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punjab national bank

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KANGRA (HP) - 176001

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DRAFT EIA REPORT

For

Formaldehyde Manufacturing Unit (100 KLD)

Located at

Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra,

Dist. Kangra Himachal Pradesh

By

M/s Feel Organic Products

Project Schedule 5(f): Synthetic Organic Chemicals Industry

Category-'A'

Proposed Quantity: 100 KLD

Submitted by



M/s Eco Paryavaran Laboratories & Consultants Pvt. Ltd.

Eco Bhawan, E-207, 204 & 205, Industrial Area, Phase VIII-B (Sector-74)

Mohali (Punjab) - 160071.

www.ecoparyavaran.org

(QCI NABET Accreditation No. - NABET/EIA/2223/SA 0183 dated 09.01.2023)

(In-house Lab, NABL Accreditation No. - TC-7477 dated 01.06.2021)

UID: EL/2022/09/D02/01

April, 2023

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No.IA-J-11011/97/2023-IA-II(I)
Government of India
Minister of Environment, Forest and Climate Change
Impact Assessment Division

Indira Paryavaran Bhavan,
Vayu Wing, 3rd Floor, Aliganj,
Jor Bagh Road, New Delhi-110003
15 Mar 2023

To,
M/s FEEL ORGANIC PRODUCTS
VPO Sadarpur, Near Medical College, Tehsil Nagrota Bhagwan, District Kangra, Himachal Pradesh - 174021,
Kangra-174021
Himachal Pradesh

Tel.No.-; Email:feelorganicproducts@gmail.com

Sir/Madam,

This has reference to the proposal submitted in the Ministry of Environment, Forest and Climate Change to prescribe the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006. For this purpose, the proponent had submitted online information in the prescribed format (Form-1) along with a Pre-feasibility Report. The details of the proposal are given below:

1. Proposal No.:	IA/HP/IND3/420850/2023
2. Name of the Proposal:	Formaldehyde Manufacturing Unit (100KLD)
3. Category of the Proposal:	Industrial Projects - 3
4. Project/Activity applied for:	5(f) Synthetic organic chemicals industry (dyes & dye intermediates, bulk
5. Date of submission for TOR:	04 Mar 2023

In this regard, under the provisions of the EIA Notification 2006 as amended, the Standard TOR for the purpose of preparing environment impact assessment report and environment management plan for obtaining prior environment clearance is prescribed with public consultation as follows:

ACTIVITY 5(f)- SYNTHETIC ORGANIC CHEMICALS INDUSTRY

STANDARD TERMS OF REFERENCE FOR EIA STUDIES FOR SYNTHETIC ORGANIC CHEMICALS INDUSTRY (DYES & DYE INTERMEDIATES; BULK DRUGS AND INTERMEDIATES EXCLUDING DRUG FORMULATIONS; SYNTHETIC RUBBERS; BASIC ORGANIC CHEMICALS, OTHER SYNTHETIC ORGANIC CHEMICALS AND CHEMICAL INTERMEDIATES)

GENERIC CONDITIONS

- 1) **Executive Summary**
- 2) **Introduction**
 - i. Details of the EIA Consultant including NABET accreditation
 - ii. Information about the project proponent
 - iii. Importance and benefits of the project
- 3) **Project Description**
 - i. Cost of project and time of completion.
 - ii. Products with capacities for the proposed project.
 - iii. If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any.
 - iv. Details of existing products and production, if any, along with present product production details in tabular format, to verify the compliance of the EIA Notifications.
 - v. Details of existing products and production, if any, along with present product production details in tabular format, to verify the compliance of the EIA Notifications.
 - vi. List of raw materials required and their source along with mode of transportation.
 - vii. Other chemicals and materials required with quantities and storage capacities.
 - viii. Details of Emission, effluents, hazardous waste generation and their management.
 - ix. Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract)
 - x. Details of boiler/gensets (including stacks/exhausts) and fuels to be used
 - x. Details of boiler gensets (including stacks/exhausts) and fuels to be used
 - xi. Process description along with major equipment's and machineries, process flow sheet (quantitative) from raw materials to products to be provided
 - xi. Hazard identification and details of proposed safety systems.
 - xii. Expansion/modernization proposals:

- a. Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MOEF/SELAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Integrated Regional Office of the Ministry of Environment, Forest and Climate Change as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, copy of the latest CTO and status of compliance of Consent to Operate for the ongoing existing operation of the project from SPCB shall be attached with the EIA-EMP report.
- b. In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.

4) Site Details

- i. Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the site, whether other sites were considered.
- ii. A topo-sheet of the study area of radius of 10km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places)
- iii. Details w.r.t. option analysis for selection of site
- iv. Co-ordinates (lat-long) of all four corners of the site.
- v. Google map-Earth download of the project site.
- vi. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate.
- vii. Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation greenbelt, in particular.
- viii. Land-use break-up of total land of the project site (identified and acquired), government/private - agricultural, forest, wasteland, water bodies, settlements, etc shall be included. (not required for industrial area)
- ix. A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area
- x. Geological features and Geo-hydrological status of the study area shall be included.
- xi. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood

- Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects)
- xii. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land. Documents related to conversion of land for Industrial purpose.
 - xiii. R&R details in respect of land in line with state Government policy

5. Forest, wildlife and CRZ related issues (if applicable):

- i. Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (if applicable)
- ii. Land-use map based on High resolution satellite imagery of the proposed site delineating the forestland (in case of projects involving forest land more than 40 ha)
- iii. Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.
- iv. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon
- v. Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area
- vi. Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife
- vii. Recommendations and NOC from the concerned State UT Coastal Zone Management Authority on CRZ angle

5) Environmental Status

- i. Determination of atmospheric inversion level at the project site and site-specific micro-meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.
- AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests. Study should indicate minimum, maximum value of different parameters for the period (3 months) collected. Collected data should be supported by the reference data of either CPCB or SPCB. AAQ data & GLC of pollutants from stack emissions should suggest technology measures- Best Practiced Technology (BPT) indicating best achieved results.

- ii. Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQPM Notification of Nov. 2009 along with – min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.
- iii. Surface water quality of nearby River (100m upstream and downstream of discharge point) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.
- iv. Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC, if yes give details.
- v. Ground water monitoring at minimum at 8 locations shall be included.
- vi. Noise levels monitoring at 8 locations within the study area.
- vii. Soil Characteristic as per CPCB guidelines.
- viii. Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.
- ix. Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.
- x. Socio-economic status of the study area.

6) Environment Impact and Environment Management Plan

- i. Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.
- ii. Water Quality Modelling – in case of discharge in water body
- iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor-cum-rail transport shall be examined.
- iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules 1986.
- v. Details of stack emission and action plan for control of emissions to meet standards.
- vi. Measures for fugitive emission control.

- vii. Details of hazardous waste generation and their storage, utilization and management. Copies of MOU regarding utilization of solid and hazardous waste in cement plant shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation, and natural resource conservation.
- viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.
- ix. Action plan for the green belt development plan in 33 % area i.e. land with not less than 2,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.
- x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.
- xi. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.
- xii. Action plan for post-project environmental monitoring shall be submitted.
- xiii. Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.

7) Occupational health

- i. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers
- ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre-placement and periodical examinations give the details of the same. Details regarding last month analyzed data of above mentioned parameters as per age, sex, duration of exposure and department wise.
- iii. Details of existing Occupational & Safety Hazards. What are the exposure levels of hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,
- iv. Annual report of health status of workers with special reference to Occupational Health and Safety.

8) Corporate Environment Policy

- i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
- ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
- iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.
- iv. Does the company have system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report.
- v. Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.

10) Corporate Environmental Responsibility (CER)

- i. Adequate funds, as per the Ministry's OM/Guidelines, shall be earmarked towards the Corporate Environmental Responsibility based on Public Hearing issues/socio-economic issues and item-wise details along with time bound action plan shall be included (CER activities shall be related to environment). Socio-economic development activities need to be elaborated upon. For the projects where public hearing is not conducted, CER plan shall be provided based on socio-economic study of the area.

9) Additional studies/Measures to be considered

- (i). Provide latest and ecofriendly technology for product manufacturing.
- (ii). Emphasize on Green chemistry/Clean Manufacturing.
- (iii). Provide CAS No. of products along with product list.
- (iv). Provide details of amount of carbon sequestered in their unit through greenbelt/other modes, in case of expansion project.
- (v). Life structure and sustainability for carbon and water foot print.
- (vi). Detailed pollution Load estimation.
- (vii). Transportation of Hazardous substance, effluents etc shall be carried out through authorized and GPS enable vehicles Trucks only.
- (viii). Category of Hazardous Wastes shall be mentioned in the EIA/EMP report and in presentation.
- (ix). Details of greenhouse gases and emissions shall be provided.
- (x). Greenbelt shall be developed in the first year of the project and wind breaks shall be erected.
- (xi). Study area map shall be overlapped with all the associated features.

- (xii). Emphasize on green fuels.
- (xiii). The project from NCR shall not use Coal as fuel. Further, PP shall avoid use of Coal in the CPAs and elsewhere also if alternatives are available.
- (xiv). Provide the Cost-Benefit analysis with respect to the environment due to the project.
- (xv). Details of carbon foot prints and carbon sequestration study w.r.t. proposed project needs to spelled out. Proposed mitigation measures also needs to be analyzed and submitted for further appraisal of the EAC

- 11) Any litigation pending against the project and or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance ATR to the notice(s) and present status of the case.
- 12) A tabular chart with index for point wise compliance of above TORs and its details needs to be submitted in the EIA/EMP Report.

SPECIFIC CONDITION

1. Details on solvents to be used, measures for solvent recovery and for emissions control.
2. Details of process emissions from the proposed unit and its arrangement to control.
3. Ambient air quality data should include VOC, other process-specific pollutants* like NH₃*, chlorine*, HCl*, HBr*, H₂S*, HF*, etc., (*-as applicable)
4. Work zone monitoring arrangements for hazardous chemicals.
5. Detailed effluent treatment scheme including segregation of effluent streams for units adopting 'Zero' liquid discharge.
6. Action plan for odour control to be submitted.
7. A copy of the Memorandum of Understanding signed with cement manufacturers indicating clearly that they co-process organic solid/hazardous waste generated.
8. Authorization/Membership for the disposal of liquid effluent in CETP and solid/hazardous waste in TSDF, if any.
9. Action plan for utilization of MEE/dryers salts.
10. Material Safety Data Sheet for all the Chemicals are being used/will be used.
11. Authorization/Membership for the disposal of solid hazardous waste in TSDF.
12. Details of incinerator if to be installed.
13. Risk assessment for storage and handling of hazardous chemicals/solvents. Action plan.

for handling & safety system to be incorporated.

14. Arrangements for ensuring health and safety of workers engaged in handling of toxic materials.
15. Details of carbon foot prints and carbon sequestration study w.r.t. proposed project needs to spelled out. Proposed mitigation measures also needs to be analysed and submitted for further appraisal of the EAC.

COMPLIANCE OF TERMS OF REFERENCE

(Vide Letter No. IA-J-11011/97/2023-IA-II(I) dated 15.03.2023)

Proposed Formaldehyde Manufacturing Unit located at Plot No. 3, Industrial Area Chanour, Phase-II, Teh. Dehra, District Kangra, Himachal Pradesh by M/s Fee Organic Products.

