CONSUMPTION

Bagasse (Depithed)	:	768484	MT
Wood	:	433034	MT
Waste Paper	:	86112	MT
Imported Pulp	:	12754	ADMT

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

PART – C

POLLUTION DISCHARGED TO ENVIRONMENT / UNIT OF OUTPUT
(Parameter as specified in the consent issued)

(a) WATER

(i)	Pollutants	Quantity of pollutants discharged (MTs/day)	Quantity of pollutants discharged in (Kgs/T of paper)	Concentration of pollutants discharged in (mg/l) except % sodium**	Percentage variation from prescribed in discbarges standards with reasons
Water	TSS	1.34	1.16	61	Nil
	TDS at 180^{0}c	31.13	27.00	1420	Nil
	COD	4.70	4.08	215	Nil
	BOD	0.58	0.50	26	Nil
	Chloride	8.43	7.31	385	Nil
	Sulphates	5.96	5.17	272	Nil
	Na (%)	-	-	43	Nil

** As per TNPCB lab results

Section wise average Effluent Water Quantity generation

Sl No	Description	UOM	Quantity
01	Pulp Mill	KL/day	25393
02	Paper Machine	KL/day	11078
03	Deinking pulp Plant	KL/day	1800
04	Soda Recovery Plant	KL/day	2400
05	Others (Energy, WTP, Sewage, canteen, ETP etc.)	KL/day	4500
Avg. Effluent quantity generated		KL/day	**45171**
Avg. treated effluent quantity discharged for irrigation		KL/day	**25918**

(b) AIR

Main Plant (Pulp and Paper manufacturing facility)

Name of pollutant : SPM (mg/NM^3)
Prescribed norms : 150 mg/NM^3

Stack No.	Stack attached to	Average Quantity of poliutants emitted (Kgs per day)	Average Quantity of pollutants emitted in (Kg per ton of paper)	Average Concentration of pollutants emitted in mg/NM^3 **	Percentage variation from prescribed in discharges standards with reasons
3	SRP-LIME KILN I	38.35	0.03	73.5	NIL
35	SRP- Boiler 3	380.86	0.33	68.5	NIL
36	SRP-LIME KILN II	29.03	0.03	68.0	NIL

** As per TNPCB lab results

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

Name of pollutant : H_2S (mg/NM^3)
Prescribed norms : 10 mg/NM^3

Stack No.	Stack attached to	Quantity of pollutants emitted (Kgs per day)	Quantity of pollutants emitted in Kg per ton of paper	Concentration of pollutants emitted in mg/NM^3 **	Percentage variation from prescribed in discharges standards with reasons
3	SRP-LIME KILN I	0.110	0.0001	0.204	NIL
35	SRP- Boiler 3	1.181	0.0010	0.210	NIL
36	SRP-LIME KILN II	0.089	0.0001	0.210	NIL

** As per TNPCB lab results

Name of pollutant : SO_2 (mg/NM^3)
Prescribed norms : 400 mg/NM^3

Stack No.	Stack attached to	Quantity of pollutants emitted (Kgs per day)	Quantity of pollutants emitted in Kg per ton of paper	Concentration of pollutants emitted in mg/NM^3 **	Percentage variation from prescribed in discharges standards with reasons
3	SRP-LIME KILN I	23.74	0.020	45.5	NIL
35	SRP- Boiler 3	256.08	0.222	45.5	NIL
36	SRP-LIME KILN II	16.86	0.014	39.5	NIL

** As per TNPCB lab results

Name of pollutant : NO_x (mg/NM^3)
Prescribed norms : 500 mg/NM^3

Stack No.	Stack attached to	Quantity of pollutants emitted (Kgs per day)	Quantity of pollutants emitted in Kg per ton of paper	Concentration of pollutants emitted in mg/NM^3 **	Percentage variation from prescribed in discharges standards with reasons
3	SRP-LIME KILN I	20.09	0.017	38.5	NIL
35	SRP- Boiler 3	211.01	0.183	37.5	NIL
36	SRP-LIME KILN II	13.871	0.012	32.5	NIL

** As per TNPCB lab results

RECOVERY BOILERS:

No of Boilers — One

Type of Fuel — Black Liquor Dry Solids & Furnace Oil

Type of firing — Spray thro' nozzles

Average Quantity of Fuel Fired in boilers

Description	Type of fuel used	
	Black Liquor Dry Solids	Furnace Oil
UOM	MT/hr	KL/hr
Recovery Boiler 3	51.05	0.10

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

LIME KILN:

No of units — Two

Type of Fuel — Furnace Oil & Bio Gas

Type of firing — Spray thro' nozzles

Average Quantity of Fuel Fired in Lime Kiln

Description	Type of fuel used	
	Furnace Oil	Bio Gas
UOM	KL/hr	M^3/hr
Lime Kiln 1	0.79	616.78
Lime Kiln 2	0.77	470.12

CAPTIVE POWER PLANT

Name of pollutant : **SPM (mg/NM^3)**
Prescribed norms : Power Boiler 4 &5 -100mg/NM^3
Power Boiler 6 &7 - 50mg/NM^3

Serial No.	Staek attached to	Quantity of pollutants emitted (Kgs per day)	Quantity of pollutants emitted in (Kg per ton of paper)	Concentration of pollutants emitted in mg/NM3 **	Percentage variation from prescribed in discharges standards with reasons
1	Power Boiler 4	115.66	0.10	30.0	NIL
2	Power Boiler 5	77.42	0.07	28.5	NIL
3	Power Boiler 6	156.39	0.14	27.5	NIL
4	Power Boiler 7	85.23	0.04	26.0	NIL

**** As per TNPCB lab results**

Name of pollutant : **SO_2 (mg/NM^3)**
Prescribed norms : Power Boiler 4 to 7 -600mg/NM3

Serial No.	Stack attached to	Quantity of pollutants emitted (Kgs per day)	Quantity of pollutants emitted in (Kg per ton of paper)	Concentration of pollutants emitted in mg/NM3 **	Percentage variation from prescribed in discharges standards with reasons
1	Power Boiler 4	246.75	0.214	64.0	NIL
2	Power Boiler 5	160.29	0.139	59.0	NIL
3	Power Boiler 6	301.49	0.261	53.0	NIL
4	Power Boiler 7	157.35	0.068	48.0	NIL

**** As per TNPCB lab results**

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

Name of pollutant : **NOx (mg/NM^3)**
Prescribed norms : Power Boiler 4 &5 -600 mg/NM^3
Power Boiler 6 &7 -450 mg/NM^3 (As per MoEF Notification dated 19.10.2020)

Serial No.	Staek attached to	Quantity of pollutants emitted (Kgs per day)	Quantity of pollutants emitted in (Kg per ton of paper)	Concentration of pollutants emitted in mg/NM3 **	Percentage variation from prescribed in discharges standards with reasons
1	Power Boiler 4	223.61	0.193	58.0	NIL
2	Power Boiler 5	123.67	0.107	45.5	NIL
3	Power Boiler 6	264.48	0.229	46.5	NIL
4	Power Boiler 7	127.85	0.055	39.0	NIL

**** As per TNPCB lab results**

POWFR BOILERS:

No of Boilers — 4 operating + 3 standby (from 26/12/2013)

Type of fuet — Muitifuei

Type of firing — Fluidised bed

Average Quantity of Euet Eired in boilers

Description	Indigenous Coal	Imported Coal	Raw Lignite	Bagasse Pith	Wood Dust
UOM	Kg/hr	Kg/hr	Kg/hr	Kg/hr	Kg/hr
Boiler 4	436	9478	405	0	0
Boiler 5	550	12309	811	6288	50
Boiler 6	804	14690	928	9074	0
Boiler 7	801	15354	1307	8475	0

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

PART - D

Hazardous Wastes

(In accordance with Hazardous Wastes (Management and Transboundary Movement) Rules,2016

		TOTAL QUANTITY in MT	
	Unit of measurement	During the previous financial year 2021-2022	During the current financial year 2022-2023
(1) From Process section			
(a) Spent chemical - Lime sludge (Moisture:45-50%)	MT	265204	123100
(b) Spent chemical - Lime Grits (Moisture:20-25%)	MT	3906.64	3894.58
(2) From Pollution Control Facilities			
(a) ETP Primary Sludge (Moisture:75-80%)	MT	48716.97	37727.71
(3) From Maintenance section			
(a) Condemned lead acid Batteries generated during replacement at Automobile and Electrical departments	MT	6.95	5.53
(b) Waste containing copper and copper alloys	MT	7.25	8.26
(c) Discarded asbestos generated during demolition of redundant buildings and structures	MT	0	0
(d) Used Glass wool generated during steam line insulation replacement	MT	17.56	8.89
(e) Spent ion exchange resins generated in Water Treatment Plant	MT	0	0
(f) Used oil/spent oil generated from industrial operations as lubricant in hydraulic systems or other operations	MT	62.53	71.31
(g) Exhausted Lithium Molecular Sieves generated from Oxygen Plant	MT	0	2.98

