SHRI GANG INDUSTRIES AND ALLIED PRODUCT LIMITED

Corporate Office : F-32/3, First Floor, Okhla Industrial Area Phase-II, New Delhi - 110 020
Regd. Office : A-26 UPSIDC Industrial Area, Sikandrabad, Dist. Bulandshahar - 203205, U.P.
Sandila Works : Plot No. B-2/6 & B-2/7, UPSIDC Ind. Area, Phase-IV, Sandila, District Hardoi, U.P.
Email : info@surajgrp.com **Tel. No.:** 011-42524454

Date: 03.05.2024

To,

The Director
Ministry of Environment, Forest & Climate Change
Kendriya Bhawan, 5th Floor, Sector "H" Aliganj
Lucknow (Uttar Pradesh)

Subject: Six Monthly Compliance Report of Environmental Clearance for Proposed 55 KLD Grain Based Distillery along with 2.0 MW Co-generation Power Plant by **M/s Shri Gang Industries and Allied Products Limited,** at Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area, Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) for the period of October, 2023 to March, 2024.

EC Ref. No. 554/|Parya/SEAC/4450/2018, dated 11th December, 2018.

Reg: Submission of Six-Monthly Compliance Report for Period of October, 2023 to March, 2024.

Dear Sir,

This is in connection to above mentioned subject we are hereby submitting the six-monthly compliance report of the conditions of Environmental Clearance for Proposed 55 KLD Grain Based Distillery along with 2.0 MW Co-generation Power Plant by **M/s Shri Gang Industries and Allied Products Limited,** at Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area, Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) for the period of October, 2023 to March, 2024 along with annexures as follows:

1. **Annexure-01:** Copy of CTO (Air and Water),
2. **Annexure-02:** Copy of Environmental Clearance
3. **Annexure-03:** Test Report

Requesting you to accept the soft copy report submitted for information please.

Thanking You,
Your's sincerely

J. K. Malik

Authorized Signatory
M/s Shri Gang Industries and Allied Products Limited,

SIX-MONTHLY ENVIRONMENTAL COMPLIANCE REPORT OF STIPULATED CONDITIONS OF ENVIRONMENTAL CLEARANCE

(October, 2023 to March, 2024)

For

Proposed 55 KLD Grain Based Distillery along with 2.0 MW Co-generation Power Plant

By

M/s Shri Gang Industries and Allied Products Limited
Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area
Sandila Phase IV, Lucknow Hardoi Road, Sandila
District: Hardoi (U.P.) - 241204

For Submission to:
Ministry of Environment, Forest & Climate Change
(Regional Office, Lucknow)

Submitted By:

M/s Shri Gang Industries and Allied Products Limited
Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area
Sandila Phase IV, Lucknow Hardoi Road, Sandila
District: Hardoi (U.P.) - 241204

TABLE OF CONTENT

Sr. No	Title	Page No.
CHAPTER No. 01: INTRODUCTION AND PROJECT DESCRIPTION		**04**
CHAPTER No. 02: COMPLIANCE OF STIPULATED CONDITIONS OF ENVIRONMENTAL CLEARANCE		**05 - 12**
CHAPTER No. 03: DETAILS OF ENVIRONMENTAL MONITORING		**13 - 29**
3.1	**AMBIENT AIR QUALITY MONITORING**	**13**
3.1.1	Ambient air Quality Monitoring Stations	13
3.1.2	Ambient Air Quality Monitoring Methodology	14
3.1.3	Ambient Air Quality Monitoring Results Near Main Gate of Premises	14
3.1.4	Ambient Air Quality Monitoring Results Near Project Area	15
3.1.5	Ambient Air Quality Monitoring Results at Village: Muradnagar	15
3.1.6	Ambient Air Quality Monitoring Results at Village: Bakhsh Khera	15
3.1.7	Ambient Air Quality Monitoring Results at Village: Mahsona	16
3.1.8	Discussion on Ambient Air Quality in the Study Area	16
3.2	**STACK EMISSION MONITORING**	**18**
3.2.1	Stack Emission Monitoring Methodology	18
3.3	**AMBIENT NOISE MONITORING**	**18**
3.3.1	Ambient Noise Monitoring Locations	18
3.3.2	Methodology of Noise Monitoring	19
3.3.3	Ambient Noise Monitoring Results	19
3.2.4	Discussion on Ambient Noise Levels in the Study Area	20
3.4	**GROUND WATER QUALITY MONITORING**	**20**
3.4.1	Ground water Quality Monitoring Locations	20
3.4.2	Methodology of Ground Water Quality Monitoring	20
3.4.3	Ground water Quality Monitoring Results	21
3.5	**SOIL MONITORING**	**28**
3.5.1	Soil Monitoring Locations	28
3.5.2	Methodology of Soil Monitoring	28
3.5.3	Soil Monitoring Results	28
3.5.4	Discussion on Soil Characteristics in the Study Area	29

Sr. No.	List of Table	Page No.
1.	**Table-3.1:** Details of Ambient Air Quality Monitoring Stations	13
2.	**Table-3.2:** Techniques used for Ambient Air Quality Monitoring	14
3.	**Table-3.3:** Ambient Air Quality Monitoring Results Near Main Gate of Premises	14
4.	**Table-3.4:** Ambient Air Quality Monitoring Results Near Project Area	15
5.	**Table-3.5:** Ambient Air Quality Monitoring Results at Village: Muradnagar	15
6.	**Table-3.6:** Ambient Air Quality Monitoring Results at Village: Bakhsh Khera	15
7.	**Table-3.7:** Ambient Air Quality Monitoring Results at Village: Mahsona	16
8.	**Table-3.8:** Details of Stack Emission Monitoring Results	18
9.	**Table-3.9:** Details of Ambient Noise Monitoring Stations	19
10.	**Table-3.10:** Ambient Noise Monitoring Results	19
11.	**Table-3.11:** Noise Standards as per CPCB Schedule rule 3(1) and 4(1)	20
12.	**Table-3.12:** Details of Water Quality Monitoring Station	20
13.	**Table-3.13:** Ground water Quality Results of Borewell (October, 2023)	22
14.	**Table-3.14:** Ground water Quality Results of Borewell (November, 2023)	23
15.	**Table-3.15:** Ground water Quality Results of Borewell (December, 2023)	24
16.	**Table-3.16:** Ground water Quality Results of Borewell (January, 2024)	25
17.	**Table-3.17:** Ground water Quality Results of Borewell (February, 2024)	26
18.	**Table-3.18:** Ground water Quality Results of Borewell (March, 2024)	27
19.	**Table-3.19:** Details of Soil Monitoring Station	28
20.	**Table-3.20:** Physico-Chemical Characteristics of Soil Near Plant Area	29

Sr. No.	List of Figures	Page No.
1.	**Figure-3.1:** Graphs Showing PM_{10} Concentration at all sites	16
2.	**Figure-3.2:** Graphs Showing $PM_{2.5}$ Concentration at all sites	17
3.	**Figure-3.3:** Graphs Showing SO_2 Concentration at all sites	17
4.	**Figure-3.4:** Graphs Showing NO_X Concentration at all sites	18
5.	**Figure-3.5:** Day and Night Time noise Level Near Project Premises	19

CHAPTER No. 01:
INTRODUCTION AND PROJECT DESCRIPTION

Six monthly environmental compliance/status report is submitted for Proposed 55 KLD Grain based Distillery along with 2.0 MW Co-generation Power Plant by M/s Shri Gang Industries and Allied Products Limited for October, 2023 to March, 2024. The Project is located at Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area, Sandila Phase IV, Lucknow Hardoi Road, Sandila, District: Hardoi (U.P.) - 241204.

Prior Environment Clearance was obtained from State Level Environment Impact Assessment Authority, Uttar Pradesh wide letter no.: **554/|Parya/SEAC/4450/2018, dated 11th December, 2018.** Consent to operate for Air & Water Vide Ref No. **155891/UPPCB/Unnao (UPPCBRO)/CTO/both/Hardoi/2022** dated **12/05/2022.** Copy of CTE & CTO are attached here as **Annexure-1**.

Specific and general conditions stipulated in Environment Clearance have been complied during construction and post construction phases.

Environmental mitigation measures described in Environmental Management Plan are being implemented operation phase. **M/s Shri Gang Industries and Allied Products Limited** management team is fully conscious about Environmental Management and enhancing green belt development in project surrounding area.

Six monthly compliance/ status reports for **October, 2023 to March, 2024** for conditions stipulated in the Environmental Clearance letter issued by SEIAA, UP is enclosed as **Annexure-2**. Photographs view of implemented mitigation measures are also attached for the ready reference as Photo Documentation.

CHAPTER No. 02: COMPLIANCE OF STIPULATED CONDITIONS OF ENVIRONMENTAL CLEARANCE

Name of the Project: Proposed 55 KLD Grain Based Distillery along with 2.0 MW Co-generation Power Plant at Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area, Sandila Phase IV, Lucknow Hardoi Road, Sandila, District: Hardoi (U.P.) - 241204 by M/s Shri Gang Industries and Allied Products Limited.

Clearance Letter No: 554/|Parya/SEAC/4450/2018, dated 11th December, 2018

Period of Compliance Report: (October, 2023 to March, 2024)

I. STATUTORY COMPLIANCE		
Sr. No.	**Statutory**	**Compliances**
1.	The project proponent shall obtain forest clearance under the provision of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.	Not Applicable, as there is no forest land involved in this project.
2.	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	Not Applicable, there is no wild life sanctuary within 10 km radius.
3.	The project proponent shall prepare a site-specific conservation plan and wildlife management plan and approved by the chief wildlife warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with six-monthly compliance report. (In case of the presence of schedule -l species in the study area).	No schedule-I species is found in study area, hence this condition is not applicable.
4.	The project proponent shall obtain Consent to Establish/ Operate under the provision of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/Committee.	The CTE (Consent to Establish) application has been Obtained from UPPCB vide letter no. **154037/UPPCB/Unnao(UPPCBRO)/CTE/HARDOI/2022**, **Dated: 25.04.2022 . & Consent to operate for Air & Water Vide Ref No. 155891/UPPCB/Unnao (UPPCBRO)/CTO/both/Hardoi/2022 dated 12/05/2022** Copy of CTE & CTO attached as **Annexure-1**.

5.	The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.	Unit obtained the Consolidated Consent to Operate and Authorisation on 12.05.2023. Copy of same is attached.
6.	The company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989	The point is noted.
II. AIR QUALITY MONITORING AND PRESERVATION:		
1.	The project proponent shall install 24 x 7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	Condition noted and complied.
2.	The project proponent shall install system carryout to Ambient Air Quality monitoring for common/criterion parameter relevant to the main pollutant released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NO_X in reference to SO_2 and NO_X emission) within and outside the plant area at least at four location (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind direct ions. (case to case basis small plants; Manual; Large Plants: Continuous)	Monitoring reports are attached as **Annexure- 3**
3.	The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring of air quality/fugitive emission to Regional Office of MoEF & CC, Zonal office of CPCB and Regional Office of SPCB along with Six-monthly monitoring report.	Condition noted and complied. Ambient Air quality Monitoring has been done at 05 locations; Monitoring reports are attached as **Annexure- 3.**
4.	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable source, so as to comply prescribed stack emission and fugitive emission standards.	Condition noted and complied. Ambient Air quality Monitoring has been done at 05 locations; Monitoring reports are attached as **Annexure- 3.**
5.	The National Ambient Air Quality Emission Standard issued by the Ministry vide G.S.R No. 826 (E) dated 16th November, 2019 shall be compiled with.	Point is noted and complied.

6.	Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emission within permissible limits (as applicable). The gaseous emission shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	Point is noted and same has been complied.
7.	The D.G set shall be equipped with suitable pollution control device and adequate stack height so that the emissions are in conformity with the extant regulation and the guidelines in this regard.	Point is noted
8.	Storage of raw materials, coal etc shall be either stored in soils or in covered areas to prevent dust pollution and other fugitive emissions.	Point is noted.
III. WATER QUALITY MONITORING AND PRESERVATION		
1.	For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises (applicable in case of the projects achieving ZLD) and connected to SPCB and CPCB online servers.	Unit has install OCMS for the effluent & web camera at drain carrying the effluent as per CPCB guidelines.
2.	Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises (applicable in case of the projects achieving the ZLD).	In no any case treated water is discharge outside the premises as unit is based on Zero Liquid Discharge. ETP, RO & MEE is installed to take care the proposed effluent load.
3.	Process effluent/ any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.	Unit is based on Zero Liquid Discharge strategy, no effluent is discharge outside premises.
4.	The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986, or as specified by the State pollution Control Board while granting Consent under the Air/Water Act, whichever is more stringent.	NOC for ground water abstraction has been obtained from UPGWD.
5.	Total fresh water requirement shall not exceed the proposed quantity or as specified by the Committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA In this regard.	NOC for ground water abstraction has been obtained from UPGWD.
6.	Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.	Point noted and complied.

7.	The company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operation within the plant.	Rain water harvesting tank of capacity : 45,377 Cum is proposed in EIA / EMP report. Rain Water harvesting tank has been constructed and industry also adopted pond out side the premises for artificial rain water recharge.
IV. NOISE MONITORING AND PREVENTION		
1.	Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Condition noted and same has complied.
2.	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.	Condition noted. Ambient Noise Level Report is attached as **Annexure-3**
3.	The ambient noise levels should conform to the standards prescribed under E(P) A Rules,1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Point is noted and Monitoring reports are attached as **Annexure- 3.**
V. ENERGY CONSERVATION MEASURES		
1.	The energy sources for lighting purposes shall preferably be LED based.	Point is noted and complied.
VI. WASTE MANAGEMENT		
1.	Hazardous chemicals shall be stored in tank, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.	Point is noted and complied.
2.	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.	Point is noted. Waste generated is being recycled in-house/ co-processed through authorized recyclers / disposal to CHWTSD vendor after commissioning of plant.
3.	The company shall undertake waste minimization measures as below. i. Metering and control of quantities of active ingredients to minimize waste. ii. Reuse of by products from the process as raw materials or as raw material substitutes in other processes. iii. Use of automated filling to minimize spillage. iv. Use of close feed system into batch reactors. v. Venting equipment through vapour recovery system.	Point is noted and complied.

	vi. Use of high-pressure hoses for equipment clearing to reduce wastewater generation	
VII. GREEN BELT		
1.	Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant.	Unit has developed green belt as per the norms. (Approx. 33% of total area ie. 4.0 ha).
VIII. SAFETY, PUBLIC HEARING AND HUMAN HEALTH ISSUES		
1.	Emergency preparedness plan based on the Hazard Identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Emergency preparedness plan based on the Hazard Identification and Risk Assessment (HIRA) has been done within premises.
2.	The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act	Condition noted and complied.
3.	Training shall be imparted to all employees on safety and health aspects of chemicals handling Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	The employees/operators have been provided with adequate Personal Protection Equipment (PPE) as per the norms of factory Act.
4.	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.	Condition noted and complied.
5.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Condition noted and complied. Labour hutment colony builds by construction agency L&T near the site with all facilities and provisions and ensuring all Covid appropriate behavior and protocols.
6.	There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.	Occupational health surveillance of the workers has been done on a regular basis and records has been maintained as per the Factories Act.
IX. CORPORATE ENVIRONMENT RESPONSIBILITY		
1.	The project proponent shall comply with the provision contained in this Ministry OM vide F.No. 22-65/2017 – IA.III dated 01st May 2018, as applicable, regarding Corporate Environment Responsibility.	Point is noted and complied within five-year plan.
2.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe	Point is noted and company's environmental policy is well documented and made available to

	for standard operating procedures to have proper checks and balances and to bring into focus any infringements /deviation / violation of the environment/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environment/forest/wildlife norms I conditions and / or shareholders/stake holder. The copy of the board resolution in this regard shall be submitted to the MoEF & CC as a part of six – monthly report.	all stakeholders.
3.	A separate Environmental cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	Point is noted and complied.
4.	Action plan for implementing EMP and environment conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environment protection measures shall be kept in separate account and not to be diverted for any other purpose. Year's wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the six-monthly Compliance Report.	Point is noted complied.
5.	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Point is noted and complied.
X. MISCELLANEOUS		
1.	Directions/suggestion given during public hearing and commitment made by the project proponent should be strictly compiled.	
2.	The project proponent shall make public the environmental clearance granted for their project along with the environmental condition and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	Public notice has been published and Copy of Environmental Clearance is attached
3.	The copies of the environmental clearance shall be submitted by the project proponent to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	Complied.