A. STANDARD TERMS OF REFERENCE

S. No.	ToR Compliance
1.	Generic Conditions
1.	Executive Summary
Reply:	Executive summary of the project is enclosed with the draft EIA report. Capital Cost of the Project- Rs 441.25 Lakhs CER/ESC cost- Rs. 4 Lakhs Capital cost: Rs. 69.5 lakhs Recurring cost: Rs. 8.0 lakhs per annum During operational phase: Recurring cost: Rs. 8.0 lakhs per annum
2.	Introduction
(i)	Details of the EIA Consultant including NABET accreditation.
Reply:	EIA Consultant: M/s Eco Paryavaran Laboratories & Consultants Pvt. Ltd. NABET Accreditation: Certificate No. NABET/EIA/2223/SA 0183 dated 17.12.2023. Accreditation certificate from QCI-NABET along and other lab approvals

	certificates are attached along as Annexure 15 .
(ii)	Information about the project proponent.
Reply:	<p>M/s Feel Organic Products is planning to set up a Formaldehyde manufacturing unit with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P).</p> <p>The Partners of the company are as under:</p> <ol style="list-style-type: none">1. Sh. Sandeep Ohri2. Sh. Devinder Kumar Dhur3. Sh. Jatin Kalra4. Sh. Sanjeev Kumar Sharma <p>All the partners are well versed with the process involved & can handle the project efficiently. Copy of partnership deed is enclosed as Annexure 4.</p>
(iii)	Importance and benefits of the project.
Reply:	<p>India being a developing country, formaldehyde manufacturing industry plays very important role in economic development of the country. Formaldehyde (HCHO) is a simple chemical compound produced by the oxidation of methanol. Formaldehyde is being used in the number of industries for various purposes such as manufacturing of building materials – like pressed wood products (mostly as an adhesive resin), fiber board, plywood, etc. Additional uses in household products include additive for permanent –press, an ingredient in glues and as a preservative in medical laboratories – as embalming fluid and as a sterilizer. Formaldehyde is also used by plywood and sun mica laminated sheets manufacturers, who make adhesives like urea formaldehyde and phenol formaldehyde products However, main formaldehyde application (about 70%) is for the production of formaldehyde based resins (i.e. urea formaldehyde, phenol & melamine formaldehyde based resins).</p>

	<p>As per report "Formaldehyde: 2019 World Market Outlook and forecast up to 2028" of Merchant Research & Consulting Ltd., a UK based market research company,</p> <ul style="list-style-type: none">• Asia Pacific region consumes formaldehyde almost as Europe, North America and Latin America do together.• Also, currently Nepal is the biggest importer of Indian Formaldehyde, importing more than half of the total quantity exported from India.• World formaldehyde consumption is expected to grow at nearly 5% in the coming years.• According to a TechSci Research report, "India Formaldehyde Market Study, 2011 – 2025", the market of formaldehyde in India is anticipated to grow at a CAGR of over 4% during 2016-2025.• The Indian formaldehyde is projected to grow at a CAGR of 6% during 2021-2030 on account of growing focus towards roofing mat application and the surging demand for wood based articles in India. <p>Benefits of project are given below:</p> <ul style="list-style-type: none">• To fulfill the demand – supply gap in the domestic market, due to increase in growth of Formaldehyde for meeting the increased demand in the Industries.• Generation of the employment opportunities both for skilled & un-skilled persons.• Improvement of living standard.• The project will be promoted to cater Commercial market, domestic market, Export & Govt. supply <p>Details of the same are given in Section 1.4 in Chapter 1 of the draft EIA report.</p>
3.	Project Description
(i)	Cost of project and time of completion.

Reply:	Estimated Project cost: Rs. 441.25 Lakhs The proposed project will be executed within 24 months after grant of Environment Clearance and other Statuary clearance.		
(ii)	Products with capacities for the proposed project.		
Reply:	The proposed industrial unit will be involved in manufacturing of 100 KLD Formaldehyde.		
(iii)	If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC, if any.		
Reply:	Not applicable. This is not an expansion project.		
(iv)	Details of existing products and production, if any, along with present product/production details in tabular format, to verify the compliance of the EIA Notifications.		
Reply:	Not Applicable. This is a new project and no existing industry or production units is present at site.		
(v)	List of raw materials required and their source along with mode of transportation.		
Reply:	The details of the raw materials along with their mode of transportation are given below:		
	Name of Raw Material	Quantity	Source
	Methanol	46 KLD	Kandla port, Mumbai and Delhi
			Mode of Transportation
			Road transport.
(vi)	Other chemicals and materials required with quantities and storage capacities.		
Reply:	No chemical other than Formaldehyde will be used during the manufacturing process. Only small quantities of lab chemicals are used for in-house laboratory testing. Adequate space has been proposed for raw materials and products storage.		
(vii)	Details of Emission, Effluents, Hazardous Waste generation and their management.		
Reply:	Domestic Effluent: 2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.		

	<p>Industrial Effluent: There is no wastewater generation from the process. 13.7 KL/once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Condensate from evaporator will be reused to meet the cooling water demand.</p> <p>Hazardous Waste: Hazardous waste to be generated will be used oil of 0.1 KL/ annum (Category 5.1) and evaporator sludge of 44 tones/ annum (Category 35.3). It will be stored and disposed off as per Hazardous Waste Management Rules, 2016 and amendments thereof.</p>																														
(viii)	Requirement of water (breakup for induction and rolling mill), power with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract).																														
Reply:	<p>Water Requirement: Total water requirement for the proposed project will be 86 KLD; out of which fresh water requirement will be 82 KLD which will be met through borewell till the development work of water supply scheme for industrial area Chanour is completed. Permission of water supply has been granted from Distt. Industries Centre, Kangra vide letter no. Ind/Kgr/IA/ Chanour-P-3/3607. Copy of same is attached as Annexure-5. The break-up of the same is given below:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Purpose</th> <th>Water Consumption</th> <th>Wastewater Generation</th> </tr> </thead> <tbody> <tr> <td rowspan="3">1.</td> <td>RO Water</td> <td>72.8 KLD</td> <td>20.3 KLD</td> </tr> <tr> <td>• Process</td> <td>65.5 KLD</td> <td>13 KL/once in three months</td> </tr> <tr> <td>• RO reject</td> <td>-</td> <td>7.3 KLD</td> </tr> <tr> <td>2.</td> <td>Boiler Feed</td> <td>1.5 KLD</td> <td>0.3 KL/ once in three months</td> </tr> <tr> <td>3.</td> <td>Cooling Water</td> <td>2.0 KLD</td> <td>0.4 KL/ once in three months</td> </tr> <tr> <td>4.</td> <td>Domestic Water</td> <td>2.7 KLD</td> <td>2 KLD</td> </tr> <tr> <td>5.</td> <td>Green Area</td> <td>7.0 KLD</td> <td>0 KLD</td> </tr> </tbody> </table>	S. No.	Purpose	Water Consumption	Wastewater Generation	1.	RO Water	72.8 KLD	20.3 KLD	• Process	65.5 KLD	13 KL/once in three months	• RO reject	-	7.3 KLD	2.	Boiler Feed	1.5 KLD	0.3 KL/ once in three months	3.	Cooling Water	2.0 KLD	0.4 KL/ once in three months	4.	Domestic Water	2.7 KLD	2 KLD	5.	Green Area	7.0 KLD	0 KLD
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	Total	86 KLD	9.3 KLD and 13.7 KL/ once in three months		
	<p>Power Requirement: Total power requirement will be 250 KW which will be supplied by Himachal Pradesh State Electricity Board Limited (HPSEB) for which permission granted vide letter no. Ind/Kgr/LA/Chanour/P-3/2609 dated 20.01.2023. Copy of approval from HPSEBL is attached as Annexure-6. DG set of capacity 200 kVA each will be provided as power back up.</p> <p>Manpower Requirement: Manpower including both technical & non-technical 37 persons. Residing facility will be provided to workers.</p>				
(ix)	Details of boiler/gensets (including stacks/exhausts) and fuels to be used				
Reply:	Source	Capacity	Fuel Used	Fuel consumption	Remarks
	Boiler	0.8 Ton	LDO/HSD	40 lts/hr	Boiler will be operated for 3-4 hrs once in three months during the restart of plant.
	DG set	200 KVA	HSD	30 lts./day	During power failure only.
(x)	Process description along with major equipments and machineries, process flow sheet (quantitative) from raw material to products to be provided.				
Reply:	Detailed manufacturing process is given in Section 2.9.4 and process flow chart is given in Fig. 2.4 in Chapter 2 of the draft EIA report. List of major equipments and machineries used in the manufacturing process is given in Table 2.6 in Chapter 2 of the draft EIA report.				
(xi)	Hazard identification and details of proposed safety systems.				
Reply:	Risk assessment involved in the boiler are:				

	Risk	Causes
	Thermal	<ul style="list-style-type: none"> • Thermal heat from the process machinery, D.G. sets, boiler and the vehicles in the area.
	Fire/ Chemical Explosions	<ul style="list-style-type: none"> • Presence of chemicals or explosive substances • Fire is mainly caused due to carelessness. • fire can occur due to exposure of chemicals used in the process to electrical spark or vapor from chemical storage tanks
	Fire Breakouts	<ul style="list-style-type: none"> • Sparking in electrical substations or cable networks • Accidental ignition of oil in equipment such as transformers • Infiltration of water, failure of core insulation, or exterior fault currents
	However, detailed Hazard identification is incorporated in Section 7.3.1 in Chapter 7 of the draft EIA report along with the safety measures:	
(xii)	Expansion/ modernization proposals:	
a)	Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Integrated Regional Office of the Ministry of Environment, Forest and Climate Change as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, copy of the latest CTO and status of compliance of Consent to Operate for the ongoing/existing operation of the project from SPCB shall be attached with the EIA-EMP report	
Reply:	Not applicable. As this is the new project.	

b)	In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/ or EIA Notification 2006 shall be provided. Copies of Consent to Establish/ No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of F.Y. 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.
Reply:	Not applicable.
4.	Site Details
(i)	Location of the project site covering Village, Taluka/Tehsil, District and State, Justification for selecting the site, whether other sites were considered.
Reply:	Project site is Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as Annexure-3 . The project location is having good connectivity for transportation of inward and outward materials along with necessary facilities like electricity, cheap labour and banking, etc. In addition to this, manpower is available in local areas in plenty. The project is located at a distance of 1 km from Dadasiba Road which is further connected to National Highway-503 (NH-503) at a distance of 8.30 km from the project site. The industrial area is well connected with link roads to highways and nearby areas. Thus, no alternative site is considered for proposed project.
(ii)	A Topo sheet of the study area of radius of 10 km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet (including all eco-sensitive areas and environmentally sensitive places).
Reply:	Project and its 10 km study area falls under Survey of India, Toposheet No. H43E1 . Toposheet showing the project location is enclosed as Drawing 7 .