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

PART – E

Solid Wastes Generation Quantity

	During the previous financial year 2021-2022	During the current financial year 2022-2023
(a) From Process		
DEINKING PLANT		
Plastic generated from Waste Paper Process (Moisture: 30%)	2904.76	3819.33
Sludge generation from Deinking Plant	35608.44	34006.62
PULP MILL		
Wood bark / dust from wood handling (Moisture: 45-50%)	11963.01	14258.94
Pith from Pulp Mill (Moisture: 45-50%)	141496	155077
Hardwood Screen fine rejects (Moisture: 60-65%)	1425.00	1342.48
(b) From Pollution Control facility		
EFFLUENT TREATMENT PLANT		
MLSS – ETP secondary sludge (on dry basis)	3530	3935
POWER BOILER		
Wet ash generated	2083	3674.64
Fly ash generated	33809.00	33756.08

Solid Wastes Recycle/Sold/ Disposal/ Quantity

(c).(1).Solid waste recycled or re-utilized		
Wood bark / dust (Muisture:25-30%) as fuel in Power Boilers	0	0
Wood bark / dust (Moisture:25-30%) as fuel in TNPL Mini Cement Plant	11815	11451
Pith from Pulp Mill (Moisture:45-50%) as fuel in Power Boilers	169267	169663
Fly ash used for TNPL Cement production.	32325.64	33756.08
Wet ash used for TNPL Cement production.	940.07	714.67
Sludge from Deinking Plant used in TNPL Cement for production. (Moisture: 45-50%)	5563.70	1570.69
(c).(2).Solid Waste Sold		
Pith (Moisture: 45-50%)	4039.28	15.63
Fly ash	2166.85	0
Bottom ash	263.03	0
Wet Fly ash	0	10546.66
Wood bark	1347.07	1844.85
Hardwood Screen fine rejects (Moisture: 60-65%)	1530.63	933.77
(c).(3).Solid Waste Disposed		
Sludge from Deinking Plant (Moisture: 45-50%)	30044.74	32435.93
Plastic generated from Waste Paper Process (Moisture: 30%)	2904.76	3819.33

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

PART – F

The characteristics of solid as well as Hazardous wastes and disposal practice adopted are given below.

HAZARDOUS WASTES

Sl No	Description	Major Constituents	Mode of disposal
From Process section			
01	Spent chemical - Lime sludge (Moisture: 45 to 50%)	Acid insolubles:6-7% Silica as SiO2: 6% Mixed Oxides (R2O3): 1.6% Calcium as CaCO3: 87.8% Magnesium as MgCO3:1.54% Free CaO: 0.76% Sodium as Na2O: 1.67%	FY 2022-23 disposal details: Reused in TNPL Cement Plant- 121500 MT
02	Spent chemical - Lime grits (Moisture: 20 to 25%)	Acid insolubles:10% Silica as SiO2: 10% Mixed Oxides (R2O3): 3.1% Calcium as CaCO3: 81.2% Magnesium as MgCO3:2.76% Free CaO: 2.04% Sodium as Na2O: 1.09%	Lime Grit is being consumed as raw material in TNPL Cement Mill.
(2) From Pollution Control Facilities			
03	ETP Primary Sludge (Moisture:75-80%)	Gross Calorific value: 2300-2700 Kcal/kg (OD oasis) Organics:60-70% Inorganics:30-40%	Entire quantity sold as raw material to small cardboard industries.
(3) From Maintenance section			
04	Condemned lead acid Batteries	Wastes mainly contains Lead	Disposed to PCB authorized recyclers.
05	Waste containing copper and copper alloys	Wastes mainly contains copper and its alloy such as brass, bronze etc.	Disposed to PCB authorized recyclers.
06	Discarded asbestos	Lead (Total): 53.7mg/Kg Chromium (Total): 28.64mg/kg Nickel (Total): 90.87mg/Kg Zinc (Total): 21.28mg/Kg Copper (Total): 60.3 mg/Kg	No disposal during FY 2022-23.
07	Used Glass wool	Lead (Total): 43.29mg/Kg Chromium (Total): 41.07mg/kg Nickel (Total): 32.81mg/Kg Zinc (Total): 20.05mg/Kg Copper (Total): 49.89 mg/Kg	Disposed to M/s. Re sustainebility IWM solutions ilmited, Virudhunagar for direct land filling.
08	Spent ion exchange resins	Calorific Value: 5777 Cal/g Lead (Total): 65.49mg/Kg Cbromium (Total): 20.62mg/kg Nickel (Total): 33.58mg/Kg Zinc (Total): 24.64mg/Kg Copper (Total): 30.32 mg/Kg	No disposal during FY 2022-23.
09	Waste Oil	Chromiom: 0.15ppm Total Halogens: 3805 ppm Lead: 3.85 ppm Nickel: 0.18 ppm	Disposed to PCB authorized recyclers

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

SL No	Description	Major Constituents	Mode of disposal
10	Exhausted Lithium Molecular Sieves	Lead (Total): 171.51mg/Kg Chromium (Total): 6.3mg/kg Nickel (Total): 29.31mg/Kg Zinc (Total): 25.88mg/Kg Copper (Total): 9.2 mg/Kg	No disposal during FY 2022-23.

SOLID WASTE

SL No	Description	Major constituents: (all values are on OD basis)	Mode of disposal
01	Wood bark/ dust from Chipper house (Moisture:25-30%)	Ash:2.4% Volatile matter:71.5% Fixed carboa:18.9% Gross calorific value:4000-4600 Kcal/kg	Wood dust is used as fuel in Power Boiler. Wood bark is sold as fuel to agencies gencrating power through bio mass.
02	Wet Ash	Ash : 90-95 % LOI : 3 to 5%	Used as raw material for TNPL Cement mill and disposed to brick manufacturing units.
03	Fly Ash	Ash: 88 to 92% tOI: 8 to 12%	Used as raw material for TNPL Cement mill and other cement mills. Balance disposed for brick manufacturing units and traders possessing TNPCB consent orders.
04	MLSS - ETP secondary sludge	Absorbable Organic Halide-BDL	Composted and Used as manure
05	Pith (Moisture:45-50%)	Ash: 9% Volatile matter:72% Fixed carbon:13% Gross calorific value:4000 -4200 Kcal/kg	Used as fuel in power boilers. A small quantity is disposed to cardboard manufactures as raw material.
06	Dip Sludge (Moisture @ 40-50 %)	Gross Calorific value: 1400-1700 Kcel/kg (OD basis) Organics :30% Inorganics: 70%	Part of waste is being used as raw material in TNPL Mini Cement Plant and balance disposed to small cardboard industries.
07	Plastic Generated from waste paper	Received various types of plastic wastes along with waste paper consignment	Disposed to Cement Plant for co – Processing.

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

PART - G

Impact of the Pollution Control Measures on conservation of natural resources and its consequence on the cost of production.

- The bio-gas generated in Bio-methanation plant using high COD bagasse wash effluent is being used in the lime kilns to replace furnace oil leading to reduce Carbon footprint. During 2022-23, TNPL utilized 84.81 Lakh m3 of biogas in Lime Kiln and 2.43 Lakh m3 of biogas in Power Boilers resulted in savings of 5088.90 KL of Furnace oil and 432 MT of imported coal respectively. Further, by utilizing about 170083 MT of internally generated agro fuels such as Rith, Wood dust as fuel in Power Boilers has resulted in conservation of about 52902 MT of Imported coal.

- TNPL is playing a significant role in the non-conventional energy. The company has generated 394.59 lakh units of wind power during FY 2022-23 through wind turbines thereby reducing 36737 tCO_2 GHG emissions.

- TNPL has implemented various water conservation projects and has attained overall water consumption of about 29 KL Per ton of paper during FY 2022-23 which is one of the lowest in paper industry.

- To improve the pulpwood availability, TNPL has developed two plantation schemes, viz., Farm Forestry and Captive Plantation during 2004-05 with a view to develop the vacant and degraded lands belonging to farmers and Government sources respectively. During FY 2022-23, plantations were raised in 22495 acres of barren lands involving 5369 farmers in various parts of Tamil Nadu under Farm Forestry scheme. So far, pulp wood has been raised in 233774 acres involving 45738 farmers under Farm Forestry Scheme. This scheme helps the dry land farmers to improve their livelihood. Further, the efforts put in by TNPL for raising pulpwood plantation started yielding benefits from FY 2009-10.