4.	The project proponent shall upload the status of the compliance of the stipulated environment clearance condition, including results of monitored data and in conditions, including results of monitored data on their website and update the same on half-yearly basis.	Point is noted and complied.
5.	The project proponent shall monitor the criteria pollutants level namely; PM_{10}, SO_2, NO_X (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	Monitoring reports are attached as **Annexure- 3.**
6.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the Ministry of Environment, Forest and Climate Change at environmental clearance portal.	Point is noted and complied.
7.	The project proponent shall submit the environmental statement for each financial year in form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Point is noted and complied as per rule.
8.	The project proponent shall inform the Regional Office as well as the Ministry, the date of development work and start of production operation by the project.	Point is noted.
9.	The project authorities must strictly adhere to the stipulation made by the State Pollution Control Board and the State Government.	Point is noted and complied.
10.	The project proponent shall abide by all the commitment and recommendation made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Point is noted.
11.	No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF & CC).	Point is noted
12.	Concealing factual data or submission of false fabricated data may result in revocation of this environmental clearance and attract action under the provision of Environment (Protection) Act, 1986.	Point is noted.
13.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Point is noted
14.	The Ministry reverse the right to stipulate additional	Point is noted

	conditions if found necessary.	
15.	The company in a time bound manner shall implement these conditions.	Point is noted
16	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. the project authorities should extend full corporation to the officer (s) of the Regional office by furnishing the requisite data/ information/ monitoring reports.	Point is noted
17.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016 and the public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter.	Point is noted.
18.	Any appeal against this EC shall lie with National Green Tribunal, if preferred, with a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.	Point is noted.

CHAPTER No. 03:
DETAILS OF ENVIRONMENTAL MONITORING

3.1 AMBIENT AIR QUALITY MONITORING

3.1.1 Ambient air Quality Monitoring Stations

Ambient air quality monitoring has been carried out Near Main Gate of Premises, Near Project Area, Village: Muradnagar, Village: Bakhsh Khera and Village: Mahsona to assess the ambient air quality. This will enable to have analytical understanding about air quality and the changes in the air environment in the study area with respect to the condition prevailing. The locations of the ambient air quality monitoring stations are given in **Table - 3.1**.

Table - 3.1: Details of Ambient Air Quality Monitoring Stations

Sr. No	Location Code	Location Name/ Description	Environmental Setting of Surrounding
1.	AAQ - 1	Near Main Gate of Premises	Industrial
2.	AAQ - 2	Near Project Area	Industrial
3.	AAQ - 3	Village: Muradnagar	Residential
4.	AAQ - 4	Village: Bakhsh Khera	Residential
5.	AAQ - 5	Village: Mahsona	Residential

AAQ-1: Near Main Gate of Premises

The sampler was placed Near Main Gate of Premises and was free from any obstructions. Surroundings of the sampling site represent industrial environmental setting.

AAQ- 2: Near Project Area

The sampler was placed Near Project Area and was free from any obstructions. Surroundings of the sampling site represent industrial environmental setting.

AAQ-3: Village: Muradnagar

The sampler was placed Village: Muradnagar and it was also free from any obstructions. Surroundings of the sampling site represent residential environment setting.

AAQ-4: Village: Bakhsh Khera

The sampler was placed Village: Bakhsh Khera and it was also free from any obstructions. Surroundings of the sampling site represent residential environment setting.

AAQ-5: Village: Mahsona

The sampler was placed Village: Mahsona and it was also free from any obstructions. Surroundings of the sampling site represent residential environment setting.

3.1.2 Ambient Air Quality Monitoring Methodology

Monitoring was conducted in respect of the following parameters:

- Respirable Suspended Particulate Matter (PM_{10})
- Fine Particulate Matter ($PM_{2.5}$)
- Sulphur Dioxide (SO_2)
- Oxides of Nitrogen (NO_X)

The duration of sampling of PM_{10}, $PM_{2.5}$, SO_2 and NO_X was 24 hourly continuous sampling per day duration monitoring. The monitoring was conducted for one day at the location. This is to allow a comparison with the National Ambient Air Quality Standards.

The air samples were analyzed as per standard methods specified by Indian Standards (IS: 5182). The techniques used for ambient air quality monitoring and minimum detectable levels are given in **Table - 3.2**.

Fine Particulate Sampler instruments have been used for monitoring Particulate Matter 2.5 ($PM_{2.5}$ i.e. <2.5 microns), and Respirable Dust Sampler with gaseous sampling attachment was used for sampling Respirable fraction (<10 microns), gaseous pollutants like SO_2, and NOx.

Table - 3.2: Techniques used for Ambient Air Quality Monitoring

Sr. No	Parameter	Technique	Range of testing /limit of detection
1.	Respirable Suspended Particulate Matter (PM_{10})	Respirable Dust Sampler, with cyclone separator, Gravimetric Method	5.0 - 1200
2.	Fine Particulate Matter ($PM_{2.5}$)	Fine Particulate Sampler, Gravimetric Method	2.0 - 500
3.	Sulphur dioxide	Modified West and Gaeke	5.0 - 1050
4.	Oxides of Nitrogen	Jacob & Hochheiser	6.0 - 750

3.1.3 Ambient Air Quality Monitoring Results Near Main Gate of Premises

The detailed on-site monitoring results of $PM_{2.5}$, PM_{10}, SO_2 and NO_X are presented in **Table - 3.3**.

Table - 3.3: Ambient Air Quality Monitoring Results Near Main Gate of Premises

Sr. No	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m^3	**85.2**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**52.58**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxides (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m^3	**14.59**	5.0 - 1050	For 24 hour =80
4	**Oxides of nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m^3	**21.36**	6.0 - 750	For 24 hour =80

3.1.4 Ambient Air Quality Monitoring Results Near Project Area

The detailed on-site monitoring results of $PM_{2.5}$, PM_{10}, SO_2 and NOx are presented in **Table - 3.4**.

Table - 3.4: Ambient Air Quality Monitoring Results Near Project Area

Sr. No	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m^3	**86.4**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**53.65**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxides (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m^3	**14.50**	5.0 - 1050	For 24 hour =80
4	**Oxides of nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m^3	**21.52**	6.0 - 750	For 24 hour =80

3.1.5 Ambient Air Quality Monitoring Results at Village: Muradnagar

The detailed on-site monitoring results of $PM_{2.5}$, PM_{10}, SO_2 and NO_X are presented in **Table - 3.5**.

Table - 3.5: Ambient Air Quality Monitoring Results at Village: Muradnagar

Sr. No	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m^3	**78.2**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**47.64**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxides (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m^3	**13.45**	5.0 - 1050	For 24 hour =80
4	**Oxides of nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m^3	**18.83**	6.0 - 750	For 24 hour =80

3.1.6 Ambient Air Quality Monitoring Results at Village: Bakhsh Khera

The detailed on-site monitoring results of $PM_{2.5}$, PM_{10}, SO_2 and NO_X are presented in **Table - 3.6**.

Table - 3.6: Ambient Air Quality Monitoring Results at Village: Bakhsh Khera

Sr. No	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m^3	**77.2**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**47.29**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxides (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m^3	**13.36**	5.0 - 1050	For 24 hour =80
4	**Oxides of nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m^3	**19.52**	6.0 - 750	For 24 hour =80

3.1.7 Ambient Air Quality Monitoring Results at Village: Mahsona

The detailed on-site monitoring results of $PM_{2.5}$, PM_{10}, SO_2 and NO_X are presented in **Table - 3.7**.

Table - 3.7: Ambient Air Quality Monitoring Results at Village: Mahsona

Sr. No	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2017	µg/m^3	**76.9**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**48.83**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxides (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2017	µg/m^3	**13.56**	5.0 - 1050	For 24 hour =80
4	**Oxides of nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2017	µg/m^3	**19.69**	6.0 - 750	For 24 hour =80

3.1.8 Discussion on Ambient Air Quality in the Study Area

The value of PM_{10} at Ambient Air Monitoring Station No: 1, 2, 3, 4 & 5 are 85.2 µg/m^3, 86.4 µg/m^3, 78.2 µg/m^3, 77.2 µg/m^3 & 76.9 µg/m^3 respectively which were within permissible limit of 100 µg/m^3 and $PM_{2.5}$ levels are 52.58 µg/m^3 Near Main Gate of Premises, 53.65 µg/m^3 Near Project Area, 47.64 µg/m^3 at Village Muradnagar, 47.29 µg/m^3 at Village: Bakhsh Khera and 48.83 µg/m^3 at Village: Mahsona, were also observed within permissible limit of 60 µg/m^3 (for residential, rural and other areas as stipulated in the National Ambient Air Quality Standards). SO_2 ranges between 13.36 µg/m^3 to 14.59 µg/m^3 and NO_X ranges between 18.83 µg/m^3 to 21.52 µg/m^3 was also observed within the corresponding stipulated limits (Limit for SO_2 and NO_X; 80 µg/m^3) at all of the 05 monitoring locations. Station wise variation of ambient air quality parameters has been graphically shown in **Figure - 3.1 to 3.4**.