(iii)	Details w.r.t option analysis for selection of the site.		
Reply:	No alternate site is considered for the proposed project as the project shall set up on the purchased land. The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde manufacturing unit. Copy of Provisional Allotment letter is attached along as Annexure-1 . Land Documents including Possession letter and Agreement to Lease are enclosed as Annexure 2(b) & 2(c) . The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as Annexure-3 . The industrial area is well connected with link roads to highways and nearby areas. Thus, no alternative site is considered for proposed project.		
(iv)	Co-ordinates (lat-long) of all four corners of the site.		
Reply:	Project boundary coordinates of 4 corners are given below:		
	Corner	Latitudes	Longitudes
	1.	31°54'6.69"N	76° 7'32.68"E
	2.	31°54'4.87"N	76° 7'34.40"E
	3.	31°54'6.07"N	76° 7'36.05"E
	4.	31°54'7.82"N	76° 7'34.18"E
(v)	Google map-Earth downloaded of the project site.		
Reply:	Google Earth Image showing project site & its surroundings within 500 m is enclosed as Drawing 4 .		
(vi)	Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate		
Reply:	Layout plan showing proposed features including location of storage area of raw material, finished products area, greenbelt		

	area with marking of tree, location of evaporator, Septic Tank, HW and Solid waste storage area, Parking space, first aid room, bore well, DG sets & Transformers and any other utilities etc. is enclosed as Drawing 1 . Contour map of industrial area with project location is attached as Drawing 5 .																																								
(vii)	Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular.																																								
Reply:	Photographs of the project site are given in Chapter 2 (Refer Fig. 2.1)																																								
(viii)	Landuse break-up of total land of the project site (identified and acquired), government/private – agricultural, forest, wasteland, water bodies, settlements, etc. shall be included. (Not required for industrial area).																																								
Reply:	The project area break-up is given below:																																								
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(ix)	A list of major industries with name and type within study area (10 km radius) shall be incorporated. Land use																																								

	details of the study area.
Reply:	Land use detail of the project area within 10 km radius along with break-up area is given in Section 3.4.4.1.5 in Chapter 3 of the draft EIA report.
(x)	Geological features and Geo-hydrological status of the study area shall be included.
Reply:	The Geological features and Geo-hydrological status of the study area are incorporated in the EIA report in Chapter 3.
(xi)	Details of Drainage of the project upto 5 km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (Mega green field projects).
Reply:	Drainage map of 10 km buffer is attached along as Drawing 6.
(xii)	Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.
Reply:	Not applicable.
(xiii)	R & R details in respect of land in line with State Government policy.
Reply:	Not applicable.
5.	Forest and wildlife related issues (if applicable)
(i)	Permission and approval for the use of forest land (forestry clearance), if any and recommendations of the State Forest Department (if applicable).
Reply:	As such no forest land is involved in the project.
(ii)	Landuse map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (in

	<i>case of projects involving forest land more than 40 ha).</i>
Reply:	Not applicable.
(iii)	Status of Application submitted for obtaining the stage 1 forestry clearance along with latest status shall be submitted.
Reply:	Not Applicable
(iv)	The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon.
Reply:	The proposed project is located within 10 km. from the boundary of notified Pong Dam Wildlife Sanctuary. The distance from Eco sensitive zone is approx. 1.68km. NOC for establishment of the said unit w.r.t. eco sensitive zone of Pong Dam Wildlife Sanctuary is attached as Annexure 13 .
(v)	Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area.
Reply:	No Schedule I species exist within 10 km study area of the project. Hence, wildlife conservation plan is not required.
(vi)	Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972 to the Standing Committee of the National Board for Wildlife.
Reply:	Not Applicable
(vii)	Recommendations and NOC from the concerned State/UT Coastal Zone Management Authority on CRZ angle
Reply:	Not Applicable

6.	Environmental Status
(i)	Determination of atmospheric inversion level at the project site and site-specific micro-meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.
Reply:	Meteorological data including climate, temperature, rainfall, humidity, cloudiness, and winds data presented in Chapter 4 along with wind rose diagram which is shown in Fig. 4.1 (Chapter 4) of draft EIA Report.
a)	AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the predominant wind direction, population zone and sensitive receptors including reserved forests. Study should indicate minimum, maximum value of different parameters for the period (3 months) collected. Collected data should be supported by the reference data of either CPCB or SPCB. AAQ data & GLC of pollutants from stack emissions should suggest technology/ measures- Best Practiced Technology (BPT) indicating best achieved results.
Reply:	AAQ at 8 locations; 7 outside the project site & 1 location within the project site for PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO and other parameters relevant to the project have been monitored from October, 2022 to December, 2022 and results of the same are compared in Section 3.4 in Chapter 3 of the draft EIA report. Test reports of the same are enclosed as Annexure 9 .
(ii)	Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQPM Notification of Nov., 2009 along with – min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an Annexure to the EIA Report.
Reply:	AAQ data showing min., max., average and 98% values for each of the AAQ parameters are mentioned in Table 3.2 of Chapter 3 of the draft EIA report. Test reports are enclosed as Annexure 9 .
(iii)	Surface water quality of nearby River (60 m upstream and downstream) and other surface drains at eight locations as

	per CPCB/MOEF&CC guidelines.
	Upstream and downstream surface water samples have been drawn from Beas river. Results of the same are mentioned in Table 3.14 in Chapter 3 of the draft EIA report. Test reports are enclosed as Annexure 9 .
(iv)	Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC
Reply:	No polluted river identified by the CPCB/MOEF&CC falls near to the project.
(v)	Ground water monitoring at minimum at 8 locations shall be included.
Reply:	Ground water quality has been analyzed at 8 locations during post-monsoon season i.e. from October, 2022 to December, 2022. Locations along with results of the same are mentioned in Table 3.12 in Chapter 3 of the draft EIA report. Test reports are enclosed as Annexure 9 .
(vi)	Noise levels monitoring at 8 locations within the study area.
Reply:	Noise quality has been analyzed at 8 locations including 5 locations within the project site and three locations within 2 km radius of the project. Locations along with results of the same are mentioned in Table 3.7 in Chapter 3 of the draft EIA report. Test reports are enclosed as Annexure 9 .
(vii)	Soil Characteristic as per CPCB guidelines.
Reply:	Soil quality has been analyzed at 8 locations. Locations along with results of the same are mentioned in Table 3.10 in Chapter 3 of the draft EIA report. Test reports are enclosed as Annexure 9 .
(viii)	Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.
Reply:	Proposed unit is located at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). Traffic survey in project area was conducted to evaluate type and frequency of vehicles for transportation of materials and additional traffic due

	to proposed project (Refer Section 7.5 in Chapter 7).
(ix)	Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished
Reply:	Description of flora and fauna existing in the study area is given in Section 3.4 of Chapter 3. No schedule I species found within the 10 study area of the project.
(x)	Socio-economic status of the study area.
Reply:	Socio-economic status is mentioned in Section 3.4.8 in Chapter 3 of the draft EIA report.
7.	Environment Impact Assessment & Environment Management Plan
(i)	Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modeling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be well assessed. Details of the model used and the input data used for modeling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.
Reply:	Air modeling has been mentioned in Section 4.3.L3 in Chapter 4 of the draft EIA report.
(ii)	Water Quality modeling- in case of discharge in water body
Reply:	Not applicable. As no liquid effluent shall be discharged.
(iii)	Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities)

	by rail or rail-cum road transport or conveyor-cum-rail transport shall be examined.
Reply:	Approx. 6 no. of trucks per day will be used to carry raw materials and product from the proposed industrial unit. Since, the existing road is sufficient to cater to this meager increase in transportation; therefore, there will be less impact.
(iv)	A note on treatment, recycling and reuse of wastewater from different plant operations, extent for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules.
Reply:	There is no wastewater generation from the process. 13.7 KL once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Condensate from evaporator will be reused to meet the cooling water demand. 2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand. Details of Treatment unit are mentioned in Section 2.9 in Chapter 2 of the draft EIA report including the characteristics of untreated and treated domestic effluent.
(v)	Details of stack emission and action plan for control of emissions to meet standards.
Reply:	<ul style="list-style-type: none">The emissions will be generated from operation of D.G set and boiler. These gases will then discharge into atmosphere through stack of adequate height for proper dispersion into the atmosphere. The D.G set will be operated only in case of emergency power requirement and used as standby power source. As the Light diesel oil (LDO)/ High Speed Diesel (HSD) will be used in Boiler and HSD for D.G. set, the flue gas emission will be within prescribed standards.Preventive measures shall be employed to minimize the dust to be generated during construction and operation of project.

Air Pollution details

Source	Capacity	Chimney Height	APCD	Fuel Used	Fuel consumption
Boiler	0.8 Ton	9 m	Not Required	LDO/HSD	40 lts/hr
DG set	200 KVA	3 m	Not Required	HSD	30 lts./day

General Mitigation Measures:

- Haulage roads will be sprinkled with water at regular intervals for which water tankers with sprinkler arrangement will be deployed.
- Trucks carrying raw materials will be having valid PUC Certificate.
- Green belt and greenery development will be done around storage yards, around plants, and around the periphery of the industry.
- Face masks will be provided for the people working at dust generating locations.
- All internal roads in the premise will be kept paved.
- Speed limit of 10 km/hr. will be enforced for vehicles in the plant premises to prevent road dust emission.
- Regular sweeping of roads will be practiced with regular sprinkling with treated water to minimize dust emissions.

(vi) Measures for fugitive emission control.

- Reply:**
- Fugitive emissions are expected from raw material storage and from process.
 - Stack of height 16 m is provided with the reactor room to remove the internal air (for ventilation). Regular water sprinkling will be practiced.
 - All internal roads in the premise will be kept paved and regular sweeping of roads in premises with regular sprinkling of

	<p>treated water to minimize dust emissions.</p> <ul style="list-style-type: none"> Speed limit of 10 km/hr. will be enforced for vehicles in the plant premises to prevent road dust emission. 												
(vii)	<p>Details of hazardous waste generation and their storage, utilization and disposal. Copies of MOU regarding utilization of solid and hazardous waste shall also be included. EMP shall include the concept of waste minimization, recycle/ reuse/ recover techniques, Energy conservation and natural resource conservation.</p>												
Reply:	<p>The plant will generate following Hazardous waste as given below. The Hazardous waste will be collected, stored and disposed as per Hazardous Waste Management Rules, 2016 and amendments thereof.</p> <p style="text-align: center;"><u>Hazardous Waste Generation</u></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Name of Waste</th> <th>Category</th> <th>Quantity</th> <th>Mode of Disposal</th> </tr> </thead> <tbody> <tr> <td>Used Oil</td> <td>5.1</td> <td>0.1 KL/ annum</td> <td>To authorized recycler</td> </tr> <tr> <td>Evaporator Sludge</td> <td>35.3</td> <td>44 Tonnes/ annum</td> <td>To TSDF</td> </tr> </tbody> </table>	Name of Waste	Category	Quantity	Mode of Disposal	Used Oil	5.1	0.1 KL/ annum	To authorized recycler	Evaporator Sludge	35.3	44 Tonnes/ annum	To TSDF
Name of Waste	Category	Quantity	Mode of Disposal										
Used Oil	5.1	0.1 KL/ annum	To authorized recycler										
Evaporator Sludge	35.3	44 Tonnes/ annum	To TSDF										
(viii)	<p>Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.</p>												
Reply:	<p>There will be utilization of fly ash during construction of the proposed project.</p>												
(ix)	<p>Action plan for the green belt development plan in 33% area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.</p>												
Reply:	<p>Green belt has been kept to maximum possible extent within the project. 33.25% of plot area i.e. 1334.18 sq.m. has been reserved for green area within the industry.</p>												
(x)	<p>Action plan for rainwater harvesting measures at alternatives sites shall be submitted to harvest rainwater from the</p>												

	roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.
Reply:	No internal rain water recharging pits have been proposed within the project. However, provision of rain water recharging will be done in school/Government buildings located in the nearby areas in the same assessment unit. Detailed rain water recharging proposal will be incorporated in the final EIA report.
(xi)	Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.
Reply:	During construction phase: <ul style="list-style-type: none">• Capital cost: Rs. 69.5 lakhs• Recurring cost: Rs. 8 lakhs per annum During operational phase: <ul style="list-style-type: none">• Recurring cost: Rs. 8.0 lakhs per annum Detailed break-up of EMP is given in Table 10.1 and Table 10.2 in Chapter 10 of the draft EIA report.
(xii)	Action plan for post-project environmental monitoring shall be submitted.
Reply:	The action plan for post – project environmental monitoring has been given in Chapter 6 of the draft EIA report.
(xiii)	Onsite and Offsite Disaster (Natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.
Reply:	Disaster Management Plan (Onsite & Offsite) and Emergency Preparedness & Response Plan is prepared and given in Section 7.3 of Chapter 7 of the draft EIA Report.
S.	Occupational Health
(i)	Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers

<p>Reply:</p>	<ul style="list-style-type: none"> • All the workers will be covered under ESI. • Personal Protection Equipment (PPE) shall be provided to workers such as Earplugs, Gloves, Eye Goggles and Helmets & Gum Boots etc. in higher noisy areas to meet OSHA standard limits of 90dB(A) for eight hours in work zone areas. • Acoustics will be provided in rooms where noise creating machines work. • All moving & protruding parts of machinery shall be guarded, so that worker does not come in contact with them. • Proper lighting will be provided in the work place. Glares will be avoided. • Exhaust fans & canopy hoods will be provided in the areas where dust & other gases are expected from the operations. • First aid kit will be kept at prominent place to be used in emergent cases. <p>All firefighting equipment will be frequently checked to see their effectiveness.</p>
<p>(ii)</p>	<p>Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre- placement and periodical examinations give the details of the same. Details regarding last month analyzed data of abovementioned parameters as per age, sex, duration of exposure and department wise.</p>
<p>Reply:</p>	<p>Routine health check-up of workers will be done. Eye examination and Audiometry of truck drivers and crane operators will be done every year. Medical records of all the employees will be maintained.</p> <p>Frequency of Periodical Examination:</p> <ul style="list-style-type: none"> • For employees <30 years, once in five years • Between 31-40 years, once in four years • Between 41-50 years, once in two years • Above > 50 years once a year