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

- During FY 2022-2023, TNPL has procured 533320 MT of pulpwood from the plantation sources in which about 515322 MT from Farm forestry and balahce 17998 MT from Captive Plantation sources. Further, so far, 26.39 lakhs MT of pulpwood have beeh procured from the above plantation sources during last Fourteen years.

- TNPL has established a state of the art clonal production centre with a capacity to produce 55 million plants per annum to supply quality clones to farmers at subsidized rates. TNPL has produced 464 Lakh plants and supplied 463 lakh plants to the farmers field at subsidized rates during FY 2022-2023 to cover an extent of 22495 acres under plantadon activity.

- TNPL has established a Biodiversity park by assembling more than 176 species of trees/shrubs comprising of flowering, fruit bearing, medicinal, ornamental, timber etc. in about 6.07 hectares of land at TNPL Housing colony area under the concept of biodiversity enrichment to sustain the green environment. The ecosystem maintained in the Biodiversity Park is assessed periodically for effective monitoring of flora and fauna in the park. As the trees are started flowering/fruiting, resulted in attracting fauna which includes butterflies, birds, reptiles, insects which are being evidenced at site. This facilitates the improvement of Biodiversity by introduction of new species by pollination, seeds transfer through migratory birds. In future, it is planned to undertake a detailed study on the flora and fauna in the Biodiversity Park.

BIODIVERSITY PARK

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

- About 30% of the pulpwood used in the process is certified by FSC which guarantees that the pulp wood plantations are managed in a socially and environmentally responsible way.

- TNPL has been awarded Forest Stewardship Council (FSC) certification for Forest Management and Chain of Custody. This certificate confirms the linkage between forest and end user, ensuring that products with FSC label uphold principle and criteria which bring the highest social and environmental benefits. Further, FSC label will ensure the customers that the input material has been produced from scientifically managed, environmentally responsible forest plantation.

- Post consumer reclaimed material and pre consumer reclaimed material (Waste fibre consumed in De-inking plant) is also included in the scope of Forest Stewardship Council certification from the year 2014.

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

Recognition for Environmental Protection:

- TNPL has been declared as **"Winner"** of 1st **Sustainable Industrial Practice Award** for the year 2023 conducted by M/s Federation of Indian Chambers of Commerce and Industry, New Delhi

- TNPL has been honored as **"CHAMPION"** in the **"Water Stewardship Award"** category during India Corporate Governance and Sustainability Vision Summit 2023 conducted by Indian Chamber of Commerce, Kolkata in Mar'2023.

- TNPL has been declared as **"WINNER"** under **EHS Best practices category"** for the year 2023 conducted by M/s Greentech Foundation (GF), New Delhi

- TNPL won **"Green Champion Award"** for the financial year 2022-23 conducted by Tamil Nadu Pollution Control Board.

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

PART – H

Additional measures / Investment proposals for Environmental Protection including Abatement of Pollution, Prevention of Pollution

- During the Past, TNPL implemented various expansion/modernization programmes mainly focusing on the Environmental benefits as explained below:

Sl No	Name of the Project	Completion Period and investment	Environmental Benefit	Improvement on Production
01	Mill Development Plan (MDP)	May '08 & Rs.612 Crores	Switching over from conventional bleaching to Elemental Chlorine Free bleaching (ClO2) in both Hardwood and Chemical haggaso bleaching section.	Paper Production from 2.05Lakh to 2.45Lakh per annum Pulp increased from 530TPD to 800 TPD
02	Mill Expansion Plan (MEP)	Jan '2011 & Rs.230 Crores	introduced Environment friendly technologies such as Oxygen delignification and twin roll washers & Hot stock screening technologies in the chemical bagasse pulping line along with a new paper Machine	Paper Production from 2.45Lakh to 4.0 Lakh per annum. Further, Total pulp production increased to 880 TPD.
03	Deinked Pulp (DIP) plant & Upgradation of Power Plant	Nov'2013 & Rs.310 Crores	Implemented 300TPD Deinked pulp plant by utilizing waste paper as raw material to replace high cost imported pulp possessing environment friendly operations and no bleaching chemicals such as ClO2 is utilized.	No increase in paper production. With 300TPD of DIP, Total Pulp Production increased to 1180TPD. Power generation increased from 81.12 to 103.62MW.

- Towards manufacture of Deinked pulp, mostly imported Sorted Office Waste Papar were used. This waste paper is made up of soft wood fibre which is having higher fibre length. This high quality is having superior strength properties (tear factor) when compared with home made Hard wood and Chemical Bagasse Fulp. This property of soft wood fibre helps to improve the machine ronnability and pave way to roduce paper breaks on the machine.
- The principle of Paper Making is formation of fiber mat (Fulp) and filling the gaps with chemicals (filler materials). Based on the R&D studies and subsequent implementation of strategy in production activities in the past, it was inferred that the enhancement of filler in paper results in increase the weight of the paper without pulp requirement.
- During FY 2022-23, the average ash content in paper was varying from 14.00 to 19.00 % subject to quality of Paper Production, the higher percentage of Ash in Paper resulted in increasing the Paper Production at lower cost.
- During FY 2022-2023, TNPL utilized about 12754 MT of purchased pulp. Usage of purchased pulp for production have not contribute to pollution load of the mill.

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

PART - I

Other particulars for improving quality of Environment

- The effluent treatment plant is operated with activated sludge process to maintain the quality of treated effluent within the norms prescribed by Tamil Nadu Pollution Control Board.
- The following process modifications were carried out as part of fresh water conservation and subsequently achived 29 KL/MT of Paper produced, the lowest water consumption unit in India.
  - Polishing excess clear filtrate of PM#1 osing Aigas filter.
  - Recycling of around 9000 M3/day Paper Machine Effluent after clarification in raw material preparation
  - Recycling of around 1800 M3/day EOP alkaline filtiate in post Oxygen washer in hardwood fiber line operations by close looping Extraction stage effluont from hardwood into the brown loop
  - Return of pump seal water and hydraulic oil cooling water in Hardwood Street to water treatment plant.
  - Replacement of fresh water with Machine backwater for wet lap usage
  - Collection of all plug screw feeders gear box cooling water and all seal water outlet and pump to LC tank for process usage in Chemical Bagasse street.
  - Return of hydraulic oil pump cooling water to WTP in Chemical Bagasse streot.
  - Diversion of SRP Foul condensate water to hot water system in Chemical Bagasse street.
  - Replacement of fresh water in Mud filter vacuum pump with process condensate.
  - Return of ID, FD cooler water and feed pump cooler water of RB#2 to water treatment plant.
  - Return of lime kiln support roller bearing cooler water to water treatment plant.
  - Plugging of all water pumps sealing outlet.
  - Replacement of fresh water with backwater for cleaning.
  - Providing On-off value in Deculator vacuum pump to avoid overflow in PM#1 Deculator seal pit.
  - Diversion of vacuum pump gear box cooling water in PM#1 to warm water tank.
  - Diversion of excess cooling water collection tank to sweat dryer tank.
  - Diversion of steam and condensate pump sealing water of PM#2 to warm water tank from culver pit.
  - Replacement of fresh water with clear water for acceleration dilution of filler/starch in PM#3.
  - Divarsion of Deculator seal pit tank over flow to cooling back water tank in PM#3.
  - Pecovery of Metso refiner heat exchanger cooling water.
  - Recovery of refiners, screen and pumps seal water in PM#3.
  - Recycling and uses of press Felt Uhle box water thruugh Algas filter in PM #1

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

MEASURES TAKEN TOWARDS TDS REDUCTION

- Oxygen delignification and twin roll presses were Introduced in both Hardwood and Bagasse puloing street. The twin roll presses are more efficient in washing, and COD carryover in pulp into bleach plant is reduced and so also the TDS. The O2 delignification reduces the lignin carryover to hteach plant by 30-40%, resulting in corresponding reduction in bleach chemicals and thus eouivalent reduction in TDS into effluent from bleacb plant.
- Paper machine effluent is being segregated and clarified separateiy to remove the suspended solids and the clarified water is being used in backwater clarifications replacing treated effluent as a measure to reduce TDS in the treated effluent.
- Recycling of EOP alkaline filtrate in post Oxygen washer in both Hardwood & Chemical Bagasse Puloing operations. Introduction of organic peroxide stabilizer in Deinking Pulp bleaching operation resulted in 50% Sodium silicate reduction to acnieve equivaient reduction of TDS in the respective effluent stream.
- Usage of ferrous chloride has been stopped for tbe treatment nf anaerobic effluent in ETP.
- Tbe soft water supplied to Chlorine Di Oxide plant and VAM has been replaced with R.O. water. Similarly, Soft water has been replaced with precess water in cooling towers and pulp mills. Furtber, Filtered water is being used in piace of soft water for NIPCO bydraulic system. This resulted in stoppage of soft water generation and thos paved way for reduction of TDS from the WTP effluent stream.