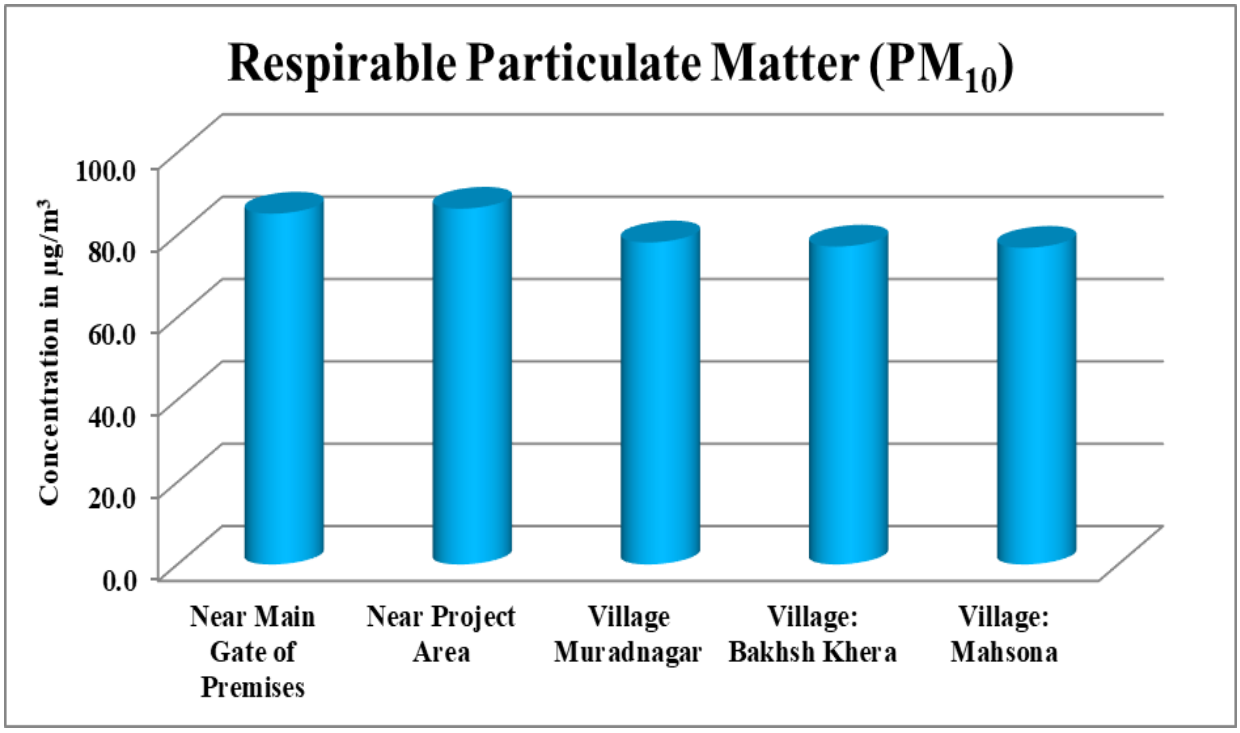

Figure - 3.1: Graphs Showing PM_{10} Concentration at all sites

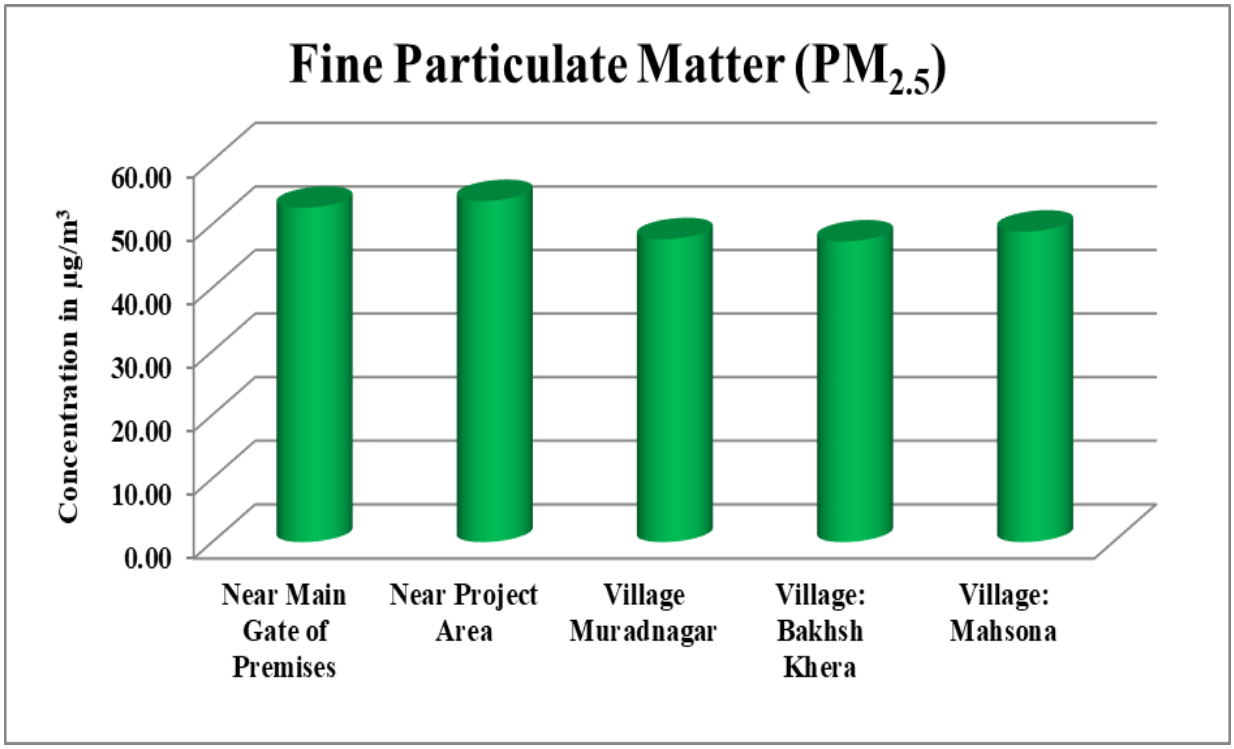

Figure - 3.2: Graphs Showing $PM_{2.5}$ Concentration at all sites

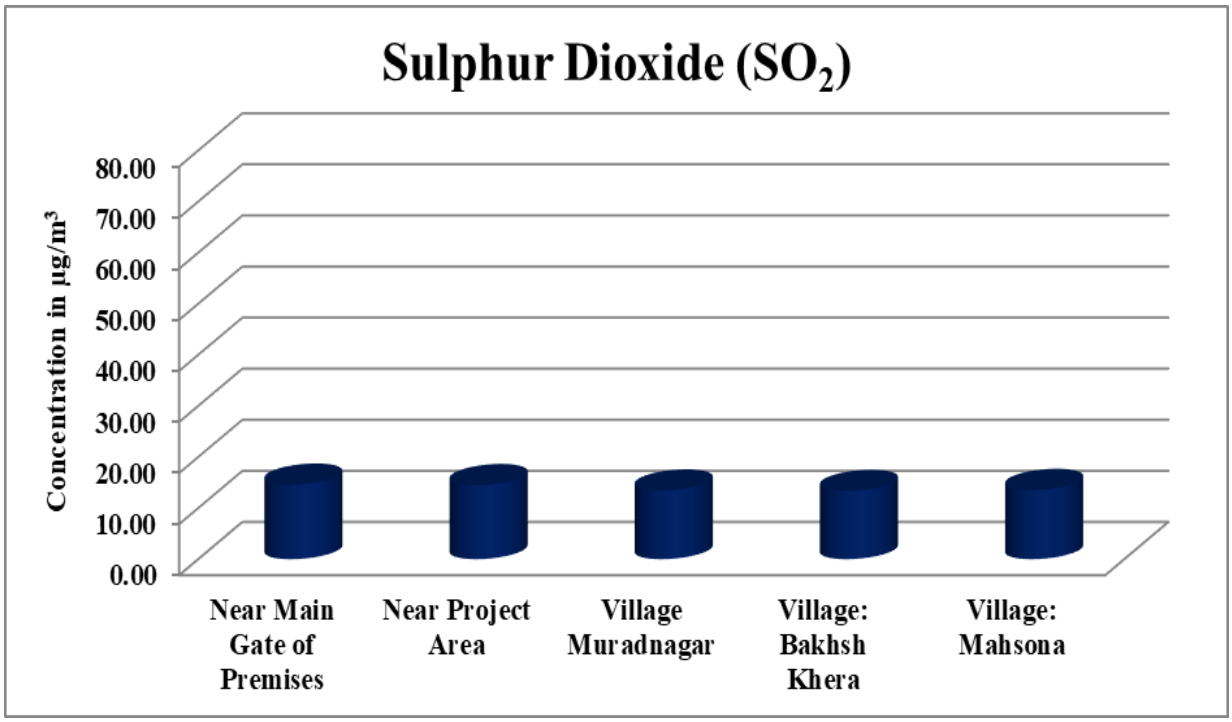

Figure - 3.3: Graphs Showing SO_2 Concentration at all sites

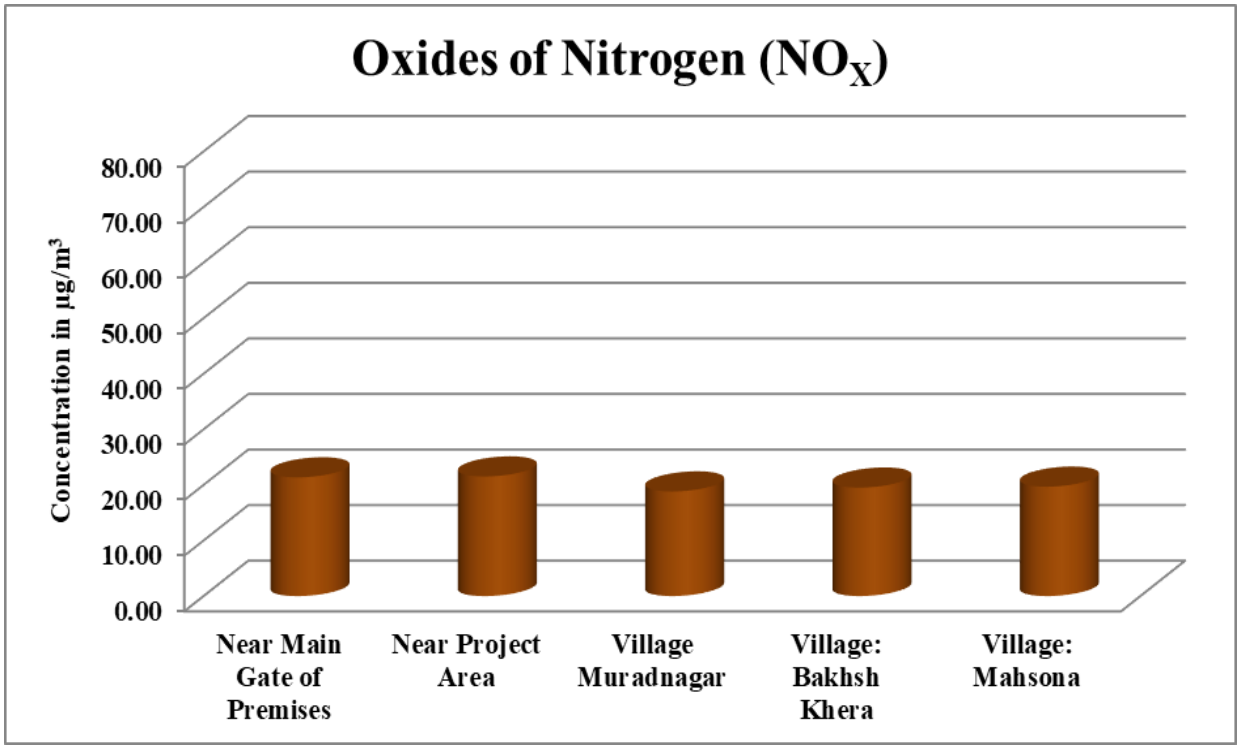

Figure - 3.4: Graphs Showing NO_X Concentration at all sites

3.2 STACK EMISSION MONITORING

Stack Emission monitoring was carried out by EPA approved Laboratory on date 07.03.2024 for the installed 18.0 TPH boiler (attached with Electro Static Precipitator as air pollution control device with a stack height of 42.0 meter).

3.2.1 Stack Emission Monitoring Methodology

Monitoring was conducted in respect of the following parameters:

- Particulate Matter (PM)

The Method used for Stack Emission monitoring and range of testing with CPCB standard are given in **Table - 3.8**

Table - 3.8: Details of Stack Emission Monitoring Results

Sr. No.	Parameter	Unit	Protocol	Result	Range of Testing/ Limit of Detection	Standard (as per CPCB)
1	Particulate Matter	mg/Nm^3	IS: 11255 (Part-1): 1985 Reaffirmed: 2019	**44.52**	2.0 - 1000	150

3.3 AMBIENT NOISE MONITORING

3.3.1 Ambient Noise Monitoring Locations

The main objective of noise monitoring in the study area is to assess the present ambient noise levels near project site due to various industrial activities and increased vehicular movement. A preliminary reconnaissance survey has been undertaken to identify the major noise generating sources in the area. Ambient noise monitoring was conducted at 01 location as given in **Table - 3.9**.

Table - 3.9: Details of Ambient Noise Monitoring Stations

Sr. No	Location Code	Location name and description	Date of Monitoring
1.	NQ - 1	Near Project Premises	08/03/2024 (06:00 AM) to 09/03/2024 (06:00 AM)

3.3.2 Methodology of Noise Monitoring

Noise levels were measured using sound level meter. Noise level monitoring was carried out continuously for 24-hours with one hour interval starting at 06:00 hrs to 06:00 hrs next day. The noise levels were monitored on working days only. During each hour Leq were directly computed by the instrument based on the sound pressure levels. Monitoring was carried out at 'A' response.

3.3.3 Ambient Noise Monitoring Results

The location wise ambient noise monitoring results is summarized in **Table - 3.10**. The noise levels are graphically presented in **Figure - 3.5**.

Table - 3.10: Ambient Noise Monitoring Results

Ambient Noise Level				
Sr. No.	**Parameter**	**Unit**	**Results Day Time (06:00 AM - 10:00 PM)**	**Results Night Time (10:00 PM - 06:00 AM)**
1	**Equivalent sound level**	**dB(A)**	61.85	50.20

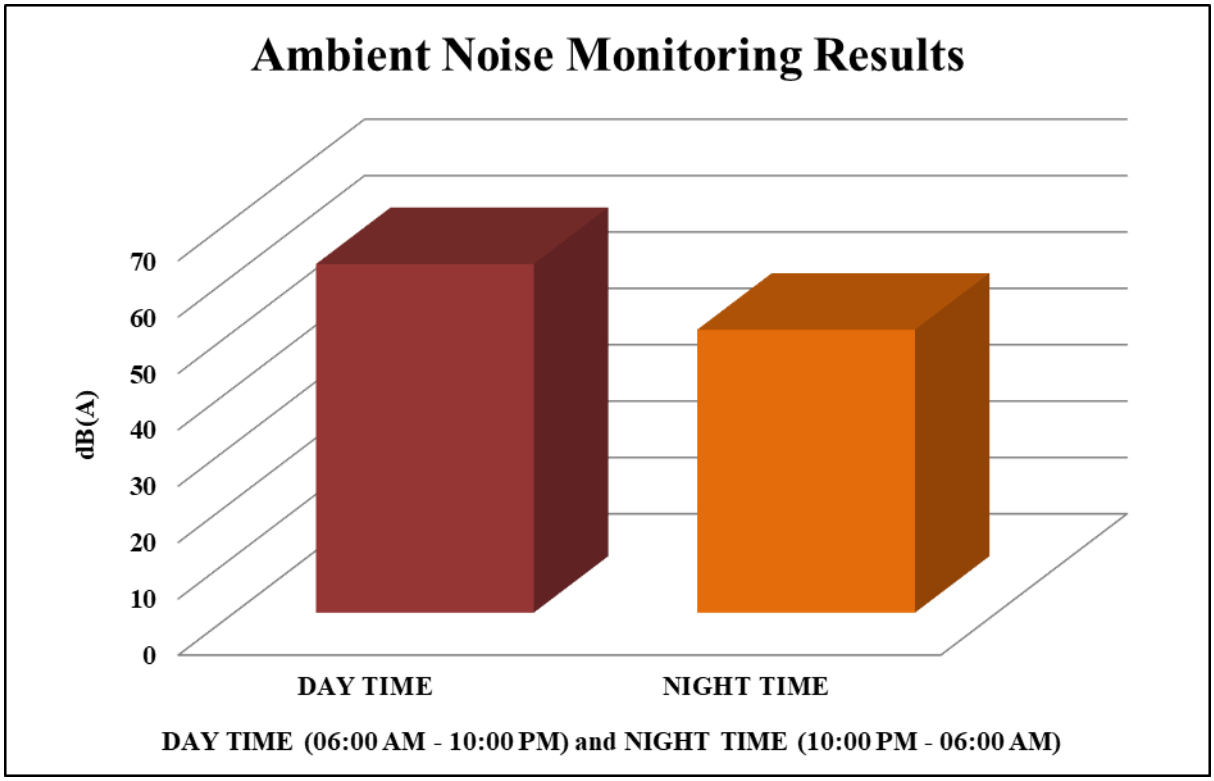

Figure - 3.5: Day and Night Time noise Level Near Project Premises

Table - 3.11: Noise Standards as per CPCB Schedule rule 3(1) and 4(1)

Noise Standards as per CPCB Schedule rule 3(1) and 4(1)			
Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

3.3.4 Discussion on Ambient Noise Levels in the Study Area

Day Time Noise Levels (L_{day}):

The day time noise level at monitoring station was found 61.85 dB(A), which is within limits prescribed for industrial area i.e. 75 db (A).

Night Time Noise Levels (L_{night}):

The night time noise level at monitoring station was found 50.20 dB(A), which is within limit prescribed for industrial area i.e. 70 dB (A).

3.4 GROUND WATER QUALITY MONITORING

3.4.1 Ground water Quality Monitoring Locations

Keeping in view the importance of ground water, sample of ground water was collected from the project site for the assessment of impacts of the project on the groundwater quality.

Water sample was collected from the project site. The sample was analyzed for various parameters to compare with the standards for Ground water as per IS: 10500 for Groundwater sources. The details of water sampling locations are given in **Table - 3.12.**

Table - 3.12: Details of Water Quality Monitoring Station

Sr. No	Location Code	Location name and description	Date of Monitoring
1.	GW - 1	**Borewell**	**11th October, 2023**
2.	GW - 1	**Borewell**	**01st November, 2023**
3.	GW - 1	**Borewell**	**21st December, 2023**
4.	GW - 1	**Borewell**	**13th January, 2024**
5.	GW - 1	**Borewell**	**01st February, 2024**
6.	GW - 1	**Borewell**	**09th March, 2024**

3.4.2 Methodology of ground water Quality Monitoring

Sampling of ground water was carried out on 11.10.2023, 01.11.2023, 21.12.2023, 13.01.2024, 01.02.2024 and 09.03.2024. Samples were collected as grab sample and sampling forms are filled in as per the sampling plan. The preservative sample were properly added to preserve as per Standard Operating Procedures (SOPs) and stored immediately in ice boxes, which were ensured for appropriate temperatures. **Sample for chemical analysis was collected in polyethylene carboys. Sample collected for metal content were acidified to <2 pH with 1 ml HNO_3. A sample for bacteriological analysis was collected in sterilized glass bottles.**

Soon after the completion of sampling, chain of custody sheets for the samples are filled in and then they were transported by road to Environmental & Technical Research Centre, Lucknow for further analysis. Proper care was taken during packing and transportation of samples. All the samples reached the central laboratory within the holding times for different parameters. After ensuring the same the samples were forwarded immediately for analysis.