(iii)	Details of existing Occupational & Safety Hazards. What are the exposure levels of hazards and whether they are within permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved
Reply:	The medical records of all the employees will be maintained.
(iv)	Annual report of health status of workers with special reference to Occupational Health and Safety.
Reply:	1 lakh will be allocated per year to ensure health & safety of all contract and casual workers.
9.	Corporate Environment Policy
(i)	Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
Reply:	Environmental Policy of the company will be formulated and details of the same will be incorporated in the EIA report.
(ii)	Does the Environment Policy prescribe for standard operating process/ procedures to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/ conditions? If so, it may be detailed in the EIA.
Reply:	Environmental Policy of the company will be formulated and details of the same will be incorporated in the EIA report. Further, Environment Management Cell will be constituted and responsible for all the environmental related issues.
(iii)	What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.
Reply:	Environment Management Cell will be constituted and responsible for all the environmental related issues. Detail of the EMC is given in EIA report.
(iv)	Does the company have system of reporting of non-compliances/ violations of environmental norms to the Board of

	Directors of the Company and/ or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report.
Reply:	Yes. The same will be followed.
(v)	Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.
Reply:	The labour engage in the construction will be provided with the basic infrastructure facilities such as sanitation, clean drinking water etc. Further, during operational phase, casual workers including truck drivers etc. will be allowed to access the existing facilities such as sanitation, clean drinking water etc.
10.	Corporate Environmental Responsibility (CER)
(i)	Adequate funds, as per the Ministry's OM/Guidelines, shall be earmarked towards the Corporate Environmental Responsibility based on Public Hearing issues/socio-economic issues and item-wise details along with time bound action plan shall be included (CER activities shall be related to environment). Socio-economic development activities need to be elaborated upon. For the projects where public hearing is not conducted, CER plan shall be provided based on socio-economic study of the area.
Reply:	M/s Feel Organic Products will be responsible for implementation of the CER activities. The total estimated cost of the project is Rs. 441.25 Lakhs. Thus, Rs. 4 lakhs @ of 1% of total project cost are reserved towards CER and details are given Table 8.1 of Chapter 8 of EIA report.
11.	Additional studies/ Measures to be considered
(i)	Provide latest and ecofriendly technology for product manufacturing
Reply:	Latest ecofriendly technology available will be adopted for manufacturing.

(ii)	Emphasize on Green chemistry/Clean Manufacturing												
Reply:	Agreed, clean and green manufacturing techniques will be adopted.												
(iii)	Provide CAS No. of products along with product list												
Reply:	The CAS No. of formaldehyde is 50-00-0.												
(iv)	Provide details of amount of carbon sequestered in their unit through greenbelt/other modes, in case of expansion project												
Reply:	Not applicable, as this is proposed industrial unit.												
(v)	Life structure and sustainability for carbon and water foot print.												
Reply:	Agreed.												
(vi)	Detailed pollution Load estimation.												
Reply:	Detail of pollution load estimated and suggested mitigation measures are given in Chapter-2.												
(vii)	Transportation of Hazardous substance, effluents etc. shall be carried out through authorized and GPS enable vehicles/Trucks only.												
Reply:	The plant will generate following Hazardous waste as given below in Table. The Hazardous waste will be collected, stored and disposed as per Hazardous Waste Management Rules, 2016 and amendments thereof.												
<u>Hazardous Waste Generation</u>													
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Name of Waste</th> <th>Category</th> <th>Quantity</th> <th>Mode of Disposal</th> </tr> </thead> <tbody> <tr> <td>Used Oil</td> <td>5.1</td> <td>0.1 KL/annum</td> <td>To authorized recycler</td> </tr> <tr> <td>ETP Sludge</td> <td>35.3</td> <td>0.5 kg/day</td> <td>To TSDF</td> </tr> </tbody> </table>		Name of Waste	Category	Quantity	Mode of Disposal	Used Oil	5.1	0.1 KL/annum	To authorized recycler	ETP Sludge	35.3	0.5 kg/day	To TSDF
Name of Waste	Category	Quantity	Mode of Disposal										
Used Oil	5.1	0.1 KL/annum	To authorized recycler										
ETP Sludge	35.3	0.5 kg/day	To TSDF										
(viii)	Category of Hazardous Wastes shall be mentioned in the EIA/EMP report and in presentation.												

Reply:	Agreed.
(ix)	Details of greenhouse gases and emissions shall be provided.
Reply:	The emissions will be generated from operation of D.G set and boiler. These gases will then discharge into atmosphere through stack of adequate height for proper dispersion into the atmosphere. D.G set will be operated only in case of emergency power requirement and used as standby power source. As the Light diesel oil (LDO) High Speed Diesel (HSD) will be used in Boiler and HSD for D.G. set, the flue gas emission will be within prescribed standards.
(x)	Greenbelt shall be developed in the first year of the project and wind breaks shall be erected
Reply:	Adequate green belt will be developed in the first year of project after and the grant of EC and other Statutory compliances.
(xi)	Study area map shall be overlapped with all the associated features
Reply:	Environment sensitivity map of 10 km buffer showing nearby features is attached as Drawing-2 .
(xii)	Emphasize on green fuels
Reply:	Light diesel oil (LDO) High Speed Diesel (HSD) will be used in Boiler and HSD for D.G. set.
(xiii)	The project from NCR shall not use Coal as fuel. Further, PP shall avoid use of Coal in the CPAs and elsewhere also if alternatives are available.
Reply:	Not Applicable
(xiv)	Provide the Cost-Benefit analysis with respect to the environment due to the project.
Reply:	Cost benefit analysis will be done and incorporated in the chapter during the Final EIA.
(xv)	Details of carbon foot prints and carbon sequestration study w.r.t. proposed project needs to spelled out. Proposed mitigation measures also needs to be analyzed and submitted for further appraisal of the EAC
Reply:	Details of carbon foot prints and carbon sequestration study w.r.t. proposed project needs will be included in final EIA.

12.	Any litigation pending against the project and/or any direction/ order passed by any Court of Law against the project. If so, details thereof shall also be included. Has the unit received any notice under the Section-5 of Environment (Protection) Act, 1986 or relevant sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice (s) and present status of the case.
Reply:	There is no litigation pending against the project. Undertaking regarding the same is enclosed as Annexure 14 .
13.	A tabular chart with index for point wise compliance of above TORs.
Reply:	Agreed.

B. SPECIFIC TERMS OF REFERENCE FOR EIA STUDIES FOR 5(f) CATEGORY SYNTHETIC ORGANIC CHEMICALS INDUSTRY

S. No.	ToR Compliance
1.	Details on solvents to be used, measures for solvent recovery and for emissions control.
Reply:	No solvent will be used as Formaldehyde is the oxidation/dehydrogenation product of methanol with oxygen in the presence of silver catalyst.
2.	Details of process emissions from the proposed unit and its arrangement to control.
Reply:	VOC's are expected from process emissions. Stack of 16 m height will be provided along with reactor room. Work zone monitoring will be done regularly.
3.	Ambient air quality data should include VOC, their process-specific pollutants* like NH₃* chlorine*, HCl*, HBr*, H₂S*, HF*, etc., (*-as applicable)
Reply:	Ambient air quality data include the VOC and other process-specific pollutants* like NH ₃ . The result are incorporated in the EIA and Air result are attached as Annexure 10 .
4.	Work zone monitoring arrangements for hazardous chemicals.
Reply:	Work place monitoring will be done regularly quarterly. Hazardous chemicals will be collected, stored and disposed as per Hazardous Waste Management Rules, 2016 and amendments thereof.
5.	Detailed effluent treatment scheme including segregation of effluent streams for units adopting 'Zero' liquid discharge
Reply:	Detailed effluent treatment scheme adopting zero liquid discharge is given in Chapter 2 at Section 2.9 .
6.	Action plan for odour control to be submitted.

Reply:	No odour will be generated from proposed manufacturing plant. However, green belt will be maintained to control the odour problem, if any. About 33.35% of the total area has been proposed to cover under the green area.
7.	A copy of the Memorandum of Understanding signed with cement manufacturers indicating clearly that they co-process organic solid/hazardous waste generated.
Reply:	Not Applicable
8.	Authorization/Membership for the disposal of liquid effluent in CETP and solid/hazardous waste in TSDF, if any
Reply:	Liquid waste generated will be treated in evaporator of capacity 10 KLD and the all the treated effluent will reused in the unit itself. Zero Liquid discharge will be practiced. All the solid/Hazardous waste will be collected, stored and disposed as per Hazardous Waste Management Rules, 2016 and amendments thereof. M/s Feel Organic Products will dispose the Hazardous waste to the TSDF or vendors authorized by SPCB.
9.	Action plan for utilization of MEE/dryers salts.
Reply:	Salt obtained from Evaporator will be disposed to TSDF.
10.	Material Safety Data Sheet for all the Chemicals are being used/will be used.
Reply:	Material Safety Data Sheet will be used for all the chemicals.
11.	Authorization/Membership for the disposal of solid/hazardous waste in TSDF
Reply:	M/s Feel Organic Products will dispose the Hazardous waste to the TSDF or vendors authorized by SPCB.
12.	Details of incinerator if to be installed
Reply:	No incinerator will be installed.
13.	Risk assessment for storage and handling of hazardous chemicals/solvents. Action plan for handling & safety system to be incorporated

Reply:	Risk assessment for storage and handling of hazardous chemicals/solvents is covered in Chapter 7 of draft EIA report.
14.	Arrangements for ensuring health and safety of workers engaged in handling of toxic materials.
Reply:	Arrangements for ensuring health and safety of workers engaged in handling of toxic materials is covered in Chapter 7 of draft EIA report.
15.	Details of carbon foot prints and carbon sequestration study w.r.t. proposed project needs to spelled out. Proposed mitigation measures also needs to be analysed and submitted for further appraisal of the EAC.
Reply:	Details of carbon foot prints and carbon sequestration study w.r.t. proposed project needs will be included in final EIA.

CHAPTER 1.0 INTRODUCTION

1.1 INTRODUCTION

M/s Feel Organic Products is planning to set up a Formaldehyde manufacturing unit with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (HP). The total plot area of the proposed unit is 4000 sq. m (4,783.96 sq. yards or 0.98 acres). The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde manufacturing unit. Copy of Provisional Allotment letter is attached along as **Annexure-1**. Land Documents including Possession letter and Agreement to Lease are enclosed as **Annexure 2(b) & 2(c)**. The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as **Annexure-3**.

As per the EIA Notification of Ministry of Environment, Forest & Climate Change (MoEF&CC) dated 14th September, 2006 and amendments thereof, the proposed project falls under Category- 'A', Schedule 5(f) Synthetic Organic Chemicals Industry, as the project is located within 10 km. from the boundary of notified Pong Dam Wildlife Sanctuary. Thus, the application for Environmental Clearance is being submitted to EAC, MoEF&CC.

The application for issue of Terms of Reference (TOR's) was submitted online on 4th March, 2023 to EAC, MoEF&CC. Auto ToR were issued by MoEF&CC vide File No. IA -J-11011/97/2023-IA -II(I) dated 15th March, 2023. Copy of the same is enclosed with the EIA report. The draft EIA report is being prepared incorporating the TOR.