A report on the "World Environment Day" celebrations carried out by TNPL during 2023 is enclosed herewith as Annexure I.

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

ANNEXURE I

REPORT ON WORLD ENVIRONMENT DAY- 2023 CELEBRATIONS CONDUCTED AT TNPL

- On behalf of Tamilnadu Newsprint and papers limited, on Monday 5th of June, Environment Day was celebrated at Paper Manufactudng indostry and Cement Manufacturing industry, Kagithapuram, Pugalur. Banners were also displayed near the plant entrances and time office to create awereness on various environmental issues including the environmental tbeme of tbe year 2023, "Beat Plastic Follution".

- This year's environment theme is "Beat Plastic Foliution "and to empbasize environment friendly lifestyle as proposed by Tamilnadu Pollution Control Board, the officers, Staffs, workmen, contract workmen and Apprentice in tbe Paper plant premises and cement plant premises have taken environmental pledge.

- As part of these celeorations, an environmental awareness Green Bun (Greenathon) was flagged off by Mr. Bandi Gangadhar, Chief vigilance Officer, Tamilnadu Newsprint and Paper Limited, in which both genders above the age of fifteen participated in Greenathon ano took part in covering a distance of about five kilo meters.

- All 500 people who pre-registered for above green run were given a free eco-friendly T-shirt made by recyclable plastic materials on bebalf of TNPL. Prizes wortb Rs.10,000, Rs.7,500, and Rs.5,000 were awarded to the first, second, and third winners of Greenathon in each category (men and women).

- Dr.R.Seenivasan Chief General Manager (Plantation, R&D and SO), TNPL welcomed the participants in the prize distribution ceremony of Greenathon. The award ceremony was presided over by Mr. Bandi Gangadhar, Chief vigilance Officer, TNPL in the presence of Mr. S.V.R. Krishnan, ED (Operation), Mr. Gunasekaran, Chairman, Pugalur Municipality and Mr. Jayakumar, Assistant Environmental Engineer, TNPCB, Karur were invited has the guest of honor for the ceremony.

- Mr. Sundaravathanam, Superintendent of Police, Karur, who delivered a special speech and distributed tbe prizes to the winners and participants of the competition. He releesed TNPL's Environment Friendly Lifestyle Pocket Guide, which was received by Mr. Jayakumar, Assistant Environmental Engineer, TNPCB, Karur.

ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR 2022-2023

- Subseqoently, in order to protect the environment, the special representatives who participated in tho ceremony and the officials of TNPL planted 4000 saplings in the residentiel premises of TNPL. Around 500 employees including contract workmen participated in the celebrations. The celebration was well organized by Environment and Plantation Department.

ANNEXURE XXI

DIP- ENVIRONMENTAL CLEARANCE - NEWSPAPER ADVERTISEMENT

TNPL/27/301 March 4, 2013

The Chief Conservator of Forests (Central),
Ministry of Environment & Forests
Regional office (South Zone),
4th Floor E & F Wings,
Kendriya Sadan,
II Block, Koramangala,
Bangalore -34

Dear Sir:

Sub: Installation of 300 TPD Deinked Pulp Line (DPL) and up-gradation of Captive Cogeneration Plant (CCP) at Kagithapuram, District Karur in Tamil Nadu by M/s Tamil Nadu Newsprint and Papers Limited

Ref: Environmental Clearance vide F.No.J-11011/710/2007-IA-II (I) dated 11th February 2013

We would like to acknowledge with thanks the receipt of the Environment Clearance for the subject project, vide the orders referred above.

As stipulated in the Clause # xiv of General Conditions of the Order, we have issued a Public Notice on 27th February 2013, in two local newspapers, one in English and the other in Tamil.

A copy of the advertisement is attached for your kind reference and records.

Thanking you,

Yours faithfully
for **TAMIL NADU NEWSPRINT AND PAPERS LIMITED**

ASST. GENERAL MANAGER (PROJECTS)

Encl: a.a

தினமணி 27 பிப்ரவரி, 2013

TNPL தமிழ்நாடு செய்தித்தாள் மற்றும் காகித நிறுவனம்

[illegible]

பொது அறிவிப்பு

தமிழ்நாடு செய்தித்தாள் காகித நிறுவனத்தில் நாளொன்றுக்கு 300 டன் வாழ்க்கைப் காகிதக்கூழ் பிரிவு மற்றும் மின் உற்பத்தி மேம்படுத்தும் திட்டம் ஆகியவற்றைச் செயல் படுத்துவதற்கு மத்திய சுற்றுச் சுற்றுச்சூழல் மற்றும் வன அமைச்சகம், புதுடெல்லி தனது 11 பிப்ரவரி 2013 தேதியிட்ட ஆணையின் மூலம் சுற்றுச்சூழல் அனுமதி வழங்கியுள்ளது என இதன் மூலம் அறிவிக்கப்படுகிறது.

மேற்படி அனுமதி நகலை தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரிய அலுவலகத்தி லும் மற்றும் சுற்றுச்சூழல் மற்றும் வன அமைச்சகத்தின் இணையதளமான http://www.envfor.nic.in -லும் பார்த்து தெரிந்து கொள்ளலாம்.

முதன்மை பொது மேலாளர் (இயக்கம்)

THE NEW INDIAN EXPRESS
CHENNAI WEDNESDAY 27 FEBRUARY 2013

TNPL TAMILNADU NEWSPRINT AND PAPERS LIMITED

KAGITAPURAM 639 136, KARUR DIST., TAMIL NADU, INDIA
PHONE 04324 27730[illegible] FAX: 04324 - 277021
Mail [illegible]@[illegible]

PUBLIC NOTICE

This is to inform that Ministry of Environment & Forests, New Delhi has accorded Environmental clearance for implementation of the projects for Installation of 300 tpd Deinked Pulp line and upgradation of Captive Co-generation Plant (CCP) of Tamil Nadu Newsprint and Papers Limited, vide its Order dated 11th February 2013.

Copies of the clearance letter are available with the Tamil Nadu State Pollution Control Board and may also be seen at the Website of the Ministry of Environment and Forests at http://www.envfor.nic.in.

CHIEF GENERAL MANAGER (OPERATIONS)

CPR/119/Engg./2013 [illegible]

ANNEXURE XXII

LATEST NABL ACCREDITED & MoEF&CC RECOGNIZED THIRD PARTY LAB - H_2S AND MERCAPTANS REPORT

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017. CERTIFIED AS PER ISO 9001 & ISO 45001 : 2018

TEST REPORT

Report No	:	**EN23050720 TO 722**	**Report Date**	:	**08 May 2023**

Sample submission Type: Collected by Lab Representative

Customer Name	:	**M/S.Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur - 639136.			
Sample Code	:	EN23030072-49 TO 51	**Sampling Date**		25 April 2023
Sample Name	:	NCG Emission	**Sample Received on**	:	02 May 2023
Sample Code	:	EN23050720 TO 722	**Test Started on**	:	03 May 2023
Sample Condition	:	Fit for Analysis	**Test Completed on**	:	04 May 2023

Test Result

S.No	Sampling Location	Concentration of H_2S	Concentration of Mercaptans
1	Hardwood	0.53 (mg/m3)	0.46 µg/m3
2	Soda Recovery Plant	0.6 (mg/m3)	0.59 µg/m3
3	Paper Machine	0.72 (mg/m3)	0.63 µg/m3

Note: BDL-Below Detection Limit, DL- Detection Limit

End of Report

Verified by

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

#6/1,1st Floor, Sri Jothi Complex, Murugesan Street, Balavinayagar Nagar,Arumbakkam, Chennai - 600106.

Terms and Conditions:
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WARNING: Attention is drawn to the limitations of the liability, indemnification and jurisdictional issues established there in any holder of their document is advised that information contained hereon reflex the company's findings at the time of its intervention only and within the limits of client's instructions, if any. The company's sole responsibility is to its client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document.