The samples were analyzed as per the standard procedures specified in 'Standard Methods for the Examination of Water and Wastewater' published by American Public Health Association (APHA) and CPCB. The analytical techniques and the test methods adopted for testing of ground water are given in **Table - 3.13 to Table - 3.18.**

3.4.3 Ground water Quality Monitoring Results

The detailed Ground water quality monitoring results are presented in **Table - 3.13 to Table - 3.18.**

Table - 3.13: Ground water Quality Results of Borewell (October 2023)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.4**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 24th Ed. 2023 - 2130 B	**<2.0**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**386.4**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**<0.5**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**<0.05**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**52.8**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**27.21**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**26.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.33**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**<0.1**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**<1.0**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**<0.001**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**24.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**268.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**244.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.015**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.05**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.10**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.03**	0.02 - 5.0	0.1	0.3
23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.18**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.003**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.01**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**<0.5**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 2	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	***E. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	***T. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

Table - 3.14: Ground water Quality Results of Borewell (November, 2023)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.5**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 23rd Ed. 2017-2130 B	**<2.0**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**360.2**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**<0.5**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**<0.05**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**52.8**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**28.18**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**24.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.34**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**<0.1**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**<1.0**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**<0.001**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**28.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**272.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**248.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.015**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.05**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.09**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.04**	0.02 - 5.0	0.1	0.3
23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.22**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.003**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.01**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**<0.5**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 2	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	***E. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	***T. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

Table - 3.15: Ground water Quality Results of Borewell (December, 2023)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.4**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 23rd Ed. 2017-2130 B	**<2.0**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**374.8**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**<0.5**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**<0.05**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**52.8**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**24.3**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**30.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.38**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**<0.1**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**<1.0**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**<0.001**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**26.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**256.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**232.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.015**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.05**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.12**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.02**	0.02 - 5.0	0.1	0.3
23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.29**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.003**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.01**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**<0.5**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 2	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	***E. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	***T. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

Table - 3.16: Ground water Quality Results of Borewell (January 2024)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.6**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 23rd Ed. 2017-2130 B	**<2.0**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**380.2**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**<0.5**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**<0.05**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**54.4**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**28.8**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**28.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.36**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**<0.1**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**<1.0**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**<0.001**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**30.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**280.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**252.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.015**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.05**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.13**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.03**	0.02 - 5.0	0.1	0.3
23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.31**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.003**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.01**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**<0.5**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 2	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	***E. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	***T. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

Table - 3.17: Ground water Quality Results of Borewell (February 2024)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.4**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 23rd Ed. 2017-2130 B	**<2.0**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**376.0**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**<0.5**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**<0.05**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**49.6**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**25.27**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**26.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.40**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**<0.1**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**<1.0**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**<0.001**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**24.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**256.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**228.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.015**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.05**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.08**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.05**	0.02 - 5.0	0.1	0.3
23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.21**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.003**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.01**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**<0.5**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 2	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	***E. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	***T. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

Table - 3.18: Ground water Quality Results of Borewell (March, 2024)

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
Physico-chemical Parameters							
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.5**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 23rd Ed. 2017-2130 B	**<2.0**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**384.4**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**<0.5**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**<0.05**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**51.2**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**25.27**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**24.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.36**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**<0.1**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**<1.0**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**<0.001**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**28.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**260.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**232.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.015**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.05**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.12**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.06**	0.02 - 5.0	0.1	0.3
23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.42**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.003**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.01**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**<0.5**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.02**	0.02 - 2	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**<0.03**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	***E. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	***T. coli***	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

3.5 SOIL MONITORING

3.5.1 Soil Monitoring Locations

The objective of the soil monitoring is to identify the impacts of ongoing construction activities on soil quality and also predict impacts, which have arisen due to execution of Industrial allied activities. Accordingly, a study of assessment of the soil quality has been carried out.

To assess impacts of ongoing construction activities on the soil in the area, the Physico-chemical characteristics of soils were examined by obtaining soil samples from selected points and analysis of the same. Single sample of soil was collected from the project site for studying soil characteristics, the location of which is listed in **Table - 3.19**.

Table - 3.19: Details of Soil Monitoring Station

Sr. No	Location Code	Location name and description
1.	SQ - 1	Near Plant Area

3.5.2 Methodology of Soil Monitoring

The sampling has been done in line with IS: 2720 & Methods of Soil Analysis, Part-1st, 2nd Edition, 1986 of American Society for Agronomy and Soil Science Society of America. The homogenized samples were analyzed for physical and chemical characteristics (physical, chemical and heavy metal concentrations). The soil samples were collected in the month of March on 09.03.2024.

The samples have been analyzed as per the established scientific methods for Physico-chemical parameters. The heavy metals have been analyzed by using Atomic Absorption Spectro-photometer.

3.5.3 Soil Monitoring Results

Single sample of soil is collected from the site to check the quality of soil of the study area. The Physico-chemical characteristics of the soil, as obtained from the analysis of the soil sample, are presented in **Table - 3.20**.

Table - 3.20: Physico-Chemical Characteristics of Soil Near Plant Area

Sr. No.	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection
1	**pH**	-	IS: 2720 (Part-26): 1987 Reaffirmed: 2016	**7.4**	1 - 14
2	**Electrical Conductivity**	µmhos/cm	IS: 14767:2000 Reaffirmed: 2021	**302.0**	1.0 - 40000
3	**Moisture content**	%	IS: 2720 (Part-02): 1973 Reaffirmed: 202	**3.10**	1.0 - 50
4	**Sulphur**	Kg/Hec	IS:14685: 1999 Reaffirmed: 2019	**14.23**	5.0 - 100
5	**Boron**	mg/kg	Method Manual of Soil Testing in India	**1.56**	1.0 - 100
6	**Copper**	mg/kg	Method Manual of Soil Testing in India	**0.42**	0.3 - 500
7	**Zinc**	mg/kg	Method Manual of Soil Testing in India	**10.69**	1.0 - 500
8	**Iron**	mg/kg	Method Manual of Soil Testing in India	**98.74**	5.0 - 500
9	**Manganese**	mg/kg	Method Manual of Soil Testing in India	**8.52**	5.0 - 500

3.5.4 Discussion on Soil Characteristics in the Study Area

The soil in study area is characterized by moderate organic content. The soil quality in the project area has not been affected by the project activities.

Annexure-1 Copy of CTO

Uttar Pradesh Pollution Control Board
Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010
Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.com, Website: www.uppcb.com

155891/UPPCB/Unnao(UPPCBRO)/CTO/both/HARDOI/2022 Date: 12/05/2022

To,
M/s
SHRI GANG INDUSTRIES AND ALLIED PRODUCTS LIMITED
Plot no - B 2/6 B, 2/7, UPSIDC Industrial Area, Sandila Phase IV, Lucknow Hardoi Road, Tehsil Sandila, District Hardoi (Uttar Pradesh),HARDOI,241204

Consolidated Consent to Operate and Authorisation hereinafter referred to as the CCA (Consolidated Consent & authorization) (Fresh) under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974 and under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981

Consent No-16190874 Date-12/05/2022

CCA is hereby granted to **SHRI GANG INDUSTRIES AND ALLIED PRODUCTS LIMITED** located at **Plot no - B 2/6 B, 2/7, UPSIDC Industrial Area, Sandila Phase IV, Lucknow Hardoi Road, Tehsil Sandila, District Hardoi (Uttar Pradesh),HARDOI,241204**. subject to the provisions of **the Water Act, Air Act** and the orders that may be made further and subject to following terms and conditions :-

1. This CCA SHRI GANG INDUSTRIES AND ALLIED PRODUCTS LIMITED **granted for the period from 11/05/2022 to 31/12/2023** and valid for manufacturing of following products with **Capital Investment/Net Assets Values 12532.00 Lakhs**

S No	Product	Quantity	Unit
1	ENA/RS using Grain as main raw material	55.0	Kilo Liters/Day
2	Co-Generation Power	2.0	Megawatt

2. Specific Conditions under Water Act :-

(i) The daily quantity of effluent discharge (KLD) :-

Kind of Effulant	Quantity(KLD)	Treatment facility and discharge point
Domestic	**6.0 KLD**	**Septic Tank**
Industrial	**Zero liquid Discharge (ZLD)**	**ETP**

(ii) Trade Effluent Treatment and Disposal :-The applicant shall operate **Effluent Treatment Plant** consisting of primary/secondary and tertiary treatment as is required with reference to influent quantity and quality.

In case of stoppage of functioning of ETP, production has to be stopped immediately and this Board has to be intimated by fax/phone/email with a report in this regard to be dispatched immediately.

(iii) The treated effluent shall be recycled to the maximum extent and should be reused within the premises for gardening etc. Quality of the treated effluent shall meet to the following general and specific standards as prescribed under Environment (Protection) Rules, 1986 and applicable to the unit from time-to-time :-

Industrial Effluent Quality Standard

S.No.	Parameter	Standard
1	Zero Liquid Discharge	ZLD

(iv) Sewage Treatment and Disposal :- The applicant shall provide comprehensive STP as is required with reference to influent quantity and quality.In case of stoppage of functioning of STP, production has to be stopped immediately and this Board has to be intimated by fax/phone/email with a report in this regard to be dispatched immediately.

(v) The treated sewage shall be reused in gardening and the same shall be maintained continuously so as to achieve the quality of the treated effluent to the following standards.

S No.	Parameters	Standards

3. Conditions under Air Act :-

i) The applicant shall use following fuel and install a comprehensive control system consisting of control equipment as is required with reference to generation of emissions and operate and maintain the same continuously so as to achieve the level of pollutants to the following standards

Air Pollution Source Details

S No.	Air Pollution Source	Type of fuel	Stack no	Control Device	Height of Stack
1	01 nos. Boiler (capacity of 18.0 TPH) along with ESP	Rice Husk/Coal	1	Particulate Matter	38 meter from GL
2	500 KVA DG set	HSD	2	Particulate Matter	As specified in EPA, 1986
3	750 KVA DG set	HSD	3	Particulate Matter	AS per E(P) Rules, 1986

Emmission Quality Standards

S No.	Stack no	Parameters	Standards
1	1	Particulate Matter	150 mg/Nm3

In case of stoppage of functioning of air pollution control equipment, production has to be stopped immediately and this Board has to be intimated by fax/phone/email with a report in this regard to be dispatched immediately

ii) Noise from the D.G. Set and other source(s) should be controlled by providing an acoustic enclosure as is required for meeting the ambient noise standards for night and day time as prescribed for respective areas/zones (Industrial, Commercial, Residential, Silence) which are as follows :-

Day time : from 6.00 a.m. to 10.00 p.m., Night time: from 10.00 p.m. to 6.00 a.m.
(iii) The unit will not use any type of restricted fuel.

Standards for Noise level in db(A) Leq	**Industrial Area**		**Commercial Area**		**Residential Area**		**Silence Zone**	
	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
	75	70	65	55	55	45	50	40

6. Compulsory documents to be submitted by the Industry/Unit :-

(i) Annual return in Form-4 and Waste Disposal Manifest in Form-10 under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and Third Party Audit Report.
(ii) Environment Statement in Form-V of Environment (Protection) Rules, 1986.
(iii) Quarterly compliance report of the CCA, photograph of ETP/APCs/Waste Storage Area.
7. Unit has to apply for renewal of CCA well in advance of 60 days of expiry of this CCA.
8. Competent Authority reserves the right to change/modify/add any time any condition of this CCA.
9. Unit has to comply with the other general conditions as annexed herewith. Non compliance of any provision of this CCA and provisions of the Water Act, Air Act and Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 will results in legal action under the aforesaid Acts and Rules.
10. In compliance to the G.O dated 1011/81-7-2021-09 (Writ)/2016 dt.13.10.2021 issued by Department of Environment, Forest and Climate Change, Uttar Pradesh. You are directed to develop Miyawaki Forest as per the SOP available at URL:-http://www.upecp.in/TrainingSession.aspx for ensuring timely compliance of this direction, you are hereby directed to submit a bank guarantee with minimum validity of one year of the amount equivalent to the sum of initial consent fees (Air and Water) or Rs. 50,000/- (Rs. Fifty Thousand Only) whichever is more, within 30 days from the date of issuance of this certificate. In case of non-compliance of this direction, your consent shall be revoked by the Board.
11. The industry will have to obtain No objection certificate for abstraction of ground water. It will be the responsibility of the industry to comply with the various conditions of the NOC obtained from the competent authority and submit to the Board, within 3 months time failing which CTO shall be revoked.

Chief Environmental Officer, Circle-5, UPPCB.

Copy to:

Regional Officer, UPPCB, Unnao.

Chief Environmental Officer, Circle-5, UPPCB.

Annexure

Specific Conditions

1. This consent is valid for the production of 55.0 KLD Extra Neutral Alcohol (ENA)/Rectified Spirit (RS) using 135 Ton/day Grain as main raw material and also 2.0 MW co-power generation power. In compliance of the CPCB guidelines the unit is allowed to operate 365 days per annum.

2. The industry shall use Grain as raw material for manufacturing of Extra Neutral Alcohol (ENA)/Rectified Spirit (RS).This consent is valid for the current products and capacity. In Case of any change in process,capacity enhancement etc. consent to establish (CTE) Certificate shall be obtained from the Board.

3. The industry shall ensure to use solid waste from the grain based operations generally comprises of fibers and proteins in the form of DDGS (30 TPD), which shall be ideally used as cattle feed.

4. The industry shall ensure to operate and maintain the MEE and CPU to ensure Zero Liquid Discharge; failing which, this consent order shall be treated as cancelled.

5. Industry shall comply all other directions issued under the Water (Prevention and Control of Pollution) Act, 1974 stipulated by Central Pollution Control Board, New Delhi to ensure achievement of Zero Liquid Discharge (ZLD) positively.

6. The separated water from solid separation system such as condensate from evaporation concentration system such as MEE shall be reutilized in the process. If required, separated water and condensate may be treated before reutilization.

7. The storage facility provided for spent wash shall be properly lined and made impermeable and the storage capacity at any stage shall not exceed 07 days equivalent of production.

8. Domestic effluent shall be treated in soak pit/septic tank.

9. Industry shall operate and maintain measuring devices (water / flow meters) at required location (raw water consumption, solid separation system: feed, permeate and reject, evaporation concentration systems: feed concentrate and condensate, water reused in the process & concentrate utilized in drying system/equivalent technology) to record the water balance shortly without delay.

10. The industry shall ensure to obtained NOC of Ground Water from U.P. State Ground Water Department permission, as per applicable rules within 03 months and submit it to the Board.

11. Industry shall display the water balance and quantities of concentrated spent wash disposed in (drying system / equivalent technology) and report the reduction in raw water consumption as a result of adopting these systems.

12. Industry shall ensure to install web cameras at each strategic location such as MEE, CPU and lagoon for monitoring purpose. Industry shall operate and maintain installed web cameras at each strategic location spent wash storage lagoon and MEE and CPU etc. for monitoring purpose.

13. Industry shall operate and maintain the effluent treatment system (MEE and CPU) effectively and regularly. All the effluent treatment system shall be kept in good running condition all the time and failure (if any), shall be immediately rectified without delay otherwise, similar alternate arrangement shall be made. In the event of any failure of any pollution control system adopted by the industry, the respective production unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. Industry shall not discharge any treated / untreated effluent in to the river or any surface water bodies. No effluent shall be discharged outside of the factory premises in any circumstances; hence zero discharge condition shall be maintained at all the time.

14. Industry shall provide adequate arrangement for control of odour nuisance. All internal roads shall be made pucca. Industry shall maintain good housekeeping within factory premises, around effluent treatment facilities etc.

15. Wide green belt of broad leaf local species shall be developed all along the plant premises. As far as possible maximum area of open spaces shall be utilized for plantation purposes. Industry shall develop green belt within and around the plant premises in at-least 33% area of the total project area. Extensive tree plantation shall be carried out in this year.

16. Industry shall submit Environment Statement to this Board as per provision of Environment (Protection) amendment Rule, 1993 for the previous year ending 31st March on or before 30th September every year.

17. Industry shall make proper arrangement for safe and scientific handling, storage, transportation and disposal of all solid wastes, sludge etc. generated.

18. Spent wash generation, storage shall be done as per the guidelines of CPCB. Measuring system for spent wash storage shall be installed.

19. The industry shall submit ground water quality analysis report of the nearby areas on quarterly basis in coordination with UPPCB.

20. The unit shall submit the latest copy of Audited Balance Sheet/C.A. Certificate (Fixed Assets+ Current Assets - Current Liabilities) so that the Consent fee payable by the industry may be verified.

21. The Order issued by Hon'ble Courts/Hon'ble NGT, MoEF & CC, Central Pollution Control Board, U.P. Pollution Control Board, shall be complied with.

22. The industry shall provide copy of records of alcohol/rectified spirit production, spent wash generation details of MEE operations, mass flow meter reading connected with CPCB server etc. on monthly basis (by 10th of every month) to CPCB/UPPCB.

23. The industry will strictly comply with the provisions of Hazardous and other waste (Management & Transboundary Movement) Rules, 2016 will be complied. Generated hazardous waste will be disposed through authorized TSDF and record will be sent to this office in Form-10.

24. Analysis report from recognized laboratory for Solid concentration at inlet and outlet of MEE should be submitted to the Board within one month from the date of issue of this certificate.