1.2 PURPOSE OF THE REPORT

In pursuance of Government of India Notification under Environmental (Protection) Act, 1986, any new project necessitates statutory prior Environmental Clearance in accordance with the objectives of National Environmental policy as approved by the Union Cabinet on 18th May, 2006 and MoEF&CC EIA Notification dated 14.09.06 & its amendments by preparing Environmental

Impact Assessment (EIA) report. In view of the above, EIA report has been prepared taking into consideration the requirement and guidelines of statutory bodies and also client's requirement.

The objective of EIA study report is to take stock of the prevailing quality of environment, to assess the impacts of industrial activity on environment and to plan appropriate environmental control measures to minimize adverse impacts and to maximize beneficial impacts of project. The following major objectives have been considered:

- Assess the existing status of environment
- Additional impacts if any, due to the proposed manufacturing unit
- Suggest additional pollution control and ameliorative measures to minimize/reduce the impacts
- Prepare an action plan for implementation of suggested ameliorative measures
- Suggest a monitoring programme to assess efficacy of the various adopted environmental control measures
- Assess financial considerations for suggesting environmental control plans
- Clearances from statutory authorities.

1.3 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

1.3.1 NATURE OF PROJECT

The project i.e. manufacturing unit of formaldehyde intends to serve as a key industrial infrastructure in the region by producing 100 KLD of formaldehyde which can be further used in various other purposes such as plywood and sunmica laminated sheets manufacturers, who make adhesives like Urea Formaldehyde, Phenol Formaldehyde, Melamine Formaldehyde. It will be benefited by industries of various sizes and capacities, with key focus on MSME Industries, across sectors including car manufacture, explosives, plastic, resins, chemicals and other artificial materials. It is also used in sanitary products like paper towels, napkins and tissues.

Formaldehyde is a building block in the synthesis of many other compounds of specialized and industrial significance. It exhibits most of the chemical properties of other aldehydes but is more reactive.

1.3.2 SIZE OF THE PROJECT

M/s Feel Organic Products is planning to set up a Formaldehyde manufacturing unit with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). The total plot area of the proposed unit is 4000 sq. m (4,783.96 sq. yards or 0.98 acres. Site layout Plan of the project site is given in **Figure-1.1**. Copy of same is attached as **Drawing 1**.

Land Use Planning Details

S. No.	Details	Area (in sq.m.)	Area (in sq.yd.)
1.	Total Plot Area	4000	4,783.96
2.	Total Plinth area G.F	419.10	501.23
3.	Total Plinth area F.F	271.53	324.74
4.	Total Plinth area S.F	66.87	79.97
5.	Total Other Plant Area	630.31	753.84
6.	Parking Area	111.34	133.16
7.	Total Road Area	561.89	672.01
8.	Total Green area (33.35 % of total Area)	1334.18	1,595.66
9.	Total Future expansion area	604.78	723.31

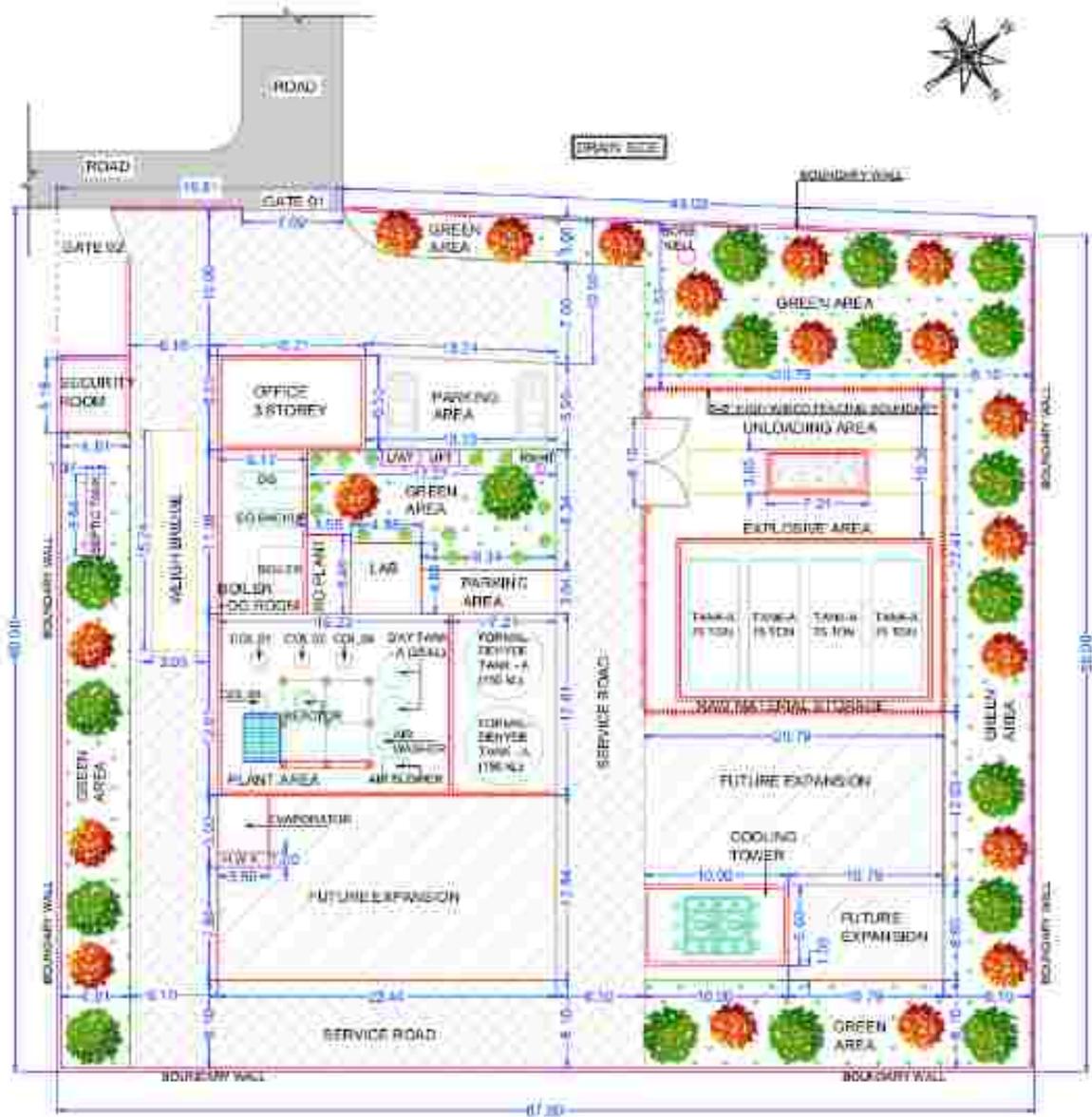


Figure 1.1: Layout plan of the project site

1.3.3 LOCATION OF THE PROJECT

Proposed unit is located at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra, Himachal Pradesh.

The Nearest Highway is NH-503 which is at a distance of approx. 8.30 km. in 'SE' direction connected by Dadasiba Road which is at a distance of approx. 1 km. in 'SW' direction. The proposed site is well connected as described in the table below:

1.	Nearest Town, City, District Headquarters along with distance in Km.	Dehra Tehsil Office: 8.63 Km. SE DC Office Kangra: 39.80 km., NE
2.	Nearest Road	Dadasiba Road-1 Km., SW NH 503- approx. 8.30 Km., SE
3.	Nearest Railway Station	Guler - approx. 11.63 km, NE
4.	Nearest Airport	Kangra-Gaggal Airport- 31.86 km, NE
5.	Nearest National Park, Wildlife Sanctuary, Reserve forest, Protected Forest, etc.	Pong Dam Lake Wildlife Sanctuary- approx. 2.60 km, N. The distance from Eco sensitive zone is approx. 1.68km)
6.	Sea Port/Inland Waterways	Kandla port- approx. 1146.43 km, SW

The proposed the project is located within 10 km. from the boundary of notified Pong Dam Wildlife Sanctuary. Map showing project location is shown below in **Fig. 1.1**. The distance from Eco sensitive zone is approx. 1.68km. NOC for establishment of the said unit w.r.t. eco sensitive zone of Pong Dam Wildlife Sanctuary is attached as **Annexure 13**.

The location of the project is shown in **Figure 1.2**. Site layout Plan of the project site is given in **Figure 1.3**. Copy of same is attached as **Drawing 1**. Detailed breakup of the area of the proposed formaldehyde manufacturing unit is given in **Table 3**. Google Earth image showing the project location is attached along with the application as kml file. Centre Co-ordinates of the project are 31°54'6.23"N, 76° 7'34.37"E. Corner Co-ordinates of the project are given below –:

Corner	Latitudes	Longitudes
1.	31°54'6.69"N	76° 7'32.68"E
2.	31°54'4.87"N	76° 7'34.40"E
3.	31°54'6.07"N	76° 7'36.05"E
4.	31°54'7.82"N	76° 7'34.18"E

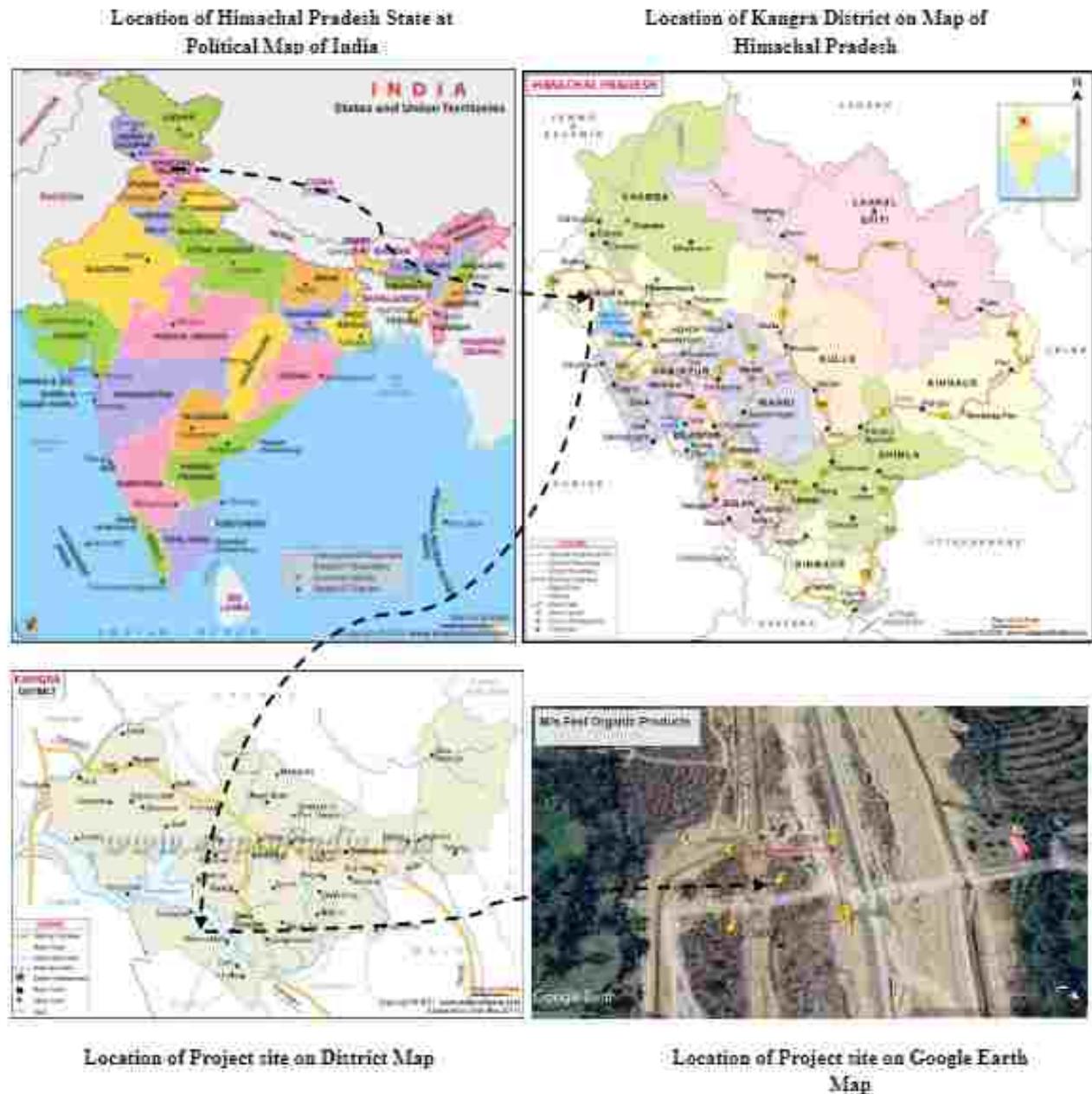


Fig. 1.2: Project location and its boundary Co-ordinates



Figure 1.3: Location of the project site

Google Earth Image showing project location & its surroundings within 500 m are attached along as **Drawing 4**. Project and study area falls in the Survey of India, Toposheet No H43E1. Toposheet showing the location of the project is attached along the report as **Drawing 7**.