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TC - 8582

TEST REPORT

Report No	:	EN23051322 to 1324	**Report Date**	:	26 May 2023
Customer Name	:	M/S.Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Code	:	EN23051322 to 1324	**Sampling Date**		16 May 2023
Sample Name	:	NCG Emission	**Sample Received on**	:	18 May 2023
Sample Code	:	EN23051322 to 1324	**Test Started on**	:	19 May 2023
Sample Condition	:	Good	**Test Completed on**	:	26 May 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Result

S.No	Sampling Location	Concentration of H_2S	Concentration of Mercaptans
1	Hardwood	0.3 (mg/m3)	0.41 µg/m3
2	Soda Recovery Plant	0.56 (µg/m3)	0.38 µg/m3
3	Paper Machine	0.75 (mg/m3)	0.45 µg/m3

Note: BDL-Below Detection Limit, DL- Detection Limit

*****End of Report*****

Verified By

Authorized Signature
E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 St Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600106

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GLens Innovation Labs Pvt Ltd.

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TEST REPORT

Report No	:	**EN23060549 to 0551**	**Report Date**	:	**26 June 2023**
Customer Name	:	**M/S.Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Code	:	EN23060549 to 0551	**Sampling Date**		14 June 2023
Sample Name	:	NCG Emission	**Sample Received on**	:	16 June 2023
Sample Code	:	EN23060549 to 0551	**Test Started on**	:	16 June 2023
Sample Condition	:	Good	**Test Completed on**	:	26 June 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Result

S.No	Sampling Location	Concentration of H_2S	Concentration of Mercaptens
1	Hardwood	0.28 (mg/m3)	0.31 µg/m3
2	Soda Recovery Plant	0.52 (mg/m3)	0.25 µg/m3
3	Paper Machine	0.65 (mg/m3)	0.38 µg/m3

Note: BDL-Below Detection Limit, DL- Detection Limit

End of Report

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

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GLens Innovation Labs Pvt Ltd.

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TEST REPORT

Report No	:	**EN23070633 TO 0635**	**Report Date**	:	**27 July 2023**
Customer Name	:	**M/S.Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Description	:	Work zone Noise	**Sampling Date**		17 July 2023
Sample Name	:	NCG Emission	**Sample Received on**	:	21 July 2023
Sample Code	:	EN23070633 TO 0635	**Test Started on**	:	22 July 2023
Sample Condition	:	Good	**Test Completed on**	:	27 July 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Result

S.No	Sampling Location	Concentretion of H_2S	Concentration of Mercaptans
Discipline: Chemical			
Group: Atmospheric Pollution			
1	Hardwood	0.62 (µg /m3)	0.28 mg/m3
2	Soda Recovery Plant	0.53 (µg /m3)	0.35 mg/m3
3	Paper Machine	0.70 (µg /m3)	0.42 mg/m3

Note: BDL-Below Detection Limit, DL- Detection Limit

End of Report

Verified By

Authorized Signature

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LAB MANAGER

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GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TEST REPORT

Report No	:	**EN2308076R to 0770**	**Report Date**	:	**01 Sep 2023**
Cosromer Name	:	**M/S.Tamilnadu Newsprint & Papers Ltd,**			
Customer Address	:	Kagithapuram, Karur – 639136.			
			Sampling Date		22 Aug 2023
Sample Name	:	NCG Emission	**Sample Received on**	:	24 Aug 2023
Sample Code	:	EN23080768 to 0770	**Test Started on**	:	25 Aug 2023
Sample Condition	:	Good	**Test Completed on**	:	30 Aug 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Result

S.No	Sampling Location	Concentration of H_2S	Concentration of Mercaptans
Discipline: Chemical			
Crodp: Atmospheric Pollation			
1	Hardwood	0.72 (mg/m3)	0.79 µg/m3
2	Soda Recovery Plant	0.55 (mg/m3)	0.92 µg/m3
3	Paper Machine	0.87 (mg/m3)	0.94 µg/m3

Note: BDL-Below Detection Limit, DL- Detection Limit

*****End of Report*****

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

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GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TEST REPORT

Report No	:	**EN23090843 to 0845**	**Report Date**	:	**10 Oct 2023**
Customer Name	:	**M/S.Tamilnadu Newsprint & Papers Ltd.**			
Customer Address	:	Kagithapuram, Karur - 639136.			
			Sampling Date		22 Sep 2023
Sample Name	:	NCG Emission	**Sample Received on**	:	26 Sep 2023
Sample Code	:	EN23090843 to 0845	**Test Started on**	:	26 Sep 2023
Sample Condition	:	Good	**Test Completed on**	:	03 Oct 2023
Sample Submission Type	:	**Collected by Lab Representative**			

Test Result

S.No	Sampling Location	Concentration of H_2S	Concentration of Mercaptans
Discipline: Chemical			
Group: Atmospheric Pollution			
1	Hardwood	0.73 (mg/m3)	0.64 µg/m3
2	Soda Recovery Plant	0.50 (mg/m3)	0.88 µg/m3
3	Paper Machine	0.89 (mg/m3)	0.75 µg/m3

Note: BDL-Below Detection Limit, DL- Detection Limit

End of Report

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1, 1 St Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600 106

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ANNEXURE XXIII

MEASURES TAKEN TOWARDS REDUCE TDS

MEASURES TAKEN TOWARDS TDS REDUCTION

- Oxygen delignification and twin roll presses were introduced in both Hardwood and Bagasse pulping street. The twin roll presses are more efficient in washing, and COD carryover in pulp into bleach plant is reduced and so also the TDS. The O_2 delignification reduces the lignin carryover to bleach plant by 30-40%, resulting in corresponding reduction in bleach chemicals and thus equivalent reduction in TDS into effluent from bleach plant.
- Paper machine effluent is being segregated and clarified separately to remove the suspended solids and the clarified water is being used in backwater clarifications replacing treated effluent as a measure to reduce TDS in the treated effluent.
- Recycling of EOP alkaline filtrate in post Oxygen washer in both Hardwood & Chemical Bagasse Pulping operations.
- Introduction of organic peroxide stabilizer in Deinking Pulp bleaching operation resulted in 50% Sodium silicate reduction to achieve equivalent reduction of TDS in the respective effluent stream.
- Usage of ferrous chloride has been stopped for the treatment of anaerobic effluent in ETP.
- The soft water supplied to Chlorine Di Oxide plant and VAM has been replaced with R.O. water. Similarly, Soft water has been replaced with process water in cooling towers and pulp mills. Further, Filtered water is being used in place of soft water for NIPCO hydraulic system. This has resulted in reduction of soft water generation and regeneration cycle thus paved way for reduction of TDS from the WTP effluent stream.

ANNEXURE XXIV

WATER DRAWAL PERMISSION FROM PWD

For information pl. 24/X/2001

O.F.

C-M-D

ABSTRACT

Drawal of Water - Karur District - To reduce the drawal of water from 24 Mgd to 20 Mgd with effect from 1.4.97 and 20 Mgd to 16 Mgd with effect from 1.4.99 from River Cauvery by Tamil Nadu Newsprint and Papers Limited - Orders - Issued.

PUBLIC WORKS (N2)DEPARTMENT

G.O.(MS) No.455 DATED: 29.10.2001.

READ:

1. G.O.Ms.No.600, PWD, dated 21.10.98
2. G.O.Ms.No.328, PWD, dated 6.7.2001.
3. From the Chairman and Managing Director, Tamil Nadu Newsprint and Papers Ltd., D.O. Lr.No. Water Royalty/00-01, dated 27.7.2001.
4. From the Chief Engineer, W.R.O., Trichy Region Lr. No. B3/11445/99, dated 3.9.2001.

****

ORDER:

In supersession of the orders issued in the G.O. first and second read above, the Government direct that the drawal of water limit of the Tamil Nadu Newsprint and Papers Limited from the River Cauvery be reduced from 24 Mgd. to 20 Mgd. with effect from 1.4.97; and from 20 Mgd. to 16 Mgd. with effect from 1.4.99.

2. The Government also direct that all the penalty claims for not paying higher demand charges for the enhanced quantity which was not drawn by Tamil Nadu Newsprint and Papers Limited with effect from 1.4.97 and 1.4.99 be dropped, as a special case.

2.

17

3. The Government also direct that the above order should not be quoted as precedent in similar cases.

(BY ORDER OF THE GOVERNOR)

M. KUTRALINGAM
SECRETARY TO GOVERNMENT.

To

The Chairman and Managing Director, Tamil Nadu NewsPrint and Papers Limited, Guindy, Chennai-32.
The Chief Engineer, Water Resources Organisation, Public Works Department, Trichy Region, Trichy-20.
The District Collector, Karur District.

Copy to:
The Finance Department, Chennai-9.
The Industries Department, Chennai-9.