25. The industry shall operate and maintain properly the 18 TPH Boiler and ESP.

26. Online Emission Monitoring System shall be installed at the 18 TPH boiler stack and connected to CPCB and UPPCB server.

27. The industry shall operate and maintain the Air Pollution Control System efficiently and continuously so as to satisfy the prescribed emission standards.

28. The industry shall adhere to the ambient Air quality prescribed standards at all the time.

29. The total ash generated shall be disposed in such a way that it should not affect the soil and the surrounding environment.

30. The industry shall ensure to comply with the provisions of the charter issued by CPCB on corporate responsibility for Environmental Protection.

31. The industry shall ensure to submit the stack monitoring report from accredited NABL laboratory for start the process.

32. Noise and emission level from the installed the DG sets of 500 KVA and 750 KVA capacity shall be within the prescribed norms.

33. Proposal for 100 % utilization of Fly ash shall be submitted by the unit within 03 months from the date of clearance of this certificate.

34. The industry shall comply with the provisions of, Environment (Protection) Act 1986, Water (Prevention and Control of Pollution) Act, 1974 as amended, Air (Prevention and Control of Pollution) Act, 1981 as amended, Plastic Waste Management Rules 2016, E- Waste (Management) Rules 2016, Solid Waste Management Rules 2016 & Hazardous and other Waste (Management and Transboundary Movement) Rules 2016 (Whichever is applicable).

35. The industry shall ensure to submit Bank Guarantee Rs. 10.0 Lakhs in the Board which is mentioned in the CTE certificate dated 25.04.2022 condition no. 15 within 15 days issuance of this certificate.

36. If closure order is issued by CPCB or UPPCB against this defaulting unit, then CTO issued earlier will remain suspended during the closure period and after ensuring the compliance and after revocation of closure order, the CTO will automatically be effective from the date of issuance of closure order revocation, with additional conditions mentioned in the closure revocation order.

General Conditions:-

The applicant shall get analyse the samples of effluent/emission/hazardous wastes at least once in a three month from the laboratory recognized by the MoEF and shall report to the UEPPCB.

1. The applicant shall however, not without the prior consent of the Board bring into use any new or altered outlet for the discharge of effluent or gases emission or sewage waste from the unit.
2. Treated waste water and domestic waste water shall be disposed jointly at one disposal point. The applicant shall provide discharge measurement equipment at final disposal point.
3. The applicant shall strictly comply with conditions of this CCA and submit compliance report of stipulated conditions within 30 days of receipt of this CCA. If, at any point of time, it is found that the industry is not complying with stipulated conditions or any further direction/instruction issued by the Board, legal action shall be initiated against the applicant.
4. The applicant shall maintain good house keeping. All valves/pipes/sewer/drains etc. must be leak-proof
5. The industry shall provide uninterrupted entry to the STPs/ETPs inlet and outlet points, Air Pollution Control equipment and stack for smooth sampling/monitoring of efficiency of pollution control measures.
6. The industry shall provide Inspection Book at the time of inspection to the Board's officials.
7. Whenever due to any accident or other unforeseen act or event, such emission occurs or is apprehended to occur in excess of standards laid down, such information shall be reported to the Board's offices and all other concerned offices. In case of failure of pollution control equipment, the production process connected to it shall be stopped with immediate effect.
8. The industry shall operate in a manner so that all emissions be emitted through designated chimney/stack only.

9. In case of any damage to the agriculture productivity, human habitation etc. by the operation of industry, it shall be imperative to stop production in the industry with immediate effect and such information shall be reported to Board's offices. The industry shall be liable to pay compensation also in such cases as decided by the Competent Authority.
10. The applicant shall apply before the 60 days of expiry of CCA or any change in production types/ production capacity/manufacturing process/capacity enhancement etc. or any change in effluent discharge point or emission point
11. The Board reserves the right to revoke/add/modify any stipulated condition issued along with CCA, as may be necessary.
12. The person authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous waste without obtaining prior permission of the Board.
13. Any unauthorized change in personnel, equipment as working condition as mentioned in the application by the person authorized shall constitute a breach of his authorization.
14. It is the duty of the authorized person to take prior permission of the Board to close down the facility.
15. The authorization is valid for temporary storage of Hazardous Waste within premises only.
16. The authorized agency shall ensure that on-line data with regard to quantity and nature of hazardous chemicals being used in the plant as well as air emission and waste generated within premises is displayed on Display Board of size 6x4 feet outside the main factory gate within premises
17. It is duty of the authorized person to take prior permission of this Board to close and cleanup the facility for treatment, storage and disposal of hazardous waste.
18. The applicant shall maintain record of hazardous waste in Form-3 and shall submit annual return in Form-4 on or before the 30th day of June following to the financial year to which that return relates.
19. In no case any hazardous waste shall be disposed off on land, in any drain, or into any water stream. All spillage must also be safely collected and stored.
20. Before the hazardous waste is stored or dumped in the facility, applicant must conduct a detailed physical and chemical analysis of hazardous waste sample and report to the Board.
21. Dried hazardous sludge from the process in the plant shall be stored in double lined HDPE pit constructed with R.C.C. or such material which does not react with the waste contained in it.
22. The storage area should be fenced properly and Sign/Notice Board indicating ï¿½Dangerï¿½ and ï¿½Hazardousï¿½ shall be displayed at appropriate position both in Hindi and English.
23. The industry shall store non-ferrous metal waste, used oil/spent oil waste in sealed drums placed on impervious floor under covered shed. Hazardous waste if required shall be sold only to Registered Recyclers/Re-processors.
24. In case of any transportation of hazardous waste, the details in Form-10 of the Hazardous and Other Wastes Rules, 2016 shall be submitted to the Board.

Chief Environmental Officer, Circle-5, UPPCB.

Annexure-2 Copy of Environmental Clearance

State Level Environment Impact Assessment Authority, Uttar Pradesh

Directorate of Environment, U.P.
Vineet Khand-1, Gomti Nagar, Lucknow - 226 010
Phone : 91-522-2300 541, Fax : 91-522-2300 543
E-mail : doeuplko@yahoo.com
Website : www.seiaaup.in

To,

M/s Shir Gang Industries and allied Products Ltd,
Plot no- B-2/6 & B-2/7, UPSIDC Industrial Area,
Sandila Phase IV, Lucknow Hardoi road,
Sandila, District- Hardoi, U.P.

Ref. No. 554 /Parya/SEAC/4450/2018 Date: 11 December, 2018

Sub: Environmental Clearance for Proposed 55 KLPD Grain Based Distillery along with 2.0 MW Co-generation Power Plant at B-2/6 & B-2/7, UPSIDC Industrial Area, Sandila Phase-IV, Lucknow Hardoi Road, Tehsil- Sandila, District- Hardoi, U.P. M/s Shri Gang Industries and Allied Production Ltd, Regarding.

Dear Sir,

Please refer to your application/letters 09-08-2018, 17-08-2018, 02-11-2018, 13-11-2018 & 15-11-2018 addressed to the Chairman/Secretary, State Level Environment Impact Assessment Authority (SEIAA) and Director, Directorate of Environment Govt. of UP on the subject as above. The State Level Expert Appraisal Committee considered the matter in its meetings held on dated 15/11/2018 and SEIAA in its meeting dated 23/11/2018.

A presentation was made by the project proponent along with their consultant M/s J. M. Enviro Net Pvt. Ltd. The proponent, through the documents submitted and the presentation made, informed the committee that:-

1. The environmental clearance is sought for Proposed 55 KLPD Grain Based Distillery along with 2.0 MW Co-generation Power Plant at B-2/6 & B-2/7, UPSIDC Industrial Area, Sandila Phase-IV, Lucknow Hardoi Road, Tehsil- Sandila, District- Hardoi, U.P. M/s Shri Gang Industries and Allied Production Ltd.
2. Terms of reference in the matter were issued through MoEF&CC letter No. IA-J-11011/375/2017-IA-II (I)]); dated 23rd August, 2017.
3. Public Hearing was conducted on 25/04/2018.
4. Salient features of the project as submitted by the project proponent:

S. No.	Particulars	Details
A.	Project Proposal	55 KLPD Grain based Distillery along with 2.0 MW Co-Generation Power Plant
B.	Location Details	Plot No. B-2/6 & B-2/7, UPSIDC Industrial Area, Sandila Phase IV, Lucknow Hardoi Road, Tehsil Sandila, District Hardoi (Uttar Pradesh)
C.	Area Details	
1.	Total land for proposed distillery	12.17 Hectares (30.09 Acres)
2.	Greenbelt & Plantation area	4.0 ha, i.e. ~33% of the project area will be covered under greenbelt & plantation
D.	Cost Details	
1.	Total Cost of the Project	Rs. 125.32 Crores
2.	Cost for Environmental Protection Measures	Capital Cost - Rs. 10 Crores Recurring Cost - Rs. 1 Crore/annum

5. Raw material details:

S.N.	Main Raw Material	Total requirement	Source	Storage
1.	Grain	129 - 135 TPD	Through vendors via road (5 to 500 km)	Silo (1500X 2= 3000 MT) & Godowns

6. Other salient feature details:

S.N.	Basic Requirement for the Project		
	Particulars	Total requirement	Source
1.	Water	571 KLPD	Ground Water

Under Secretary

2.	Power		1.8 MW	Proposed 2.0 MW Co-Generation Power Plant & D.G Sets (for emergency)
3.	Manpower		Persons(Direct) 400 persons (Indirect)	Unskilled/Semi skilled from Local area, Skilled from local/ Outside areas
4.	Fuel	Rice husk (Biomass) or	120 TPD	Through local vendors by road
		Coal	85 TPD	Authorized dealers
5.	Steam		14.9 TPH	Proposed 18 TPH boiler

7. Solid waste from the grain based operations generally comprises of fibers and proteins in the form of DDGS (30 TPD), which will be ideally used as cattle feed Yeast sludge will be added to wet cake.
8. Ash (20 TPD) from the boiler will be supplied to brick manufacturers & cement plant.
9. The distillery will be based on "Zero Effluent Discharge".
10. The project proposal falls under category–5(g) of EIA Notification, 2006 (as amended).

Based on the recommendations of the State Level Expert Appraisal Committee Meeting (SEAC) held on 15/11/2018 the State Level Environment Impact Assessment Authority (SEIAA) in its Meeting held on 23/11/2018 decided to grant the Environmental Clearance for proposed project along with subject to the effective implementation of the following general & specific conditions:

I. Statutory compliance:

1. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
2. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
3. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six - monthly compliance report. (in case of the presence of schedule-I species in the study area).
4. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
5. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.
6. The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules , 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989

II. Air quality monitoring and preservation.

1. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.
2. The project proponent shall install system carryout to Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission , and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind direct ions. (case to case basis small plants: Manual; Large plants: Continuous)
3. The project proponent shall submit monthly summary report of continuous stack emission and

air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugit ive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six- monthly monitoring report.

4. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.
5. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.
6. Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
7. The DG sets shall be equipped with suitable pollution control devices and the adequate stack height so that the emissions are in conformity with the extant regulations and the guidelines in this regard.
8. Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.

III. *Water quality monitoring and preservation:*

1. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises (applicable in case of the projects achieving ZLD) and connected to SPCB and CPCB online servers.
2. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises (applicable in case of the projects achieving the ZLD).
3. Process effluent /any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.
4. The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986, or as specified by the State Pollution Control Board while granting Consent under the Air/Water Act, whichever is more stringent.
5. Total fresh water requirement shall not exceed the proposed quantity or as specified by the Committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA in this regard.
6. Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.
7. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.

IV. *Noise monitoring and prevention:*

1. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
2. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.
3. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

V. *Energy Conservation measures:*

1. The energy sources for lighting purposes shall preferably be LED based.

VI. *Waste management:*

1. Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall

be provided on tank farm and the solvent transfer through pumps.

2. Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.
3. The company shall undertake waste minimization measures as below :-
   i. Metering and control of quantities of active ingredients to minimize waste .
   ii. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
   iii. Use of automated filling to minimize spillage.
   iv. Use of Close Feed system into batch reactors.
   v. Venting equipment through vapour recovery system.
   vi. Use of high pressure hoses for equipment clearing to reduce wastewater generation

VII. *Green Belt:*

1. Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant.

VIII. *Safety, Public hearing and Human health issues:*

1. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
2. The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
3. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
4. 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, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
5. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
6. There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished produc ts, and no parking to be allowed outside on public places

IX. *Corporate Environment Responsibility:*

1. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
2. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements /deviation/violation of the environmental / forest /wildli fe norms / conditions. The company shall have defined system of reporting infringements / deviation/ violation of the environmental/ forest / wildlife norms I conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
3. A separate Environmental Cell both at the project and company head quarter lev el, with qualified personnel shall be set up under the control of senior Executive , who will directly to the head of the organization.
4. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan

Member Secretary

shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

5. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

X. *Miscellaneous:*

1. Directions/suggestions given during public hearing and Commitment made by the project proponent should be strictly complied.
2. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
3. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
4. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
5. The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
6. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
7. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
8. The project proponent 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, commencing the land development work and start of production operation by the project.
9. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
10. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
11. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
12. Concealing factual data or submission of false /fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
13. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
14. The Ministry reserves the right to stipulate additional conditions if found necessary.
15. The Company in a time bound manner shall implement these conditions.
16. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
17. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the

Member Secretary

Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

18. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

No construction/operation is to be started without obtaining Prior Environmental Clearance. Concealing factual data and information or submission of false/fabricated data and failure to comply with any of the conditions stipulated in the Prior Environmental Clearance attract action under the provision of Environmental (Protection) Act, 1986.

This Environmental Clearance is subject to ownership of the site by the project proponents in confirmation with approved Master Plan for Hardoi. In case of violation; it would not be effective and would automatically be stand cancelled.

The project proponent has to ensure that the proposed site in not a part of any no- development zone as required/prescribed/indentified under law. In case of the violation this permission shall automatically deemed to be cancelled. Also, in the event of any dispute on ownership or land use of the proposed site, this Clearance shall automatically deemed to be cancelled.

Further project proponent has to submit the regular 6 monthly compliance report regarding general & specific conditions as specified in the E.C. letter and comply the provision of EIA notification 2006 (as Amended).

These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006 including the amendments and rules made thereafter.

(Ashish Tiwari)
Member Secretary, SEIAA

No...../Parya/SEAC/4450/2018 Dated: As above

Copy with enclosure for Information and necessary action to:

1. The Principal Secretary, Department of Environment, Govt. of Uttar Pradesh, Lucknow.
2. Advisor, IA Division, Ministry of Environment, Forests & Climate Change, Govt. of India, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi.
3. Additional Director, Regional Office, Ministry of Environment & Forests, (Central Region), Kendriya Bhawan, 5th Floor, Sector-H, Aliganj, Lucknow.
4. District Magistrate Hardoi.
5. The Member Secretary, U.P. Pollution Control Board, TC-12V, Paryavaran Bhawan, Vibhuti Khand, Gomti Nagar, Lucknow.
6. Copy to Web Master/ guard file.