1.3.4 PROJECT PROPONENT

M/s Feel Organic Products is a partnership firm incorporated on 23rd August, 2021. The Partners of the company are as under:

1. Sh. Devinder Kumar Dhir
2. Sh. Sandeep Ohri
3. Sh. Jatin Kalra
4. Sh. Sanjeev Kumar Sharma

All the partners are well versed with the process involved & can handle the project efficiently. Copy of Partnership Deed is enclosed as **Annexure-4**.

1.4 IMPORTANCE OF THE PROJECT

Formaldehyde (HCHO) is a simple and a commercially important aldehyde. It is a colorless gas at room temperature and is soluble in water, alcohol and other polar solvents. It is commonly sold as aqueous solution. Formaldehyde is being used in the number of industries for various purposes such as for the manufacturing of building materials – like pressed wood products (mostly as an adhesive resin), fiber board, plywood, etc. Additional uses in household products include additive for permanent –press, an ingredient in glues, and as a preservative in medical laboratories – as embalming fluid and as a sterilizer. However, main formaldehyde application (about 70%) is for the production of formaldehyde based resins (i.e. urea formaldehyde, phenol & melamine formaldehyde based resins).

As per report “Formaldehyde: 2019 World Market Outlook and forecast up to 2028” of Merchant Research & Consulting Ltd., a UK based market research company, Asia Pacific region consumes formaldehyde almost as Europe, North America and Latin America do together. Also, Asia Pacific region shows the fastest growth rate in formaldehyde consumption. As per the report, World formaldehyde consumption is expected to grow at nearly 5% in the coming years.

According to a TechSci Research report, “India Formaldehyde Market Study, 2011 – 2025”, the market of formaldehyde in India is anticipated to grow at a CAGR of over 4% during 2016-2025. Flourishing furniture industry along with growing focus on infrastructure-based development are the major factors propelling the India formaldehyde market. In addition to this, various capacity projects announced by formaldehyde derivatives producing companies in India are boosting the demand for formaldehyde in the country. Moreover, growing consumption of formaldehyde by multiple end user industries including construction, furniture, paints & coatings, textiles, fertilizers & pesticides, etc., is expected to drive the India formaldehyde market during forecast period. The Indian formaldehyde is projected to grow at a CAGR of 6% during 2021-2030 on account of growing focus towards roofing mat application and the surging demand for wood based articles in India. The Project is envisaged to meet the demand supply gap in the domestic market, due to increase in growth of Formaldehyde for meeting the increased demand of PLYWOOD and SUN MICA Industries.

The project will be promoted to cater Commercial market, domestic market, Export & Govt. supply. The unit may export the product to be manufactured. Local production of formaldehyde is highly important direct purchase of methanol from original importers at Kandla port, Mumbai and other dealer network in Delhi, Mumbai etc.

The vision to establish and operate the unit on Build, Own and Operate Model shall be instrumental in overcoming the hurdles of lack of financial support, lack of technical support and constant upgradation.

1.5 SCOPE OF THE STUDY

This study contains various information on Environmental factors viz-a-viz contribution of pollution by establishment of manufacturing unit. These factors include air, water, noise, health, socio-economic, land use and agricultural pattern, etc. It discusses the predicted impact of the plant activities on these factors. Broadly under the scope, it is envisaged:

- To assess the present status of air, water, land, noise, biological & socio-economic components of environment.
- To identify, quantify & evaluate positive or negative impacts of various operations on different environmental components.
- To evaluate proposed pollution control measures and to suggest additional control strategies, if any, to mitigate the adverse effects.
- To identify risk factors & suggest their mitigation including occupational health of the Workers.
- To prepare Environmental Management Plan for utilization and adoption of safety measures.
- To delineate future Environmental quality monitoring program.
- To identify the needs of the study area and suggest supportive measures under Corporate Social Responsibility.

1.6 METHODOLOGY

Various steps involved in Environmental Impact Assessment study of the project are divided into the following phases:

- Identification of significant environmental parameters and study of the existing status of air, water, noise, soil and socio economic components of the environment.
- Study of various activities of the project during operational phase and to identify the area leading to impact change in environmental quality.
- Identification prediction of impacts for the identified activities and to study levels of impacts on various environmental components.
- Evaluation of final levels of various parameters after superimposing the predicted impacts over the baseline quality.
- Formulation of Environmental Management Plan for implementation in the proposed project.

The Baseline monitoring has been conducted for the period from October, 2023 to December, 2023, at project location and 7 other locations within 10 km radius of the project by NABL and MoEF&CC approved laboratory. Data is collected to determine the existing conditions of various environmental attributes.

Environmental attributes and frequency of monitoring are outlined in **Table 1.2**.

Table 1.2: Environmental attributes and frequency of monitoring

Description	Parameters	Location	Frequency
Ambient Air	PM10, PM2.5, SOx, CO, O3, NH3, NOx, Pb, As, Ni, Bap, Benzene (12 Parameters)	8	The monitoring is carried out at a frequency of 24 hourly sample twice a week for one month. CO and ozone samples were collected on 1-hour basis.
Ambient Noise	Day-Night Time Leq	8	Once during the study period

Soil	pH, EC, BD, Texture, Organic Matter, Moisture, Sodium, Potassium, Porosity, Sand, Silt, Permeability, Water holding, Cation exchange capacity, Sodium absorption ratio.	§	Once during the study period
Ground Water	pH, TDS, TSS, TH, Total Alkalinity, Odour, Colour, Turbidity, CN, Cl, F, NO ₃ , SO ₄ , Ca, Cu, Cr, Cd, Fe, Pb, Mg, Zn, Total Coliform, E-Coli.	§	Once during the study period
Surface Water	Colour, Odour, Taste, Turbidity, pH, Conductivity, TDS, Ca, Cl, F, Fe, Mg, NO ₃ , SO ₄ , Total alkalinity, total hardness, Na, TSS, BOD, COD, K, P, DO, HCO ₃ .	1	Once during the study period

1.7 COMPONENTS OF EIA

Depending on nature, location and scale of the project, EIA report contains the following components:

- Air Environment
- Noise Environment
- Water Environment
- Biological Environment
- Land Environment
- Socio-Economic and Health Environment
- Risk Assessment
- Environment Management Plan

1.7.1 EIA CYCLE & PROCEDURE

EIA process as per EIA Notification, 2006 and its amendments is made up of the following phases:

- Screening
- Scoping
- Public Consultation
- Appraisal
- Monitoring the clearance conditions (post project six monthly compliances)

1.8 STRUCTURE OF THE REPORT

The entire EIA report is prepared based on the generic structure of EIA document given at APPENDIX III of the Notification No. S.O. 1533 dated 14th September, 2006 and its amendments. The report has been divided into twelve chapters as described below:

Chapter 1 Introduction

This chapter gives information about the project including its location and justification/ importance, brief details around the surrounding area. It also outlines the statutory requirement of obtaining prior Environment Clearance, steps to be followed for the same and basic purpose, scope and methodology of EIA study.

Chapter 2 Project Description

This chapter deals with the details of Project description, Manufacturing process description and Infrastructure facilities incorporating all industrial and environmental activities of the proposed project. It also gives information about manufacturing process and raw materials, sources of pollution and details of pollution control facilities to be provided i.e. water and wastewater details, air pollution and control system, sludge storage facility, noise control measures etc.

Chapter 3 Description of the Environment

This chapter provides details of the Environment which includes Base Line Environment Study giving details about status of air quality, meteorology, water, noise, land, ecology and socio economic environment of the study area based on information collected through actual field

study or from secondary sources.

Chapter 4 Anticipated Environmental Impacts & Mitigation Measures

This chapter deals with the identification of Impacts and its Mitigation Measures, which identifies the impacts of various environmental parameters whether beneficial or deleterious for the operation phase of the project. It also quantifies significant impacts of the project on various environmental components for the operation phase of the project.

Chapter 5 Analysis of Alternatives

It identifies the description of each alternative, Summary of adverse impacts of each alternative, Mitigation measures for each alternative.

Chapter 6 Environmental Monitoring Programme

It provides Environmental Monitoring Plan which provides details of monitoring plan of various environmental parameters as well as its frequency of monitoring.

Chapter 7 Additional Studies

It provides Additional Studies which includes Risk Assessment, Traffic study, Social Impact Assessment and R & R Action Plans.

Chapter 8 Project Benefits

This chapter describes the benefits accruing to the locality, neighborhood, region and nation as a whole. It brings out details of benefits by way of improvement in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

Chapter 9 Environment Cost Benefit Analysis

This chapter includes Project Cost, cost of pollution control facilities and environment cost benefit analysis.

Chapter 10 Environment Management Plan

This chapter details the inferences drawn from the environmental impact assessment exercise. It provides mitigation and control measures for environmental management plan (EMP) for minimizing the negative environmental impacts and to strengthening the positive environmental impacts of the proposed project. Technical aspects of monitoring the effectiveness of mitigation measures have been given in this chapter.

Chapter 11 Summary & Conclusion

This chapter provides the summary and conclusions of the EIA study of the project with overall justification for implementation of the project and also explanation of how, adverse effects will be mitigated.

Chapter 12 Disclosure of Consultant Engaged

This chapter deals with Profile of consultant engaged for the monitoring and preparation of EIA report.

1.9 LAWS APPLICABLE TO THE PROJECT

Acts, Notifications, Rules and Amendments applicable for establishment of Formaldehyde manufacturing unit and its operation includes the following:

- The Water (Prevention & Control of Pollution) Act, 1974/ Rules, 1975.
- The Air (Prevention & Control of Pollution) Act, 1981/ Rules, 1982.
- The Environment (Protection) Act, 1986/ Rules, 1986.
- The Environmental Impact Assessment (EIA) Notification, 2006 & its amendments.
- Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
- Batteries (Management & Handling) Rules, 2001
- The Indian Boilers Act-1923
- Solid Waste Management Rules, 2016.
- E-Waste (Management) Rules, 2016 and amendment Rules, 2018.
- The Manufacture, Storage & Import of Hazardous Chemical Rules, 1989 (Including amendment rules till date).

- The Public Liability Insurance Act, 1991 & Rules, 1991.
- Ozone Depleting Substance (Regulation & Control) Rules, 2000.
- The Factory Act, 1948 (as amended till 1987).
- The National Green Tribunal Act, 2010
- The Disaster Management Act, 2005

CHAPTER 2.0 PROJECT DESCRIPTION

2.1 PROJECT DESCRIPTION

This chapter highlights the key features and vital characteristics for construction of formaldehyde unit, its layout and design, details on the process, raw materials requirement, utilities and services, infrastructure facilities and sources of waste generation, their quantity, treatment and disposal of the waste.

2.2 HISTORY OF PROJECT

M/s Feel Organic Products is planning to set up a Formaldehyde manufacturing unit with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). The total plot area of the proposed unit is 4000 sq. m (4,783.96 sq. yards or 0.98 acres. The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde manufacturing unit. Copy of Provisional Allotment letter is attached along as **Annexure-1**. Land Documents including Possession letter and Agreement to Lease are enclosed as **Annexure 2(b) & 2(c)**. The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as **Annexure-3**.