/Forwarded/By Order/

SECTION OFFICER

18

ANNEXURE XXV

COMPLIANCE TO MEP PUBLIC HEARING

PUBLIC HEARING UPDATE (HELD ON 10TH JULY 2008)

The environmental public hearing meeting was held on 10-07-2008 at meeting hall, District Collectors Office, Karur, in connection with the Mill expansion Plan of M/s. Tamil Nadu Newsprint And Papers Limited for increasing the production of printing and writing paper. An updated of the Public hearing and compliance to the Public consultation is furnished below:

Compliance to Public Consultation

The representations made by the public can be classified into the following groups:

i. Airborne Emissions

ii. Climate Change

iii. Community Welfare

iv. Drinking Water Supply

v. Dust Emission

vi. Employment in TNPL for Land givers

vii. Free Project Work for Students

viii. Groundwater Quality

ix. Soil Sampling to be taken in land owner's presence

x. Road Improvements

xi. Discharge of seepage water into Pugalur Canal

xii. Land of 2.5 Acres in Moorthipalayam

xiii. Effluent Sludge Incineration

xiv. Compliance of Swamy Committee Recommendations

The following explanation addresses these representations.

1 Airborne Emissions

In the EIA, model simulations have been carried using the hourly Joint Frequency data viz. stability, wind speed, mixing height and temperature. For the short-term simulations, the Ground Level Concentrations (GLCs) were estimated

around 1200 receptors to obtain an optimum description of variations in GLCs over the site within 10-km radius covering 16 directions.

The GLCs due to the emission from the proposed stacks have been estimated through dispersion modelling by using the seasonal meteorological data monitored at site. The concentrations for SPM, SO_2 and NOx thus obtained are presented in Table 1. For each time scale, i.e. for 24 hr (short term), the model computes the highest concentrations observed during the period over all the measurement points.

TABLE 1
PREDICTED 24-HOURLY SHORT TERM CONCENTRATIONS

Scenario of Operation	Net Incremental concentrations ($\mu g/m^3$)			Distance (km)	Direction
	SPM	SO_2	NOx		
Scenario-1 (Post MDP)	(-) 0.9	4.0	(-)1.4	2.8	NW
Scenario-2 (Post MEP)	0.9	11.0	3.2	1.4	NW

Comments on Predicted Concentrations

A perusal of Table 1 reveals that the maximum short-term 24 hourly ground level incremental concentrations for SPM, SO_2 and NOx are observed as 0.9 $\mu g/m^3$, 11.0 $\mu g/m^3$ and 3.2 $\mu g/m^3$ occurring at a distance of about 1.4 km in the NW direction due to implementation of MEP Project.

Resultant Concentrations after Implementation of the Project

The maximum net incremental GLCs due to the MEP for SO_2 and SPM are superimposed on the baseline SO_2 and SPM concentrations recorded during the study to arrive at the realistic baseline concentrations for the proposed MEP project. The modelling predictions are tabulated below in Table 2.

TABLE 2
RESULTANT CONCENTRATIONS DUE TO INCREMENTAL GLC's –
PROPOSED MEP

Pollutant	Realistic baseline concentrations ($\mu g/m^3$)	Net incremental concentrations due to MEP ($\mu g/m^3$)	Final Resultant Concentrations ($\mu g/m^3$)
Industrial Zone			
SPM	189.9	0.9	190.8
SO_2	30.8	11.0	41.8
NOx	27.7	3.2	30.9
Residential Zone			
SPM	179.2	0.3	179.5
SO_2	25.8	3.1	28.7
NOx	26.4	0.7	31.0

A perusal of the above table clearly reveals that SPM, SO_2 and NOx are expected to be within the prescribed limits specified by CPCB for industrial zone and residential zone.

2 Climate Change

Concerns expressed about climate changes (rise in temperature and decrease in rainfall) are not related to the operations of TNPL.

3 Community Welfare

The company has been implementing several community welfare measures for the benefit of the people in the neighbourhood. Community welfare measures implemented include:

- Setting up a Centre for Career Development,
- Establishing training centres for imparting training in Typewriting, Computers and Tailoring to unemployed educated youth in the neighbourhood,
- Providing infrastructure facilities in the government schools in the neighbouring villages,
- Providing infrastructure facilities in the surrounding Primary Health Canters, Government Hospital and Constructing Community Hall, Library, Toilet, etc.,
- Distributing books, note books including providing financial assistance for poor children pursuing studies,
- Organizing monthly medical camps and special medical camps financial assistance for developing roads,
- Providing drinking water facilities and streetlights in the near by villages, conducting veterinary camps, etc.

The company is committed to provide welfare measures to the local community under its Corporate Social Responsibility programme. The community welfare measures will continue to be carried out in tune with the emerging, and genuine, needs of the community.

4 Drinking Water Supply

TNPL is regularly supplying the drinking water to the surrounding villages to the tune of 2000KLD. TNPL has so far provided about 200 common taps in the nearby villages for drinking water. The number will be increased further depending on the actual requirement. Protected water is supplied from the factory through pipelines to the respective overhead tanks. Further, 16 water

tubs are provided for feeding cattles. Pumping of drinking water is done twice a day.

Further, based on the requirement by the nearby hamlets, drinking water is also being supplied through water tankers during festivals etc. in addition to the regular water supply.

5 Dust Emission

In order to control dust emission, wind barriers were provided for a length of 2254 meters along the compound wall of Main Plant including recently installed wind barriers adjacent to compound wall on southern side of the mill for a length of 100 meters to avoid emanation of dust from lime storage. Further, wind barricades for a total length of 1260 meters were already embedded along the compound wall of Cement plant.

6 Employment in TNPL for Land givers

During 1982-83, TNPL acquired 786 acres of land from 362 families for setting up the plant. The company evolved the following criteria for considering the requests received for employment under Land Given Category:

- The land should have been the only or major source of sustenance on the date of passing the Award.
- One employment for one family. Patta in the name of husband and wife to be considered as one family and only one employment to be given to the family.
- Minimum land acquired to be not less than 20 cents.
- Eligible persons will be owner of the land (husband / wife), son daughter, legally adopted son prior to the issue of 4(1) Notification, grandson, grand daughter, son-in-law / grand son-in-law, if there are no male issues.
- Age Limit: 18 to 35 years; Age limit will be relaxed by 5 years for SC/ST candidates.
- Educational Qualification: Minimum 10th Standard / SSLC Pass

Till 2008, the company had provided employment to 193 persons. Conditions 5 & 6 above were relaxed during 2009 and employment was provided to 25 persons including 6 persons relaxing the condition on age and educational qualifications.

With this, 218 persons had been provided employment under land given category.

The Board resolved to close the scheme on 30/11/2009.

However, there are continuous representations to consider employment for the legal heirs of the land owners. In the Public Hearing Meeting, the issue of providing employment under land given category was raised. Hence, it was

decided to provide employment to eligible persons from the applications received from the legal heirs of land owners.

Based on their requests, it was proposed to relax the minimum requirement of 20 cents to 10 cents and to provide employment for daughters-in-laws / grand daughters-in-laws subject to the condition that no one from the family has been provided employment so far in the respective families.

The subject was placed before the Board of Directors of the company in the 220th Meeting held on 29th May 2012. The Board approved the proposal for providing employment to the eligible legal heirs and it was also resolved to close the scheme forthwith.

Out of the representations, 29 persons were found eligible to be provided employment and after conducting interviews, 19 persons have been provided employment. Few persons have declined the proposal of accepting the offer and few persons are yet to produce relevant documents in respect of land acquired, educational qualifications, no objection certificates from other legal heirs etc. Once the compliance is fulfilled, interview process in respect of the remaining persons will be completed shortly and those persons will be inducted.

The above action also fulfils the representation of Mr K Murugan, Velayuthampalayam, during the Public hearing. As requested by Mr Murugan, his legal heir (son), a qualified engineer has been inducted in TNPL service from August 2009.

So far, the total employment given for land given category is summarized below:

Sl No	Description	Total Nos. of employment given
1	Employment given in Unit - I	240
2	Employment given in Unit - II (as on 23.11.2019)	98
Total		**338**

7 Free Project Work for Students

The system of charging a nominal fee was introduced, to regulate the number of students doing the project work within the factory complex and ensure safe factory operations. However, in response to the public hearing, project work is being allocated to students on free of cost. The details of the in plant training/ Project work undertaken by the students in TNPL between Apr'19 and Sep'19 is given below:

INPLANT TRAINING / PROJECT WORK DETAILS
FOR THE PERIOD FROM APRIL 2019 TO NOVEMBER 2019

Sl. No.	Subject Field	In-plant Training	Internship / Project Work	Total Students benefited
1	MBA	12	35	47
2	Electrical and Electronics Engineering	64	46	110
3	Electronics and Instrumentation Engineering	34	40	74
4	Mechanical Engineering	70	150	220
5	Information Tech./ Computer Science and Engg.	9	0	9
6	Chemical Engineering	20	16	36
7	Electronics and Communication Engineering	10	35	45
8	Civil Engg.	7	0	7
9	Chemistry	28	16	44
10	Others	13	21	34
Total		**267**	**359**	**626**

8 Ground Water Quality

Most of the villages in the project area have bore wells and tube wells for agricultural purposes.