(Ashish Tiwari)
Member Secretary, SEIAA

Annexure-3 Monitoring Reports

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/45

TEST REPORT
WATER & WASTE WATER ANALYSIS

Test Report Ref No.: ETRC/EPA/9473/2023	**Date of Report:** 10.10.2023
Name /Address/Type of Industry	**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	**Borewell**	6	Sample Collected By	Industry self
3	Sample received date	11.10.2023	7	Analysis Start Date	11.10.2023
4	Sample Quantity	5.0 liters	8	Analysis End Date	16.10.2023

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
	Physico-chemical Parameters						
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.4**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 24th Ed. 2023 - 2130 B	**BDL**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**386.4**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**BDL**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**BDL**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**52.8**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**27.21**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**26.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.33**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**BDL**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**BDL**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**BDL**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**24.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**268.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**244.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.10**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.03**	0.02 - 5.0	0.1	0.3

Mobile : +91 9897674227, 9936669576 | PAN No.: AHWPG8397H | GSTIN No.: 09AHWPG8397H1ZD

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

Test Report Ref No.: ETRC/EPA/9473/2023

23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.18**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**BDL**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 2.0	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 5.0	0.05	No Relaxation
	Microbiological Parameters						
30	**E. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	**T. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

BDL=Below Detection Limit

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Verma

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre
CHECKED

Ritu garg

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/45

TEST REPORT
WATER & WASTE WATER ANALYSIS

Test Report Ref No.: ETRC/EPA/9698/2023	**Date of Report:** 06.11.2023
Name /Address/Type of Industry	**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	**Borewell**	6	Sample Collected By	Industry self
3	Sample received date	01.11.2023	7	Analysis Start Date	01.11.2023
4	Sample Quantity	5.0 liters	8	Analysis End Date	05.11.2023

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
	Physico-chemical Parameters						
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.5**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 24th Ed. 2023 - 2130 B	**BDL**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**360.2**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**BDL**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**BDL**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**52.8**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**28.18**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**24.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.34**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**BDL**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**BDL**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**BDL**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**28.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**272.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**248.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.09**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.04**	0.02 - 5.0	0.1	0.3

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

Test Report Ref No.: ETRC/EPA/9698/2023

23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.22**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**BDL**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 2.0	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	**E. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	**T. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

BDL=Below Detection Limit

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre
CHECKED

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/45

TEST REPORT
WATER & WASTE WATER ANALYSIS

Test Report Ref No.: ETRC/EPA/10060/2023	**Date of Report:** 26.12.2023
Name /Address/Type of Industry	**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	**Borewell**	6	Sample Collected By	Industry self
3	Sample received date	21.12.2023	7	Analysis Start Date	21.12.2023
4	Sample Quantity	5.0 liters	8	Analysis End Date	26.12.2023

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
	Physico-chemical Parameters						
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.4**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 24th Ed. 2023 - 2130 B	**BDL**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**374.8**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**BDL**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**BDL**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**52.8**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**24.3**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**30.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.38**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**BDL**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**BDL**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**BDL**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**26.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**256.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**232.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.12**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.02**	0.02 - 5.0	0.1	0.3

Mobile : +91 9897674227, 9936669576 | PAN No.: AHWPG8397H | GSTIN No.: 09AHWPG8397H1ZD

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

Test Report Ref No.: ETRC/EPA/10060/2023

23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.29**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**BDL**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 2.0	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	**E. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	**T. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

BDL=Below Detection Limit

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Verma

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre
CHECKED

Ritu garg

Authorized Signatory
(Ritu Garg)
QM

Mobile : +91 9897674227, 9936669576 | PAN No.: AHWPG8397H | GSTIN No.: 09AHWPG8397H1ZD

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/45

TEST REPORT
WATER & WASTE WATER ANALYSIS

Test Report Ref No.: ETRC/EPA/10178/2024	**Date of Report:** 20.01.2024
Name /Address/Type of Industry	**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	**Borewell**	6	Sample Collected By	Industry self
3	Sample received date	13.01.2024	7	Analysis Start Date	13.01.2024
4	Sample Quantity	5.0 liters	8	Analysis End Date	19.01.2024

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
	Physico-chemical Parameters						
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.6**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 24th Ed. 2023 - 2130 B	**BDL**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**380.2**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**BDL**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**BDL**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**54.4**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**28.8**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**28.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.36**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**BDL**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**BDL**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**BDL**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**30.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**280.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**252.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.13**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.03**	0.02 - 5.0	0.1	0.3

Mobile : +91 9897674227, 9936669576 | PAN No.: AHWPG8397H | GSTIN No.: 09AHWPG8397H1ZD

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

Test Report Ref No.: ETRC/EPA/10178/2024

23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.31**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**BDL**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 2.0	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 5.0	0.05	No Relaxation
	Microbiological Parameters						
30	**E. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	**T. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

BDL=Below Detection Limit

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre
CHECKED

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/45

TEST REPORT
WATER & WASTE WATER ANALYSIS

Test Report Ref No.: ETRC/EPA/10315/2024	**Date of Report:** 06.02.2024
Name /Address/Type of Industry	**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	**Borewell**	6	Sample Collected By	Industry self
3	Sample received date	01.02.2024	7	Analysis Start Date	01.02.2024
4	Sample Quantity	5.0 liters	8	Analysis End Date	05.02.2024

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
	Physico-chemical Parameters						
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.4**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 24th Ed. 2023 - 2130 B	**BDL**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**376.0**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**BDL**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**BDL**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**49.6**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**25.27**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**26.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.40**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**BDL**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**BDL**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**BDL**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**24.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**256.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**228.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.08**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.05**	0.02 - 5.0	0.1	0.3

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

Test Report Ref No.: ETRC/EPA/10315/2024

23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.21**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**BDL**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 2.0	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	**E. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	**T. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

BDL=Below Detection Limit

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre ★ CHECKED

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/42

TEST REPORT
AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No.: ETRC/1503/12407/2024		**Date of Report:** 15.03.2024	
Name /Address/Type of Industry		**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**	
Monitored by		**ETRC, Lucknow**	
Location of Sampling points		**Near Main Gate of Premises**	
Sr. No.	**GENERAL OBSERVATIONS**	**DETAILS-PM_{10}**	**DETAILS-$PM_{2.5}$**
1(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	55	55
(d)	Average ambient temperature (°C)	29	29
(e)	Time of Sampling Started (Hours)	10:45 am (07.03.2024)	10:45 am (07.03.2024)
(f)	Time of Sampling completed (Hours)	10:26 am (08.03.2024)	10:26 am (08.03.2024)
(g)	Total time of sampling (Minutes)	24 hour (1415 minutes)	24 hour (1415 minutes)
2	Average Air sampling rate for PM (m^3/minute)	1.160	NA
3	Average sampling rate for gas (LPM)	0.5	NA
4	**TOTAL VOLUME OF AIR SAMPLED** • PM • GAS	 • 1641.864 • 707.7	 • 23.583

TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2022	µg/m^3	**85.2**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**52.58**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxide (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2022	µg/m^3	**14.59**	5.0 - 1050	For 24 hour =80
4	**Oxides of Nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2022	µg/m^3	**21.36**	6.0 - 750	For 24 hour =80

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Environmental And Technical Research Centre ★ CHECKED

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/42

TEST REPORT
AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No.: ETRC/1503/12408/2024		**Date of Report:** 15.03.2024	
Name /Address/Type of Industry		**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**	
Monitored by		**ETRC, Lucknow**	
Location of Sampling points		**Near Project Area**	
Sr. No.	**GENERAL OBSERVATIONS**	**DETAILS-PM_{10}**	**DETAILS-$PM_{2.5}$**
1(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	58	55
(d)	Average ambient temperature (°C)	29	29
(e)	Time of Sampling Started (Hours)	10:52 am (07.03.2024)	10:52 am (07.03.2024)
(f)	Time of Sampling completed (Hours)	10:40 am (08.03.2024)	10:40 am (08.03.2024)
(g)	Total time of sampling (Minutes)	24 hour (1409 minutes)	24 hour (1409 minutes)
2	Average Air sampling rate for PM (m^3/minute)	1.155	NA
3	Average sampling rate for gas (LPM)	0.5	NA
4	**TOTAL VOLUME OF AIR SAMPLED** • PM • GAS	 • 1627.164 • 704.4	 • 23.475

TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2022	µg/m^3	**86.4**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**53.65**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxide (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2022	µg/m^3	**14.50**	5.0 - 1050	For 24 hour =80
4	**Oxides of Nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2022	µg/m^3	**21.52**	6.0 - 750	For 24 hour =80

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Verma

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre ★ CHECKED

Ritu Garg

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/42

TEST REPORT
AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No.: ETRC/1503/12409/2024		**Date of Report:** 15.03.2024	
Name /Address/Type of Industry		**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**	
Monitored by		**ETRC, Lucknow**	
Location of Sampling points		**Village: Muradnagar**	
Sr. No.	**GENERAL OBSERVATIONS**	**DETAILS-PM_{10}**	**DETAILS-$PM_{2.5}$**
1(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	58	55
(d)	Average ambient temperature (°C)	29	29
(e)	Time of Sampling Started (Hours)	11:05 am (07.03.2024)	11:05 am (07.03.2024)
(f)	Time of Sampling completed (Hours)	10:56 am (08.03.2024)	10:56 am (08.03.2024)
(g)	Total time of sampling (Minutes)	24 hour (1411 minutes)	24 hour (1411 minutes)
2	Average Air sampling rate for PM (m^3/minute)	1.165	NA
3	Average sampling rate for gas (LPM)	0.5	NA
4	**TOTAL VOLUME OF AIR SAMPLED** • PM • GAS	 • 1643.349 • 705.3	 • 23.508

TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2022	µg/m^3	**78.2**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**47.64**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxide (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2022	µg/m^3	**13.45**	5.0 - 1050	For 24 hour =80
4	**Oxides of Nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2022	µg/m^3	**18.83**	6.0 - 750	For 24 hour =80

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Environmental And Technical Research Centre ★ CHECKED

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/42

TEST REPORT
AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No.: ETRC/1503/12410/2024		**Date of Report:** 15.03.2024	
Name /Address/Type of Industry		**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**	
Monitored by		**ETRC, Lucknow**	
Location of Sampling points		**Village: Bakhsh Khera**	
Sr. No.	**GENERAL OBSERVATIONS**	**DETAILS-PM_{10}**	**DETAILS-$PM_{2.5}$**
1(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	58	58
(d)	Average ambient temperature (°C)	28	28
(e)	Time of Sampling Started (Hours)	10:55 am (08.03.2024)	10:55 am (08.03.2024)
(f)	Time of Sampling completed (Hours)	10:42 am (09.03.2024)	10:42 am (09.03.2024)
(g)	Total time of sampling (Minutes)	24 hour (1409 minutes)	24 hour (1409 minutes)
2	Average Air sampling rate for PM (m^3/minute)	1.165	NA
3	Average sampling rate for gas (LPM)	0.5	NA
4	**TOTAL VOLUME OF AIR SAMPLED** • PM • GAS	 • 1641.252 • 704.4	 • 23.472

TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2022	µg/m^3	**77.2**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**47.29**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxide (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2022	µg/m^3	**13.36**	5.0 - 1050	For 24 hour =80
4	**Oxides of Nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2022	µg/m^3	**19.52**	6.0 - 750	For 24 hour =80

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre CHECKED

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/42

TEST REPORT
AMBIENT AIR QUALITY MONITORING REPORT

Test Report Ref No.: ETRC/1503/12411/2024		**Date of Report:** 15.03.2024	
Name /Address/Type of Industry		**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**	
Monitored by		**ETRC, Lucknow**	
Location of Sampling points		**Village: Mahsona**	
Sr. No.	**GENERAL OBSERVATIONS**	**DETAILS-PM_{10}**	**DETAILS-$PM_{2.5}$**
1(a)	Weather conditions	Clear	Clear
(b)	Wind direction	West to East	West to East
(c)	Average humidity (%)	58	58
(d)	Average ambient temperature (°C)	28	28
(e)	Time of Sampling Started (Hours)	11:03 am (08.03.2024)	11:03 am (08.03.2024)
(f)	Time of Sampling completed (Hours)	10:52 am (09.03.2024)	10:52 am (09.03.2024)
(g)	Total time of sampling (Minutes)	24 hour (1413 minutes)	24 hour (1413 minutes)
2	Average Air sampling rate for PM (m^3/minute)	1.155	NA
3	Average sampling rate for gas (LPM)	0.5	NA
4	**TOTAL VOLUME OF AIR SAMPLED** • PM • GAS	 • 1632.015 • 706.5	 • 23.551

TEST RESULT

Sr. No.	Particulars	Protocol	Unit	Result	Range of testing /limit of detection	Standard as per NAAQS; dated 18/11/ 2009
1	**Particulate matters size less than 10 µm (PM_{10})**	IS: 5182 (Part-23): 2006 Reaffirmed: 2022	µg/m^3	**76.9**	5.0 - 1200	For 24 hour =100
2	**Particulate matters size less than 2.5 µm ($PM_{2.5}$)**	IS: 5182 (Part-24): 2019	µg/m^3	**48.83**	2.0 - 500	For 24 hour =60
3	**Sulphur Dioxide (SO_2)**	IS: 5182 (Part-2): 2001 Reaffirmed: 2022	µg/m^3	**13.56**	5.0 - 1050	For 24 hour =80
4	**Oxides of Nitrogen (NO_X)**	IS: 5182 (Part-6): 2006 Reaffirmed: 2022	µg/m^3	**19.69**	6.0 - 750	For 24 hour =80

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Environmental And Technical Research Centre ★ CHECKED

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/43

TEST REPORT
STACK EMISSION MONITORING AND ANALYSIS REPORT

Test Report Ref No.: ETRC/1503/12412/2024		**Date of Report:** 15.03.2024
Name /Address/Type of Industry		**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**
Monitored by		**ETRC, Lucknow**
Sr. No.	**GENERAL INFORMATION**	**DETAILS**
1.(a)	Date of monitoring	07.03.2024
(b)	Stack material	MS
(c)	Height of stack from ground level	42.0 mts
(d)	Source to which stack attached	Boiler
(e)	No of boiler attached with capacity	01 No. (18.0 TPH)
(f)	Type and quantity of fuel used	Biomass
(g)	Details of APCS installed	ESP
2.	**PARAMETERS**	**VALUES**
(a)	Ambient temperature (°C)	32.0
(b)	Stack gas temperature (°C)	135.0
(c)	Stack gas velocity (m/sec)	11.82
(d)	Flow rate (LPM)	17
(e)	Sampling time (minutes)	63
(f)	Volume of air sampled (liters)	1071

TEST RESULT

Sr. No.	Parameter	Unit	Protocol	Result	Range of Testing/ Limit of Detection	Standard (as per CPCB)
1	**Particulate Matter**	mg/Nm^3	IS: 11255 (Part-1): 1985 Reaffirmed: 2019	**44.52**	2.0 - 1000	150

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre ★ CHECKED

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/44

TEST REPORT

AMBIENT NOISE MONITORING AND ANALYSIS REPORT

Test Report Ref No.: ETRC/1503/12413/2024	**Date of Report:** 15.03.2024
Name /Address/Type of Industry	**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**
Monitored by	**ETRC, Lucknow**

Sr. No.	GENERAL INFORMATION	DETAILS
(a)	Date of monitoring	08/03/2024 (06:00 AM) to 09/03/2024 (06:00 AM)
(b)	Sample Description	Ambient Noise
(c)	Sampling Location	Near Project Premises
(d)	Environmental Condition	Normal
(e)	Monitoring Protocol	IS: 9989: 1981, Reaffirmed: 2020

TEST RESULT

Ambient Noise Level				
Sr. No.	**Parameter**	**Unit**	**Results Day Time (06:00 AM - 10:00 PM)**	**Results Night Time (10:00 PM - 06:00 AM)**
1	**Equivalent sound level**	**dB(A)**	61.85	50.20

Noise Standards as per CPCB Schedule rule 3(1) and 4(1)			
Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre ★ CHECKED

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

ETRC/PM09/TEST-REP/FT/45

TEST REPORT
WATER & WASTE WATER ANALYSIS

Test Report Ref No.: ETRC/1503/12414/2024	**Date of Report:** 15.03.2024
Name /Address/Type of Industry	**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**

SAMPLE DETAILS

1	Water/ Waste Water	Ground Water	5	Packing Condition	Sealed
2	Sample Description	**Borewell**	6	Sample Collected By	ETRC
3	Sample received date	09.03.2024	7	Analysis Start Date	09.03.2024
4	Sample Quantity	5.0 liters	8	Analysis End Date	14.03.2024