Photographs of the project site is shown in **Fig. 2.1**.



Fig. 2.1: Photograph of the site

2.3 TYPE OF THE PROJECT

M/s Feel Organic Products is planning to set up a Formaldehyde manufacturing unit with production capacity of 100 MT/day at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). The total plot area of the proposed unit is 4000 sq. m (4,783.96 sq. yards or 0.98 acres).

As per the EIA Notification of Ministry of Environment, Forest & Climate Change (MoEF&CC) dated 14th September, 2006 and amendments thereof, the proposed project falls under Category- 'A', Schedule 5(f) Synthetic Organic Chemicals Industry, as the project is located within 10 km. from the boundary of notified Pong Dam Wildlife Sanctuary. Thus, Environmental Clearance will be obtained from the EAC, MoEF&CC.

The salient features of the project are as under:

Production capacity: 100 MT/day

Total Area: 4000 sq. m. (4,783.96 sq. yards or 0.98 acres)

Estimated Project cost: Rs. 441.25 Lakhs (approx.)

Interlinked projects: None.

2.4 NEED FOR THE PROJECT

Formaldehyde (HCHO) is the simplest and a commercially important aldehyde. It is a colorless gas at room temperature and is soluble in water, alcohol and other polar solvents. It is commonly sold as aqueous solution. Formaldehyde is being used in the number of industries for various purposes such as for the manufacturing of building materials – like pressed wood products (mostly as an adhesive resin), fiber board, plywood, etc. Additional uses in household products include additive for permanent –press, an ingredient in glues, and as a preservative in medical laboratories – as embalming fluid and as a sterilizer. However, main formaldehyde application (about 70%) is for the production of formaldehyde based resins (i.e. urea formaldehyde, phenol & melamine formaldehyde based resins).

As per report “Formaldehyde: 2019 World Market Outlook and forecast up to 2028” of Merchant Research & Consulting Ltd., a UK based market research company, Asia Pacific region consumes formaldehyde almost as Europe, North America and Latin America do together. Also, Asia Pacific region shows the fastest growth rate in formaldehyde consumption. As per the report, World formaldehyde consumption is expected to grow at nearly 5% in the coming years.

According to a TechSci Research report, “India Formaldehyde Market Study, 2011 – 2025”, the market of formaldehyde in India is anticipated to grow at a CAGR of over 4% during 2016-2025. Flourishing furniture industry along with growing focus on infrastructure-based development are the major factors propelling the India formaldehyde market. In addition to this, various capacity expansion projects announced by formaldehyde derivatives producing companies in India are boosting the demand for formaldehyde in the country. Moreover, growing consumption of formaldehyde by multiple end user industries including construction, furniture, paints & coatings, textiles, fertilizers & pesticides, etc., is expected to drive the India formaldehyde market during forecast period. The Indian formaldehyde is projected to grow at a CAGR of 6% during 2021-2030 on account of growing focus towards roofing mat application and the surging demand for wood based articles in India. The Project is envisaged to meet the demand supply gap in the domestic market, due to increase in growth of Formaldehyde for meeting the increased demand of PLYWOOD and SUN MICA Industries.

2.5 LOCATION OF PROJECT

Proposed unit is located at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra, Himachal Pradesh. The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as **Annexure-3**.

Google Earth Image showing project location & its surroundings within 500 m are attached along as **Drawing 4**. Project site and study area falls in the Survey of India, Toposheet No **H43E1**. Toposheet showing the location of the project is attached along as **Drawing 7**. The project boundary coordinates of all corners are as follow:

Table 2.1: Coordinates of the project

Corner	Latitudes	Longitudes
1.	31°54'6.69"N	76° 7'32.68"E
2.	31°54'4.87"N	76° 7'34.40"E
3.	31°54'6.07"N	76° 7'36.05"E
4.	31°54'7.82"N	76° 7'34.18"E

Table 2.2: Location details of the project

S. No.	Particulars	Details within 10 km
1.	Location	
a)	Place	Plot No.-3, Industrial Area Chanour, Phase-II
b)	Tehsil	Dehra
c)	District	Kangra
d)	State	Himachal Pradesh
2.	Land use at the project	Industrial Zone
3.	Nearest Highway	Dadasiba Road-1 Km., SW NH 503- approx. 8.30 Km., SE
4.	Nearest Railway Station	Guler Railway Station- approx. 11.63 Km., NE
5.	Nearest Airport	Kangra-Gaggal Airport- 31.86 km, NE
6.	Nearest Major City	Kangra - approx. 25.77 km, NE
7.	Nearest Major settlement	Dehra Gopipur- approx. 8.55 km, SE
8.	Features within 10 km	
a)	Defense Installations	Nil

b)	Archaeological Important Places	Nil
c)	Wild Life Sanctuaries	Pong Dam Wildlife Sanctuary (2.60 km; N)
d)	Reserved/Protected Forest	Taimal RF (2.36 km; S) Chaplan RF (2.87 km; SW) Bhakrar RF (4.93 km; SE) Kohli RF (5.66 km; NE) Dada Chatwal PF (6.40 km; NW) Tilli RF (7.23 km; NE) Bihan RF (7.52 km; SE) Chhabar PF (7.56 km; NE) Chalan PF (8.59 km; SW) Khairan PF (9.52 km; NE)
e)	Water Bodies	Thor Khud (2.11 km; W) Maharana Pratap Reservoir (2.60 km; N) Bargoalan di Khad (2.64 km; NW) Bai Di Khad (3.89 km; S) Dada Khad (4.05 km; SW) Tipri Khad (5.64 km; SW) Sauna Di Khad (6.28 km; SW) Karoa Khad (6.76 km; SW) Sewari Khad (7.67 km; SW) Beas River (7.88 km; SE) Nalsoha Khad (8.25 km; SE) Narad Khad (8.90 km; E)
f)	Hill Ranges	Nil
g)	State Boundary	Nil

Table 2.3: Environmental Sensitivity

Environmental Sensitivity			
S.No	Areas	Name/ Identity	Aerial distance (within 15 km) proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value.	Pong dam wildlife sanctuary Taimal RF Chaplan RF Bhakrar RF Kohli RF Dada Charwal PF Tilli RF Bihan RF Chhabar PF Chalan PF Khairian PF Pakhrum RF Ghagar Chhab RF Dhar Pantali RF	2.60 km; N 2.36 km; S 2.87 km; SW 4.93 km; SE 5.66 km; NE 6.40 km; NW 7.23 km; NE 7.52 km; SE 7.56 km; NE 8.59 km; SW 9.52 km NE 10.57 km; NE 11.38 km; NE 12.32 km; NE
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests.	<u>Water Body:</u> Thor Khud Maharana Pratap Reservoir Bargoalan di Khad Bai Di Khad Dada Khad Tipri Khad Sauna Di Khad Karoa Khad Sewari Khad	2.11 km; W 2.60 km; N 2.64 km; NW 3.89 km; S 4.05 km; SW 5.64 km; SW 6.28 km; SW 6.76 km; SW 7.67 km; SW

		Beas River	7.88 km; SE
		Nalsoha Khad	8.25 km; SE
		Narad Khad	8.90 km; E
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over-wintering, migration	Pong dam wildlife sanctuary	2.60 km, N
		Taimal RF	2.36 km, S
		Chaplan RF	2.87 km; SW
		Bhakrar RF	4.93 km; SE
		Kohli RF	5.66 km; NE
		Dada Chatwal PF	6.40 km; NW
		Tilli RF	7.23 km; NE
		Bihan RF	7.52 km; SE
		Chhabar PF	7.56 km; NE
		Chalan PF	8.59 km; SW
		Khairian PF	9.52 km NE
		Pakhrum RF	10.57 km; NE
		Ghagar Chhab RF	11.38 km; NE
		Dhar Paniali RF	12.32 km; NE
4	Inland, coastal, marine or underground waters	Yes	Underground water exists
5	State, National boundaries	-	-
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Dada Siba Road NH 503	1 km; SW 8.30 Km; SE
7	Defense installations	-	-
8	Densely populated or built-up area	Dada Siba Dehra Gopipur	4.47 km; NW 8.55 km; SE
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	School: Gov. Senior Sec. School, Badhal Thore Gov. Primary School,	Approx. 2.84 km; SE Approx. 3.3 km; SE

		<p>Badhal Thore</p> <p>Shivalik International Convent School, Nangal</p> <p>Government Middle School, Nangal Chowk</p> <p>Govt. Primary School, Batwar</p> <p>Pvt. Sarsvati Bidya Niketan, Batwar</p> <p>GSSS, Behin</p> <p>DAV Sr. Sec. Public School</p> <p>Hospital:</p> <p>Samskar Ayurvedic Health Care Centre</p> <p>Veterinary Hospital, Dehra</p> <p>Govt. Hospital, Haripur</p> <p>Ranu Hospital & Trauma Center, Dehra</p> <p>Lifeline Hospital, Dehra Gopipur</p> <p>Temples:</p> <p>Shiv Mandir</p> <p>Maa Ambika Baglamukhi Temple, Bassi</p> <p>Mata Baglamukhi Temple, Bankhandi</p> <p>Maa Chintpurna Temple, Kangra</p>	<p>Approx. 2.96 km; NW</p> <p>Approx. 3.20 km; NW</p> <p>Approx. 3.74 km; NW</p> <p>Approx. 3.94 km; NW</p> <p>Approx. 5.94 km; SE</p> <p>Approx. 8.10 km; SE</p> <p>Approx. 8.08 km; NW</p> <p>Approx. 8.36 km; NW</p> <p>Approx. 11.06 km; NE</p> <p>Approx. 9.87 km; SE</p> <p>Approx. 9.64 km; SE</p> <p>Approx. 1.40 km; NE</p> <p>Approx. 2.55 km; SE</p> <p>Approx. 10.41 km; NE</p> <p>Approx. 10.50 km; SW</p>
10	Areas containing important, high quality	Pong Dam Wildlife Sanctuary	2.60 km, N

	or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Mata Baglamukhi Temple, Bankhandi Maa Chintpurni Temple, Kangra	Approx. 10.41 km;NE Approx. 10.50 km;SW
11	Areas already subjected to pollution or environmental damage (those where existing legal environmental standards are exceeded)	-	The area is not subjected to any environmental damage.
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	-	The site falls under Zone V as per the Seismic Zone Map of India. However, natural calamity cannot be predicted.

2.6 PROJECT SIZE & MAGNITUDE OF OPERATION

The size and magnitude of operation of the proposed project is given in **Table 2.4**.