The results of the water analysis, from three randomly selected bore wells, indicate that the pH and fluorides are well within the permissible limits. The bacterial studies also confirm that, no coliform bacteria have been present in the samples. The heavy metal is, either very low or, below detectable limits.

With the implementation of MDP and MEP, the treated wastewater quality has improved in terms of TDS, AOx, sodium and chlorides due to implementation of systems such as oxygen delignification, elemental chlorine free bleaching etc. and also tighter spillage control.

9 Soil Sampling to be taken in land owner's presence

Tamil Nadu Agricultural University is carrying out periodical sampling in twenty benchmark sites. This sampling is carried out once in six months by an Assistant Professor and research associates from Department of Environmental Science of Tamil Nadu Agricultural University, Coimbatore (TNAU), in the presence of concerned land owners.

10 Road Improvements

Against the demand for the widening of Moolimangalam Road during public hear for easy movement of trucks carrying Baggasse , TNPL had completed the work with the support of Highways department. Now the road has sufficient width for free movement vehicles.

11 Discharge of Seepage-water into Pugalur Canal

Presently, treated effluent is used for irrigating an area of 1600 Acres of land through M/s TNPL Effluent Water Lift Irrigation Society (TEWLIS), formed and run by the farmers. The seepage water quantity has been reduced to minimum level, consequent to reduction in the waste water being discharged and utilised for irrigation. In the recent Public hearing for the DIP project also, there was no point raised by the Public, on the seepage water.

12 Land of 2.5 Acres in Moorthipalayam

With reference to Point 17 of the Public hearing, as of date, TNPL has cleared the site and planted Eucalyptus trees during 2009-10, after preparation of the surface and filling with earth. This matter was communicated to the District Collector by TNPL, vide letter dated 5th April 2010.

13 Compliance to Justice Swamy Committee Recommendations

The latest status of compliance to the recommendations is follows:

STATUS OF COMPLIANCE AGAINST THE JUSTICE SWAMY COMMITTEE

RECOMMENDATIONS

Sl.No	RECOMMENDATION	STATUS OF COMPLIANCE
1	By adopting Biomethanation technology in place of anaerobic lagoon, not only the parameters of the polluted contents are reduced substantially but also the bioenergy produced will repay the cost of Biomethanation plant in a course of 5 to 6 years. Therefore, the Committee strongly recommends the adoption of the Biomethanation technology within a period of two years for high BOD stream.	TNPL has commissioned the Bio Methanation Plant for high BOD/COD stream of Effluent Treatment Plant at a cost of Rs.430 lakh during June 2003 and is successfully operating the plant. The biogas produced is utilized in lime kiln regularly since June 2003. The Bio Plants installed generates about 25000 CU.M/day of Bio gas resulting in 15000 Liters/day saving of furnace oil consumption in Lime Kilns.
2	Colour is one parameter of major concern. The Committee recommends the following measures for reduction of colour in the effluent which are to be adopted and implemented within a period of six (6) months: (a) Chemical precipitation technique using Alum. (b) Introduction of peroxide in extraction stage of bleaching process for chemical pulp. (c) Improvement in efficiency of the pulp washing system reduces colour, sodium and dissolved solids in the effluent. TNPL must assess the techno-economic feasibility of the new generation of pulp washing systems discussed in Chapter-VI for washing of bagasse pulps.	The unit has implemented tertiary treatment to reduce colour in the treated effluent by Ozonization at a capital outlay of Rs.400 lakhs (Rs.200 for Ozonization and Rs. 200 of Oxygen feed plant). The unit was commissioned on 06 th August 2010 and is in service. The unit has implemented Ozonization instead of Chemical precipitation technique. The operating expenditure is about Rs.70 lakh per annum. In addition to colour reduction in the final treated effluent, the ozonation will further improve dissolved oxygen in the treated effluent. Peroxide is used on a regular basis in extraction stage of bleaching process for chemical pulp. Under MDP, this hardwood pulping line has been replaced by a new ECF hardwood pulp mill, which includes modern twin roll press for efficient washing. In Chemical Bagasse Pulp Line, the brown stock washers were replaced with 'ripple deck washers' which gives improved consistency and efficient washing. This Chemical Bagasse Washing line was also replaced by a modern twin roll press for efficient washing with oxygen delignification Mill Expansion Plan.

Sl.No	RECOMMENDATION	STATUS OF COMPLIANCE
3	The Committee directed TNPL to install a Pilot Plant for removal of colour by employing Membrane Filtration Technology. The results of the Membrane Filtration Pilot Plant installed on lease from the Central Pulp & Paper Research Institute, Saharanpur (U.P.) being encouraging, the Committee recommends that the feasibility of this technology on a commercial scale should established within a period of one year. Based on such assessment further steps should be taken for adoption or otherwise of the Membrane Filtration Plant as a time bound programme.	TNPL has carried out trials with membrane filtration technology in June 2000 for effluent stream like Decker filter, Extraction Filtrates & Foul condensate. It was found that the technology is not viable for Paper and Pulp industry and there was no guarantee for the life of membrane from the supplier. TNPL has installed Oxygen Delignification and ECF bleaching for hardwood pulping line and ECF bleaching for Chemical Bagasse pulping line to reduce the colour level at source. The unit has implemented tertiary treatment to reduce colour in the treated effluent by Ozonation at a capital outlay of Rs.400 lakhs (Rs.200 for Ozonization and Rs.200 of Oxygen feed plant). The unit was commissioned on 06th August 2010 and is in service. The operating expenditure is about Rs.70lakh per annum. In addition to colour reduction in the final treated effluent, the ozonation will further improve dissolved oxygen in the treated effluent.
4	Present fresh water consumption is 125 cubic meter per tonne of paper. There is a scope for further reduction by 10% in the intake of present quantity of the fresh water.	TNPL has implemented various conservation measures, as a continuous process, to reduce water consumption. The present average fresh water consumption is 27 m^3/tonne of paper production.
5	There is an urgent need to take all the measures to stop the leakage of Oil & Grease from the process equipments and to prevent entering into effluent streams. Steps in this regard should be taken within a period of six months.	The average Oil & grease concentration in TNPL's final treated effluent outlet is below 4.0 mg/l as against 10 mg/l prescribed by NABL accredited & MoEFCC recognized Third Party Lab. TNPL has installed a separate treatment plant for separation of oil & grease in the automobiles servicing section.

Sl.No	RECOMMENDATION	STATUS OF COMPLIANCE
6	Effluent quality should be improved to such an extent that it is not only suitable for irrigation but also for any non-process application. Attempts should be made to reduce the level of sodium and dissolved solids particularly the inorganic chlorides. This should be taken up on priority basis as one of the R&D programmes.	TNPL is treating its effluent through Activated sludge process for effective reduction of pollutants. The total operating cost of treatment of effluent including power and chemicals is about Rs.900 lakh per annum. The present average fresh water consumption is 27 m^3/tonne of finished paper production. Average TDS(Inorganic): 1358 mg/l
7	The modern trend in bleaching of chemical pulp in Pulp & Paper Industry is towards Elemental Chlorine Free Bleaching (ECF) and Total Chlorine Free Bleaching (TCF). However since company had adopted CEHH bleaching while expanding the plant capacity fully only in 1996, as far as the adoption of ECF technology is concerned, the Committee recommends that it should be adopted by the year 2010. The Committee also would like to add that an ideal situation would be, adoption of TCF bleaching, even though, it is costlier compared to ECF. But in the course of 10 to 11 years, if TCF technology or any other technology becomes viable and is better than ECF, the same should be adopted.	Under the Mill Development Plan, TNPL has commissioned a 300 tpd ECF chemical hard wood pulp line and a 500 tpd ECF chemical bagasse bleach plant by May 2008. The company has complied with this recommendation, two years ahead of the target date of March 2010 in replacement of the chlorine based bleach plants. ECF is recognized as Best Available Technology worldwide.
8	One of the major consequences of land application of the effluent is seepage and contamination of sub soil water. One possible solution is by way of more efficient transport of the effluent through channel or pipelines and pumping off water from water logged areas. TNPL should have a separate establishment to take care of the same.	TNPL treated effluent water is transported to the irrigated lands through pipelines. The seepage water from the TEWLIS ayacut is also collected into a separate channel and the same is diverted to the existing TEWLIS sump and used for irrigation along with treated effluent. The operation of TEWLIS system is being monitored by E D (Operations) -FAC assisted by a team of operational and maintenance Engineers.
9	One more problem connected with the land application of treated effluent is the supply of drinking water. TNPL at present supplies drinking water to the surrounding areas. The supply of	TNPL has increased the drinking water supply to the surrounding villages from 2000 m^3/day. TNPL has provided common taps in the nearby villages for drinking water and steadily increased to 235