TEST RESULT

Sr. No	Test Parameter	Unit	Protocol/Test Method	Result	Range of testing /limit of detection	Indian Standard 10500: 2012	
						Desirable	Permissible
	Physico-chemical Parameters						
1	**Colour**	Hazen	IS: 3025 (Part-04): 2021	**<5.0**	5 - 30	5	15
2	**Odour**	-	IS: 3025 (Part-05): 2018	**Agreeable**	Qualitative	Agreeable	Agreeable
3	**pH**	-	APHA 24th Ed. 2023 - 4500 H^+	**7.5**	1 - 14	6.5-8.5	No Relaxation
4	**Turbidity**	NTU	APHA 24th Ed. 2023 - 2130 B	**BDL**	2 - 40	1	5
5	**Total Dissolved Solids (TDS)**	mg/l	IS: 3025 (Part-16): 2023	**384.4**	10 - 5000	500	2000
6	**Ammonia (as total ammonia-N)**	mg/l	APHA 24th Ed. 2023 - 4500-NH_3 F	**BDL**	0.5 - 2.0	0.5	No Relaxation
7	**Anionic Detergents (as MBAS)**	mg/l	APHA 24th Ed. 2023 - 5540 C	**BDL**	0.05 - 0.5	0.2	1.0
8	**Calcium as Ca**	mg/l	IS: 3025 (Part-40): 1991 Reaffirmed: 2019	**51.2**	2.0 - 600	75	200
9	**Magnesium as Mg**	mg/l	APHA 24th Ed. 2023 - 3500 Mg, B	**25.27**	0.1 - 200	30	100
10	**Chloride as Cl**	mg/l	APHA 24th Ed. 2023 - 4500-Cl^- B	**24.0**	2.0 - 2000	250	1000
11	**Fluoride as F**	mg/l	APHA 24th Ed. 2023 - 4500 F^- C	**0.36**	0.02 - 5.0	1.0	1.5
12	**Free Residual Chlorine**	mg/l	IS: 3025 (Part-26): 1986 Reaffirmed: 2019	**BDL**	0.1 - 5.0	0.2	1.0
13	**Nitrate as NO_3**	mg/l	IS: 3025 (Part-34): 1986 Reaffirmed: 2019	**BDL**	1.0 - 70	45	No Relaxation
14	**Phenolic Compound (as C_6H_5OH)**	mg/l	APHA 24th Ed. 2023 - 5530 C	**BDL**	0.001 - 0.005	0.001	0.002
15	**Sulphate as SO_4**	mg/l	APHA 24th Ed. 2023 - 4500- SO_4^{2-}	**28.0**	1.0 - 500	200	400
16	**Alkalinity as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2320 B	**260.0**	2.0 - 1000	200	600
17	**Total Hardness as $CaCO_3$**	mg/l	APHA 24th Ed. 2023 - 2340 C	**232.0**	5.0 - 800	200	600
18	**Aluminium as Al**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.015 - 5.0	0.03	0.2
19	**Boron as B**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.05 - 2.0	0.5	1.0
20	**Copper as Cu**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 10	0.05	1.5
21	**Iron as Fe**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.12**	0.05 - 20	0.3	No Relaxation
22	**Manganese as Mn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.06**	0.02 - 5.0	0.1	0.3

Mobile : +91 9897674227, 9936669576 | PAN No.: AHWPG8397H | GSTIN No.: 09AHWPG8397H1ZD

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

Test Report Ref No.: ETRC/1503/12414/2024

23	**Zinc as Zn**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**0.42**	0.05 - 15	5	15
24	**Cadmium as Cd**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.003 - 2.0	0.003	No Relaxation
25	**Lead as Pb**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.01 - 10	0.01	No Relaxation
26	**Mercury as Hg**	µg/l	APHA 24th Ed. 2023 - 3112 B	**BDL**	0.5 - 1000	1.0	No Relaxation
27	**Nickel as Ni**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 5.0	0.02	No Relaxation
28	**Arsenic as As**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.02 - 2.0	0.01	0.05
29	**Total Chromium**	mg/l	APHA 24th Ed. 2023 - 3120 B (ICP-OES)	**BDL**	0.03 - 5.0	0.05	No Relaxation
Microbiological Parameters							
30	**E. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	
31	**T. coli**	MPN/ 100 ml	IS: 1622 - 1981 Reaffirmed: 2019	**Absent**	1.8 - 1600	Shall not be detected in any 100 ml sample	

BDL=Below Detection Limit

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Verma

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre
CHECKED

Ritu garg

Authorized Signatory
(Ritu Garg)
QM

ENVIRONMENTAL AND TECHNICAL RESEARCH CENTRE

Office & Laboratory : 2/261, Vishwas Khand, Gomti Nagar, Lucknow - 226 010 (U.P.)
Email : ETRCLTH@YAHOO.IN, Web.: www.etrcindia.com
(ISO 9001:2015, ISO 45001:2018 (OH&S) ISO 14001:2015)
An approved laboratory from Ministry of Environment, Forest and Climate change, Govt. of India under EPA 1986

TEST REPORT
SOIL ANALYSIS

Test Report Ref No.: ETRC/1503/12415/2024	**Date of Report:** 15.03.2024
Name /Address/Type of Industry	**M/s Shri Gang Industries and Allied Products Ltd. Plot No.: B-2/6 & B-2/7 UPSIDC Industries Area Sandila Phase IV, Lucknow Hardoi Road, Sandila District: Hardoi (U.P.) - 241204**

SAMPLE DETAILS

1	Sampling Location	Near Plant Area	5	Packing Condition	Sealed
2	Sample Description	**Soil Sample**	6	Sample Collected By	ETRC,
3	Sample received date	09.03.2024	7	Analysis Start Date	09.03.2024
4	Sample Quantity	500 g	8	Analysis End Date	14.03.2024

TEST REPORT

Sr. No.	Test Parameter	Unit	Protocol/ Test Method	Result	Range of testing /limit of detection
1	pH	-	IS: 2720 (Part-26): 1987 Reaffirmed: 2021	**7.4**	1 - 14
2	Electrical Conductivity	µmhos/cm	IS: 14767:2000 Reaffirmed: 2021	**302.0**	1.0 - 40000
3	Moisture content	%	IS :2720 (Part -2): 1973 Reaffirmed:2020	**3.10**	1.0 - 50
4	Sulphur	Kh/Hec	IS: 14685: 1999 Reaffirmed: 2019	**14.23**	5.0 - 100
5	Boron	mg/kg	Method Manual of Soil Testing in India	**1.56**	1.0 - 100
6	Copper	mg/kg	Method Manual of Soil Testing in India	**0.42**	0.3 - 500
7	Zinc	mg/kg	Method Manual of Soil Testing in India	**10.69**	1.0 - 500
8	Iron	mg/kg	Method Manual of Soil Testing in India	**98.74**	5.0 - 500
9	Manganese	mg/kg	Method Manual of Soil Testing in India	**8.52**	5.0 - 500

Method Manual of Soil Testing in India (Department of Agriculture and Corporation Ministry of Agriculture, Government of India), 4.6.3 (16b): 2022

..... END OF REPORT.....

- ETRC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices and that this data reflects our best attempt to generate accurate results for the sample, mentioned in the report as above.
- The result relate only to the items tested.
- ETRC does not assume any liability for any claims or damages related to the quality of parameter analyzed in the results and/or the performance of the equipment constituting to the results.
- All disputes subject to Lucknow jurisdiction.
- This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
- Complain register is available in our laboratory.

Verma

Authorized Signatory
(Sandeep Kr Verma)
Lab-Incharge

Environmental And Technical Research Centre
CHECKED

Ritu garg

Authorized Signatory
(Ritu Garg)
QM

Date : 27/03/22

① Dainik Jagaran

Advertisement

This is informed to you are that, **M/s Shri Gang Industries and allied Products Limited,** Plot No. B-2/6 & B-2/7, UPSIDC Industrial Area, Sandila Phase IV, Lucknow Hardoi Road, Sandila, District-Hardoi, Uttar Pradesh, has been granted EC with Ref. no. **554/Parya/SEAC/4450/2018** dated 11 December 2018, by the Ministry of Environment, Forest and Climate Change. Environment clearance has been given to Grain-based distillery of 55 kilo liter per day capacity along with 2.0 MW Co-gen Power. A copy of the environmental clearance issued by the Ministry of Environment, Forest and Climate Change is available on the website of the department http://moef.nic.in (http//environment clearance.noc.in) and with the UP-Pollution Control Board.

M/s Shri Gang Industries and allied Products Limited,
Plot No. B-2/6 & B-2/7, UPSIDC Industrial Area,
Sandila Phase IV, Lucknow Hardoi Road, Sandila,
District-Hardoi, Uttar Pradesh

② Amar Ujala.

सूचना

आप सभी को सूचित किया जाता है कि पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय द्वारा मै. श्री गंग इंडस्ट्रीज एंड अलाइड प्रोडक्टस लिमिटेड, प्लॉट न. बी–2/6 & बी–2/7, यूपीएसआईडीसी इंडस्ट्रियल एरिया, संडीला फेज़ IV, लखनऊ हरदोई रोड, संडीला, जिला – हरदोई, उत्तर प्रदेश को ई. सी.न.– 554/Parya /SEAC/4450/2018 दिनांक 11 दिसम्बर 2018 के द्वारा 55 किलो ली. प्रति दिन क्षमता की ग्रेन आधारित आसवनी इकाई एवं सह ऊर्जा 2.0 मेगावाट को पर्यावरण स्वीकृत प्रदान की गयी है।

पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय द्वारा जारी पर्यावरण स्वीकृत की प्रति विभाग की वेबसाइट http://parivesh.nic.in एवं उ.प्र. प्रदूषण नियंत्रण बोर्ड के पास उपलब्ध है।

मै. श्री गंग इंडस्ट्रीज एंड अलाइड प्रोडक्टस लिमिटेड,
प्लॉट न. बी 2/6 & बी 2/7, यूपीएसआईडीसी इंडस्ट्रियल एरिया,
संडीला फेज़ IV, लखनऊ हरदोई रोड, संडीला, बजला हरदोई, उत्तर प्रदेश

CHAPTER–X

ENVIRONMENTAL MANAGEMENT PLAN

10.1 INTRODUCTION

Environmental Management Plan consists of the set of mitigation, management, monitoring and institutional measures to be taken during implementation and operation of a plant to eliminate adverse environmental impacts or reduce them to acceptable levels. The present environmental management plan addresses the components of environment affected during the different activities forming part of the processes of existing plant.

Based on the evaluation of impacts and baseline conditions, an Environmental Management Plan (EMP) has been delineated to mitigate the adverse impacts on environment of the area due to the proposed project.

The EMP is herein outlined after considering the various Acts, Rules and Regulations / Standards concerned with the environmental management.

Aims of EMP

- Overall conservation of the environment.
- Minimization of waste generation and pollution.
- Judicious use of natural resources and water.
- Safety, welfare and good health of the work force.
- Ensure effective operation of all control measures.
- Vigilance against probable disasters and accidents.
- Monitoring of cumulative and long-time impacts.

10.2 ADMINISTRATIVE MANAGEMENT AND POLICIES

Environmental management plan can be implemented effectively if the company has certain employees dedicated towards environment and certain policies depicting the various goals towards sustainable environment. The EMC role and the policies implemented are given below:

10.2.1 Environmental management cell (EMC)

In order to maintain the environmental quality within the standards, regular monitoring of various environmental components is necessary. M/s. Shri Gang Industries & Allied Products Ltd. will maintain a full-fledged Environment Management Cell (EMC) for environmental monitoring and control. The EMC team will take care of pollution monitoring aspects and implementation of control measures.

A group of qualified and efficient engineers with technicians will be deputed for maintenance, up keeping and monitoring of the pollution control equipments to keep them in working at the best of their efficiencies.

10.2.2 Structure of EMC

Structure of Environment Management Cell at SGIAPL is given in Figure below:-

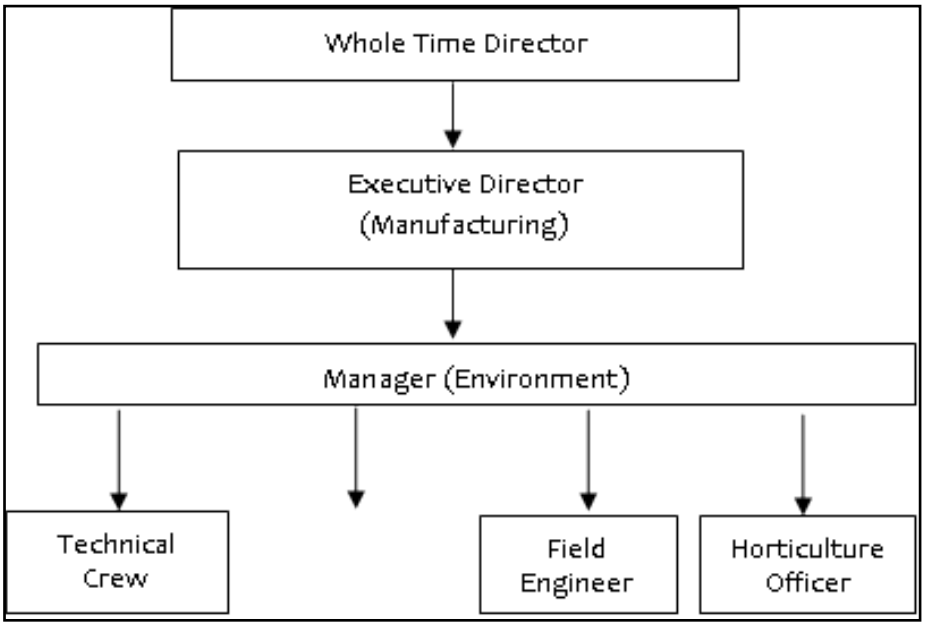

Figure 10.1: Structure of Environmental Management Cell

10.2.3 Responsibilities of EMC

The responsibilities of the EMC include the following:

- Environmental monitoring of the surrounding area.
- Timely Commissioning of pollution control equipment and facilities.
- Specification and regulation of maintenance schedules for pollution control equipment.
- Ensuring that standards are maintained.
- Developing the greenbelt.
- Ensuring optimum water usage.
- Implementation of the Environmental Management Plan.
- Organizing meetings of the Environmental Management Committee and reporting to the management.
- Coordination for all statutory requirements like submission of applications / Reports for obtaining consents, Environmental clearances, authorization etc.

10.2.4 HSE Policy of Shri Gang Industries & Allied Products Ltd.

- Protecting the health and safety of our employees, our contractors, our customers and our neighbours.
- Maintaining the security of our people and assets.
- Protecting the environment.
- Ensure that all activities are conducted in a manner which is consistent with Health, Safety, and Environment Standards.

- Ensure that business activities are conducted to prevent harm to employees, contractors, the public, other stakeholders and the environment.
- Develop, manufacture and market products with full regard for HSE aspects.

10.2.5 Action plan

- Set targets and measure progress to ensure continuous improvement in HSE performance.
- Provide safe and healthy workplaces for all employees and contractors.
- Provide information, instruction and training to enable employees to meet their responsibility to contribute to compliance with the Policy.
- Provide appropriate HSE information for all contractors and others who work for them.
- Protect the environment by preventing or minimizing the environmental impact due to activities and products through appropriate design, manufacturing, distribution and by promoting responsible use and disposal practices.
- Develop products and processes that help preserve resources and the environment.