Sl.No	RECOMMENDATION	STATUS OF COMPLIANCE
	drinking water should be augmented within a period of six months so as to adequately meet the requirement of the residents in the neighborhood of the paper mill.	nos as on date. Number of taps will be increased further depending on the actual requirement. Further, protected water is supplied from the factory through pipelines to the overhead tanks of the nearby villages.
10	Discharging of treated effluent water and seepage water into Pugalur Canal should be stopped at any rate within a period of two years. Steps taken for enlarging TEWLIS area and development of additional area for utilization of treated effluent and seepage water should be accomplished within a year.	Discharge of treated effluent water and seepage water into Pugalur Canal has been stopped completely. The quality of treated effluent is within the norms prescribed by the TNPC Board.
11	TNPL should have a continuing programme to modernize the operations and to remove obsolescence and adopt the best available technology.	TNPL has taken steps to implement the following measures: 1) There are three No of Biogas plant are under operations which are generated about 25000 CU.M/day resulting in 15000 Liters saving of furnace oil consumption in Lime Kilns. 2) Fresh water reduction by recycling treated effluent water. 3) Best available technology for both Hardwood Pulp line and Chemical Bagasse Pulp Bleaching has been adopted for energy efficient and environmental friendly operations. 4) In order to control odour, the unit has installed Non Condensable Gas (NCG) collection and incineration system in the lime-kiln at a cost of Rs.500 Lakhs.
12	Research and Development Programmes: TNPL should have an exclusive Research and Development (R&D) Wing with upgraded Laboratory facilities to enable the mill to develop, assess and adopt state-of art technology.	TNPL has an exclusive R&D Wing and also has a well equipped Laboratory facility. Based on the R&D trials, TNPL has installed bio-methanation plant, Oxygen delignification, ECF

Sl.No	RECOMMENDATION	STATUS OF COMPLIANCE
	The R&D wing should also evaluate and recommend for adoption of any readymade technologies available in Research institutions. The standard analytical procedures for analysis and measurement of pollution parameters as recommended by competent agencies such as BIS to be followed.	bleaching, Alkaline sizing, use of environmental friendly pigment dyes etc. TNPL maintains association with Research Institutes like CPPRI, CLRI etc and utilizes their resources, whenever necessary. Standard analytical procedures as per BIS for pollution parameters are adopted and international standards like TAPPI ISO Scan etc are used for pulp and paper properties.
13	It is necessary to have periodic environmental impact assessment (EIA) atleast once in five years and the same should be got done by expert body like NEERI or any other such Institution. The findings should be given due publicity. In the first half of the year 2001, EIA should be got done by NEERI.	EIA study was carried out by NEERI during 2001-02. SPB-PC carried out EIA during 2004-05 as part of MDP. The study has been updated during January 2008 as part of MEP and further updated during October '2008 after public hearing. Further, EIA has been carried out during Jan'12 towards implementation DIP and augmentation of CCP through SPB-PC. Further, as part of Cement plant expansion, EIA study was carried out during 2015. Hence, the plant was operated with less than the design capacity. In view of the above, the EIA study was not taken up since the study report would not reflect the actual environment impact as the plant is being operating with under capacity. TNPCB granted fresh CTO Expansion for enhancement of production from 4.0 to 4.8 Lakh MT/A under No Increase in Pollution Load Scenario. The CTO obtained from TNPCB on 13/01/2023 with a validity of 31/03/2023. TNPL applied for renewal CTO and the same is under scrutiny of TNPCB. Hence, considering the above, it is plan to take up EIA study including impact due to production enhancement subject to TNPCB approval.

Sl.No	RECOMMENDATION	STATUS OF COMPLIANCE
14	It is also necessary to direct Tamil Nadu Agricultural University (TNAU) to continue to monitor the impact of treated effluent on land and crops. Monitoring must be done once in two years. Steps necessary in accordance with findings recorded by TNAU should be taken up by TNPL.	TNAU is monitoring the TEWLIS area and soil samples are analysed with the help of Agricultural Department. Various steps like application of Gypsum and cultivation of green manure being taken by TNPL as per TNAU's findings. Gypsum was supplied by the company at free of cost to the concerned farmers. Further, Study of land use pattern and agricultural activities including collection of data are being collected. The recommendation of TNAU is being implemented in the treated effluent irrigated area.

ANNEXURE XXVI

ENVIRONMENTAL MANAGEMENT CELL

TNPL

Tamilnadu Newsprint and Papers Limited.

November 13, 2023

ENVIRONMENTAL MANAGEMENT CELL

SL.NO	NAME OF THE EXECUTIVE	DESIGNATION	QUALIFICATION	RESPONSIBILITY
01	Dr. R. Seenivasan	Executive Director (Operations) – FAC	Doctorate	Responsible for over all mill wide nperations and coordinator for Environment compliance.
02	Mr. R. Rajalingam	General Manager (Electrical & Instrumentation)	B.Tech., MBA.,	Responsible for over all Mill wide Electrical & Instrumentation and Online Foltution Control Monitoring Stack Instruments.
03	Mrs. R.S. Tamilarasy	Assistant General Manager (Lab)	M.Sc., B.Ed.,	Responsible for R&D, Laboratory and coordinator of ISO 9001
04	Mr. N. Navaneedhakrishnan	Assistant General Manager (ETP)	M.Sc.,	Responsible for operation of ETP, Biogas Plant, TEWLIS.
05	Mr. S.M.Sundaram	Senior Manager (Environment)	M.Sc.,	Evaluation of Environmental Compliance and Coordination witb FCB officiats and coordinator of ISO 14001.
PLANTATION ACTIVITES				
06	Dr. K. Jayakumar	Deputy General Manager (Forestry)	Doctorate in Agronomy	Respnnsible for overall pulpwood raw material procurement and Plantation establishment activities.
07	Dr. P. Chezhian	Assistant General Manager (Plantation)	Doctorate in tree building and forest genetics	Development of new superior clones in exotic and indigenous pulp wood species for captive and farm forestry of TNPL.
08	Dr. V. Prasath	Deputy Manager (Plantation)	Doctorate in soil science and agricultorat chemistry	Monitoring nf ground water & soit in TEWLIS in association with TNAU scientists.

13/11/23

Executive Director (Operations) - FAC

ANNEXURE XXVII

MEP – ENVIRONMENTAL CLEARANCE – NEWSPAPER ADVERTISEMENT

THE FINANCIAL EXPRESS
Chennai, Wednesday, December 31, 2008

global meltdown

ss sector, particularly those vendetta on foreign institu- nal investment have fared nally. Non-availability of fi- ce for preparing locally rel- nt, visible and business- nted content are specifical- ified as reasons for under formance in the IT and BPO or that registered a poor performance of 15% growth as against 33% in the concerned period last year.

The feedback gathered from industry shows that during the first half of current fiscal, that is (April-Sept 2008), there was a moderation in the growth of several segments of the service industry.

TNPL

PUBLIC NOTICE

This is to inform that Ministry of Environment & Forests, New Delhi has accorded Environmental clearance for implementation of the project for Expansion of Pulp and Paper Mill (2,45,000 to 4,00,000 TPA) by installation of new Paper Machine (1,55,000 TPA) and Debarking of Hard Wood Pulp Mill (300 to 550 TPD) and Bagasse based Pulp Mill (500 to 880 TPD) of Tamil Nadu Newsprint and Papers Limited, vide its Order dated 11th December 2008.

Copies of the clearance letter are available with the Tamil Nadu State Pollution Control Board and may also be seen at the website of the Ministry of Environment and Forests at http://www.envfor.nic.in

CHIEF GENERAL MANAGER (Operations)

IndianOil

(ASSAM OIL DIVISION)
DIGBOI REFINERY, DIGBOI, ASSAM
CORRIGENDUM
TO

தினமணி, புதன்கிழமை, 31 டிசம்பர், 2008