10.3 ENVIRONMENTAL MANAGEMENT PLAN

A detailed study for the identification & prediction of anticipated environmental impacts of the project was carried out and the outcomes of the study are described in Chapter-IV. The major impacts which require proper administrative management to protect the environment are further considered for formulation of Environmental Management Plan (EMP).

10.3.1 AIR QUALITY MANAGEMENT

The major air pollutants which can be emitted from the proposed plant are the suspended particulate matters from the stack, CO_2 from fermentation process and fugitive emissions due to material handling& transportation.

The monitored ambient air quality as described in chapter III has been found to be very much within the norms established by the regulating agencies. However, to maintain the existing status and minimize the impacts due to the proposed project operations the following steps would be initiated for a better air quality environment.

Process Emissions:

- Boiler will be provided with ESP/ Bag filter to maintain PM emissions below permissible limits (i.e. 50 mg/Nm3).
- Boiler will be equipped with stack of suitable height for discharge of pollutants as per CPCB standards.
- The CO_2 generated during the fermentation process will be collected by CO_2 scrubbers & utilized as an industrial gas.
- The whole process will be carried out in closed condition so as to avoid any chances of VOC emissions.

Utility Emissions:

- All the D.G. sets shall be standby arrangement and will only be used during emergency i.e. power failure.
- Adequate stack height shall be provided to Boiler and D.G. sets.

10.3.1.1 Boiler Ash Handling & Management:

- The boiler ash will be handled & disposed off in such a way that secondary emissions of the ash do not occur due to wind blowing effect.
- The ash from the boiler will be supplied to brick manufacturers & cement plants.
- All the vehicles conveying ash within or outside the plant premises will be covered from all sides to prevent blowing of ash particles due to wind.

10.3.1.2 Action Plan to control fugitive emission

Company will take all measures to effectively control fugitive emissions.

- Grain will be pre-cleaned & stored in silos. Air Aspiration system will be provided.
- The roads within the premises are concreted / paved to avoid vehicular emissions.
- Water Sprinklers will be installed.
- All transportation vehicles will carry a valid PUC (Pollution under Control) Certificate.
- Proper servicing & maintenance of vehicles will be carried out.
- Regular sweeping of all the roads & floors will be done to avoid particulate matter dispersion.
- Use of covered conveyors in all material handling & transfers for grains, fuel (Coal/Rice Husk).
- Covered Trucks will be used for Fly Ash Transport.
- Transfer points will be provided with covered facilities.
- Ambient air quality will be regularly monitored and effective control will be exercised, so as to keep the emissions within the prescribed limits.
- Conveying of fuel and ash will be done with proper hood cover.
- Dust collector will be provided at fly ash loading / unloading point.

10.3.2 Odour Management

Odour Management Plan outlines the methods by which odorous emissions will systematically be assessed, reduced and prevented potentially from the distillery unit.

- Adequate greenbelt all around the periphery of the plant.
- Efficient CO_2 scrubbing to avoid carryover of alcohol vapours & other fumes.
- DWGS dryer will be installed for complete drying of solids.
- Better housekeeping will maintain good hygiene condition by regular steaming of all fermentation equipment.
- Longer storages of any product/by-products will be avoided & use of efficient biocides to control bacterial contamination.

- Regular use of bleaching powder in the drains to avoid generation of putrefying micro-organisms.

10.3.3 NOISE MANAGEMENT

The major source of Noise pollution will be the equipment of distillery plant like compressor, boiler, turbine, ID and FD fan areas. Exposure to high noise level to workers for long duration may lead to certain occupational diseases. To mitigate the high noise level, following measures will be adopted.

- All the equipment will be provided with acoustic enclosures to control the noise level within the prescribed limit.
- Periodical maintenance and lubrication of equipment will be carried out.
- 33 % of the total project area will be developed as greenbelt/ plantation in and around the plant boundary. Greenbelt will help to partially attenuate noise levels in the plant.
- Workers will be provided with personnel protective equipment like earmuffs/ear plugs, to avoid any damage due to noise exposure.
- Time to time oiling and servicing of the machineries will be done.
- Periodic monitoring will be carried out on regular basis.
- Silencers will be installed for the equipment wherever necessary.

10.3.4 WATER MANAGEMENT

- Spent wash: - Spent wash (Slops) generation from distillation, which is a variable, will be about 443 KLD (maximum). Upon separation of suspended solids in decanter centrifuge, part of thin slops will be recycled as process water to distillation & fermentation. DDGS will be sold as Cattle Feed / Poultry Feed / Fish Feed based on its protein content.
- Process Condensate: - Evaporation condensate from MEE will be neutralized and polished in CPU/PCTP and recycled to fermentation and cooling tower makeup.
- Spent lees: - The spent lees from primary distillation column (pre-rectifier) and FOC lees are recycled into liquefaction process and are utilized as dilution water for incoming flour to make slurry. The rectifier column lees (~20%) is of soft water norms in terms of its TDS and can be best utilized as cooling tower make-up water. 80% of rectifier lees will be recycled in extractive distillation column as dilution medium for RS. Hence 100% spent lees will be recycled and utilized in distillation plant & its cooling tower.
- Boiler blow down: - The proposed boiler of 18 TPH is expected to blow down 2%, which shall be cooled, filtered and recycled as cooling tower makeup.
- Cooling Tower blow down: - The cycle of concentration (COC) is maintained in such a way to restrict the TDS of soft water in recirculation below 2100 mg/ltr, which is the prescribed limit of utilization of this water for plant activity. Hence, CT blow down will be utilized internally completely.

- Rainwater would be utilized to recharge the underground resource through scientifically designed rainwater harvesting system.
- The domestic waste water generated from the sanitary blocks will be disposed off via septic tank followed by soak pit.

10.3.4.1 Water Conservation Measures

The following measures will be adopted to minimize use of ground water-

- Maximum recycling and reuse of wastewater after treatment.
- Periodic preventive maintenance of water distribution system.
- Optimum use of process cooling water.
- Training and awareness on water conservation measures.
- Water will be conserved at every stage of process. Condensate water will be re-used & recycled.
- Rain water harvesting structures will be constructed to conserve water & to replenish fresh water resources of the area for long term sustenance of the industry.

10.3.4.2 Action Plan to Control Ground Water Pollution

The proposed Distillery will be based on "Zero Effluent Discharge". The following measures are will be adopted to conserve water-

- Maximum recycling and reuse of wastewater after treatment.
- Impervious lagoon (lined lagoon) as per CPCB guidelines.
- Two piezometers are proposed to be installed near lagoon as well as borewells.
- Spillage of chemicals/oils/alcohol etc. will be avoided as best possible.
- Treatment of secondary streams like spent lees, condensates, blow downs, etc. shall be closed loop & any discharge outside the distillery shall not be done.

10.3.4.3 Rainwater Harvesting

Rainwater harvesting practices through roof-top and surface runoff shall be carried out and the available run-off from the same will be stored and utilized for project activities. The industry has proposed groundwater recharge measures by constructing and rejuvenating one large village pond within the same block.

The detailed rainwater harvesting plan for the project has been enclosed as ***Annexure- 5*** with the EIA/ EMP report.

10.3.5 WASTE MANAGEMENT

The following are the management measures that will be taken up by the Company.

10.3.5.1 Solid Waste Management

Solid waste generated would be wet cake, yeast sludge and ash from the boiler. The following are the management measures that will be taken up by the company:

- Solid waste from the grain based operations generally comprises of fibres and proteins in the form of DDGS, which will be ideally used as cattle feed.
- Ash from the boiler will be supplied to brick manufacturers & cement plant.
- The Yeast sludge will be added to the Wet Cake.

10.3.5.2 Hazardous Waste Management

Used oil & grease generated from plant machinery/Gear boxes as hazardous waste will be sold out to the CPCB authorized recycler.

10.3.6 Action plan for greenbelt development

Greenbelt development will be undertaken in 33% area of total project site. It will commence during construction phase only. Native species will be planted in consultation with horticulturist. The plant periphery will be covered in 5 m width.

10.4 CONCEPT OF WASTE MINIMIZATION, 3R'S (REUSE, RECYCLE& RECOVER TECHNIQUES), ENERGY AND NATURAL RESOURCE CONSERVATION MEASURES

SGIAPL believes in prevention than curing. They believe in concept of conservation & waste minimization.

10.4.1 Waste Minimization – 3R's (Reuse, Recycle & Recovery)

(A) Reuse:

- Ash generated from boiler will be supplied to brick manufacturing & cement manufacturing plants.
- Wet cake / DWGS will be passed through drier for drying into DDGS which will be used as cattle feed as it contains higher protein and fibre content.

(B) Recycle:

- Spent Lees will be recycled to distillation column of distillery.
- Treated water from ETP/ CPU will be re used in plant activities.
- Recycling or usage of recycled water at every stage of the process

(C) Recovery:

- Yeast sludge will be mixed with wet cake.
- Water conservation & recirculation system shall be installed for recovery of coolingwater. The condensate water recovered is mixed with raw water for re-use.

10.4.2 Energy Conservation

The following measures have been adopted for reduction in specific energy consumption:

- Installation of energy efficient lightings. Use of energy saving light fittings.
- Installation of LED/CFL lighting.
- Use of energy efficient electric motors.

- Use of DCS controls
- Use of highly efficient VFD, minimizing idle running of machines.
- Optimizing loads and periodic preventive maintenance & lubrication
- Prevention of leakages of compressed air
- Optimized compressed air pressure.
- Periodic energy audits.
- Training, awareness and motivational programmes.
- Layout is designed for gravitation flow.

10.4.3 Natural Resource Conservation

- Usage of Rice husk as a fuel.
- Use of solar energy will be promoted.
- A portion of treated effluent from ETP will be reused to conserve the fresh water.
- Rainwater harvesting system will be constructed.

10.5 BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)

The budget proposed for the proposed project and that for the environmental protection measures is given as below:

- ✓ Capital cost for the proposed project: 125.32 Crores

Cost for environmental protection measures:

- ✓ Capital cost: Rs. 10.0 Crores
- ✓ Recurring cost: Rs. 1.0 Crore/ annum

EMP Cost Break-up is given in below Table below:

Break - Up of EMP Cost

S. No.	Description	Proposed Capital Cost (Crores)	Recurring Cost / annum (Crores)
1.	Air Pollution control	3.0	0.30
2.	Water Pollution Control (Effluent Treatment System)	4.0	0.40
3.	Solid Waste Management	1.0	0.10
4.	Environment Monitoring & Management	1.5	0.15
5.	Greenbelt development	0.50	0.05
Total		**10 Crores**	**1.0 Crore/ annum**

10.6 CORPORATE ENVIRONMENTAL POLICY

SHRI GANG INDUSTRIES AND ALLIED PRODUCTS LIMITED
Registered Office & Works:- A-26 UPSIDC Industrial Area, Sikandrabad, Bulandshahar, Uttar Pradesh-203205.
CIN: L01112UP1989PLC011004
Email id:- secretarial@shrigangindustries.com **website:-** www.shrigangindustries.com
Contact No.: 05735-222568

CORPORATE ENVIRONMENT POLICY

Shri Gang Industries & Allied Products Limited is committed to environmental leadership in all of its business activities. Shri Gang Industries & Allied Products Limited provides policies to provide a safe, healthy workplace, protecting the environment, conserving energy and natural resources. With these policies in place we believe that Shri Gang Industries & Allied Products Limited shall achieve a safe environment:

- Integrate the consideration of environmental concerns and impacts into all the decision making and activities and its implementation
- Develop and improve operations and technologies to minimize waste, and other pollution to minimize health and safety risks, and dispose of waste safely.
- Establish procedures for periodic review of environmental compliance with all laws and regulations.
- Provide a safe and healthful work environment and to ensure that personnel are trained properly with the appropriate safety and emergency equipment.
- To report all noncompliance issues promptly in accordance with applicable governmental reporting requirements, evaluate causes of noncompliance, and implement corrective actions.
- To immediately correct any practice or condition not in compliance with this policy.
- Conserve natural resources by adopting pollution prevention measures.

Safety, Health & Environment (SHE) policy:

At Shri Gang Industries & Allied Products Limited, the values which assist are:

- To protect and maintain the security of people and assets.
- Protecting the health and safety of the employees, contractors, customers and residents of area.
- Protecting the environment.

SHRI GANG INDUSTRIES AND ALLIED PRODUCTS LTD. SIKANDRABAD

Corporate Office:- F-32/3, Okhla Industrial Area, Phase-II, New Delhi- 110020 | **Contact No.:-** 011-42524454

SHRI GANG INDUSTRIES AND ALLIED PRODUCTS LIMITED
Registered Office & Works:- A-26 UPSIDC Industrial Area, Sikandrabad, Bulandshahar, Uttar Pradesh-203205.
CIN: L01112UP1989PLC011004
Email id:- secretarial@shrigangindustries.com **website:-** www.shrigangindustries.com
Contact No.: 05735-222568

In addition to compliance with laws and regulatory requirements, the Company will pursue the following objectives:

- Provide information, instruction and training to enable employees to meet their responsibility to contribute to compliance with the Policy.
- Provide safe and healthy workplaces for our employees and contracts.
- Ensure that business activities are conducted to prevent harm to employees, contractors, the public, other stakeholders and the environment.
- Set targets and measure progress to ensure continuous improvements in HSE performance.
- Provide appropriate HSE information for all contractors and others who work for us.
- Protect the environment by preventing or minimizing the environmental impact due to our activities and products through appropriate design, manufacturing, distribution and by promoting responsible use and disposal practices.
- Develop products and processes that help preserve resources and the environment.

SHRI GANG INDUSTRIES AND ALLIED PRODUCTS LTD. SIKANDRABAD

Corporate Office:- F-32/3, Okhla Industrial Area, Phase-II, New Delhi- 110020 | **Contact No.:-** 011-42524454

10.7 VEHICULAR POLLUTION CONTROL AND ITS MANAGEMENT

Vehicle emissions are responsible for 70% of the country's air pollution. Various laws in this regard have been laid out by the government. Exhaust from vehicles has increased eight-fold over levels of twenty years ago; industrial pollution has risen four times over the same period.

The company will take care of all the measures to take up the vehicular pollution control in addition to the pollution from the plant processes. All the vehicles will be kept environmentally compliant. The details are as below:

Vehicular pollution control measures:

1. Inspection and maintenance programme for vehicles

The first and most important step towards emission control for the large in-use fleet of vehicles is the formulation of an inspection and maintenance system. It is possible to reduce 30-40% pollution loads generated by vehicles through proper periodical inspections and maintenance of vehicles. It should include testing of various elements of safety, road worthiness and compliance to pollution norms, renewal of permits and registration.

2. Emission norms:

Emission norms for all categories of petrol and diesel vehicles will be followed. Bharat stage emission standards are emission standards instituted by Government of India to regulate the output of air pollutants from internal combustion engine equipments, including motor vehicles. The standards and the timeline for implementation are set by the Central Pollution Control Board under the MoEFCC.

3. Appropriate Fuel

- Diesel with lower sulphur content should be used.
- Pre-mixed fuels (petrol and oil mixture) for use of two stroke vehicles.

4. Periodical Checking of Vehicles

All the vehicles required will be taken as per need and on contract.

5. Management Measures

- Traffic will be minimized inside and outside the premises.
- Adequate inspection and maintenance facilities.
- Older vehicles will be timely replaced.
- Keep a check on adulteration of fuel.
- Proper traffic management system.
- Concretization of roads.
- Development of Greenbelt and plantation around roads and plant periphery as a mitigative measure.
- Awareness programmes in the plant and nearby villages.

10.8 CONCLUSION

As discussed, it is safe to say that the proposed project is not likely to cause any significant impact on the ecology of the area, as adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Greenbelt development around the area would also be taken up as an effective pollution mitigation technique, as well as to control the pollutants released from the plant activities.