Table 2.4: Size & magnitude of operation of the project

S. No.	Parameters	Description
1.	Identification of the project	Formaldehyde manufacturing unit with production capacity of 100 KLD falls under Category- 'A', Schedule 5(f) Synthetic Organic Chemicals Industry as per EIA Notification dated 14 th September, 2006 and its subsequent amendments.
2.	Project Proponent	Mr. Devinder Kumar Dhir (Partner) M/s Feel Organic Products E-mail: feelorganicproducts@gmail.com
3.	Brief description of	Formaldehyde manufacturing unit with production

	nature of the project	capacity of 100 KLD located at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Distt. Kangra, Himachal Pradesh. by M/s Feel Organic Products. The total plot area of the proposed unit is 4000 sq. m. (4,783.96 sq. yards or 0.98 acres) and 33.35% of plot area i.e. 1334.18 sq.m. has been reserved for green area within the industry.
4.	Salient Features of the Project Proposed	
4.1	Overall plant capacity	Proposed Quantity: 100 KLD.
4.2	Area Details	Plot area: 4000 sq. m. (4,783.96 sq. yards or 0.98 acres)
4.3	Location	Project boundary coordinates of all corners are as follows: A: 31°54'6.69"N, 76° 7'32.68"E B: 31°54'4.87"N, 76° 7'34.40"E C: 31°54'6.07"N, 76° 7'36.05"E D: 31°54'7.82"N, 76° 7'34.18"E Google Earth Image showing project location & its surroundings within 500 m are attached along as Drawing 4 . Project site and its study area falls in the Survey of India, Toposheet No. H43E1 is attached along as Drawing 7 .
4.4	Water requirement	Source: Ground water (Borewell). Total water requirement for the proposed project will be 86 KLD; out of which fresh water requirement will be 82 KLD which will be met through borewell till the development work of water supply scheme for industrial area Chanour is completed. Permission of water supply has been granted from Distt. Industries

		Centre, Kangra vide letter no. Ind/Kgr/IA/Chanour/P-3/3607. Copy of same is attached as Annexure-5 .
4.5	Wastewater	There is no wastewater generation from the process. 13.7 KL/once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Condensate from evaporator will be reused to meet the cooling water demand. 2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.
4.6	Man Power	Total work force of around 37 persons distributed in 3 shifts including technical, skilled, semi-skilled, administrative, etc.
4.7	Power requirement	Total power requirement will be 250 Kw which will be supplied by Himachal Pradesh State Electricity Board Limited (HPSEB) for which permission has been granted vide letter no. Ind/Kgr/IA/ Chanour/P-3/2609 dated 20.01.2023. Copy of approval from HPSEBL is attached as Annexure-6 . DG set of capacity 200 kVA each will be provided as power back up.
4.8	Alternative site	No alternate site is considered for the proposed project as the said project falls under notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as Annexure-3 .
4.9	Land form, Land use and Land ownership	The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde

		manufacturing unit. Copy of Provisional Allotment letter is attached along as Annexure-1 . Land Documents including Possession letter and Agreement to Lease are enclosed as Annexure 2(b) & 2(c) . The project falls in notified Industrial Area as per the notification No: Ind.A(F)8-1/2019. Copy of same is attached as Annexure-3 .
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2.7 PROJECT LAYOUT

The location of the project is shown in **Fig. 2.2**. Layout Plan of the project site showing the features along with the common utilities and services within the project is attached along as **Fig. 2.3**.

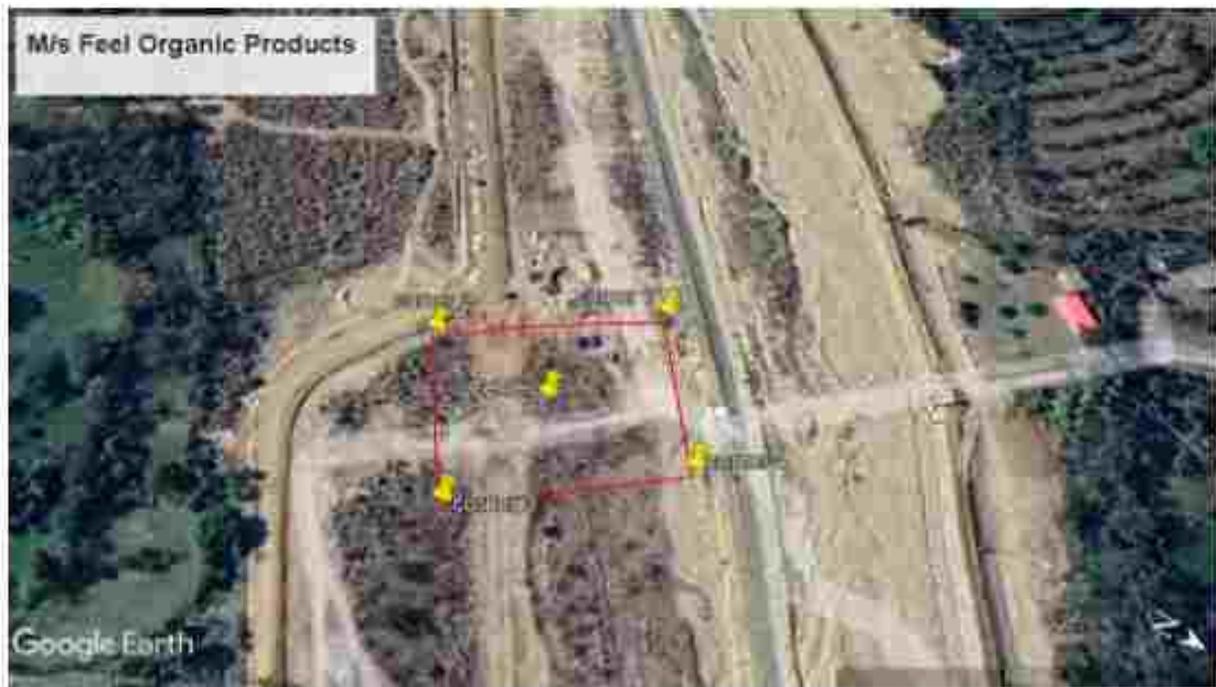


Figure 2.2: Location of the project site

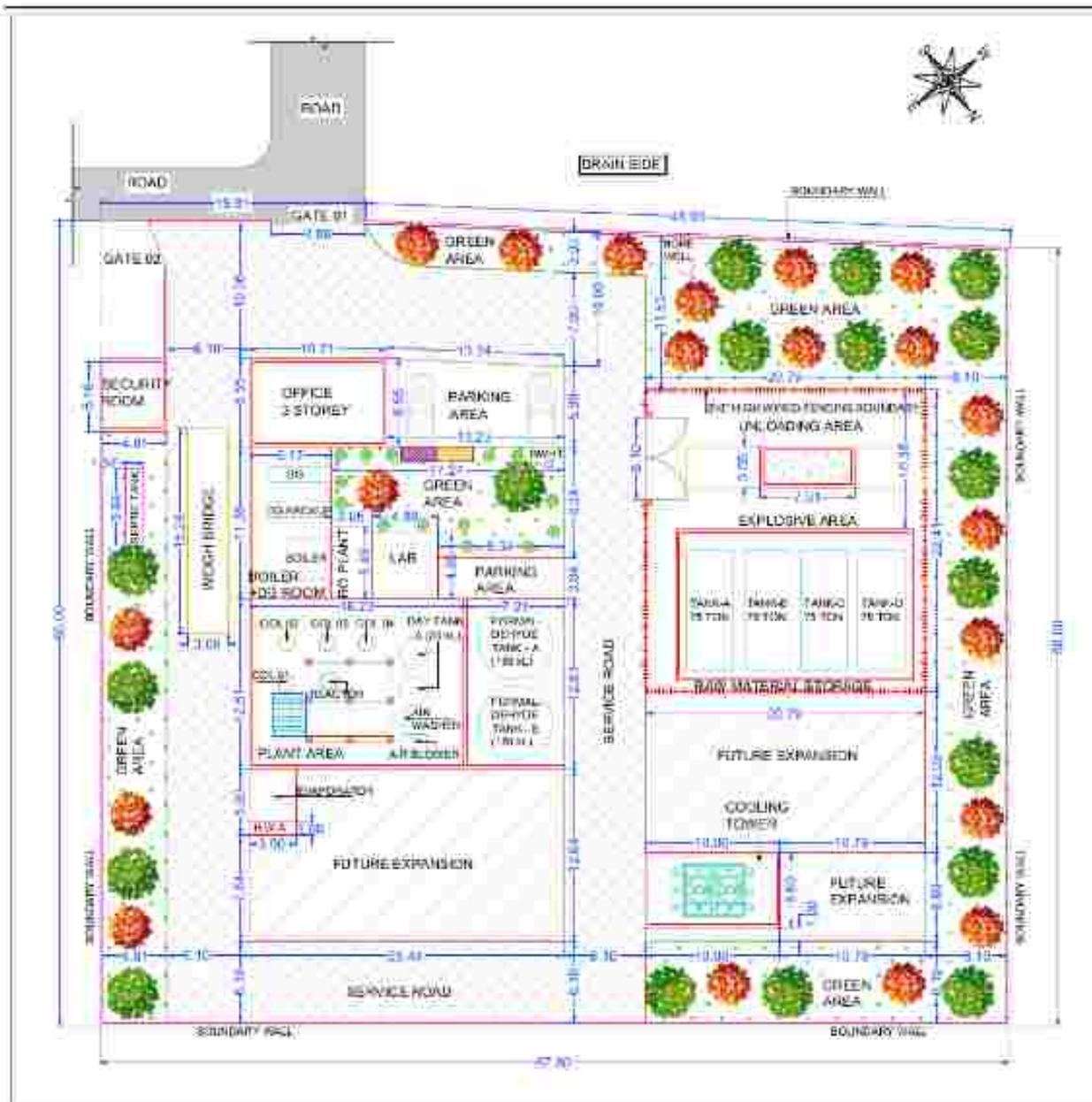


Figure 2.3: Layout Plan of the project site

2.8 SCHEDULE FOR APPROVAL & IMPLEMENTATION

The project schedule is given below:

Monitoring Period	October, 2022 to December, 2022 (12 weeks)
Submission of Form-I/PFR for issuance of TOR's	04 th March, 2023
Proposal accepted by MS on	14 th March, 2023
ToR issued by MoEF&CC	15 th March, 2023

The implementation of the construction of project will be taken up after receipt of Environmental Clearance from MoEF&CC and Consent to Establish from Punjab Pollution Control Board.

2.9 PROJECT DESCRIPTION

2.9.1 AREA STATEMENT

The total plot area of the proposed unit is 4000 sq. m (or 0.98 acres). The land use planning is given in Table 2.5. Layout plan of the industry is attached along as Drawing-1.

Table 2.5: Area break-up details

S. No.	Details	Area (in sq.m.)	Area (in sq.yd.)
1.	Total Plot Area	4000	4,783.96
2.	Total Covered area G.F	419.10	501.23
3.	Total Covered area F.F	271.53	324.74
4.	Total Covered area S.F	66.87	79.97
5.	Total Other Plant Area	630.31	753.84
6.	Parking Area	111.34	133.16
7.	Total Road Area	561.89	672.01
8.	Total Green area (33.35 % of total Area)	1334.18	1,595.66
9.	Total Future expansion area	604.78	723.31

2.9.2 MACHINERY

The plant and machinery being proposed to be used in the complex is given below in the Table 2.6.

Table 2.6: List of Proposed Plant and Machinery

S. No.	Particulars	Type	No's
1	Evaporator with steam coil, Air pipe & Air Header (in S.S.304)		1
2	Super Heater with cyclone with flame roaster and liquid methanol separator and pipeline (S.S.304)		1
3	Reactor with Re boiler (bottom and top liner SS304)		1
4	Methanol Separator		1
5	Steam Separator with Line		1
6	Hot Water Process Tank	5 HP	1
7	Methanol RO Water Mixing Tank		1
8	RO Water Storage Tank		1
9	First Absorption Column with Structure Packing		1
10	Third Absorption Column with rings and bubble cup		1
11	Third Absorption Column with rings and bubbles cup		1
12	First Production Tank SS304	25 Ton	2
13	Plant Fitting Line		1
14	Structure (Steel)		1
15	Oil Fired Boiler with Chimney Complete		1
16	Pumps and Valves		
17	Rota Meter Pressure Gauge, Temperature Gauge, Level Cock		
18	Roots blower with 60 HP Motor		1
19	Heat Exchanger		1
20	Cooling Tower	450 TR	1
21	RO Water Plant	6000 LP/M	1
22	Formaldehyde Tank SS304	300 KL Storage	1
23	Weighing Bridge	60 Ton	1
24	Generator 200 kVA	Make Sudhir	1

25	Methanol Tank	300 KL Storage	1
26	Electric Panel with AC drive		1
27	Plant Cable Work		1
28	Fire Hydrant Line		1
29	Evaporator	10KLD	1
Glue Raisin Plant			
1	Reaction Kettle (Moc SS 304)	6 KL	1
2	Reaction Kettle (Moc SS 304)	5 KL	1
3	Reaction Kettle (Moc SS 304)	3 KL	1
4	Condenser for 6 KL Kettle (SS304)		1
5	Condenser for 5 KL Kettle (SS304)		1
6	Condenser for 3 KL Kettle (SS304)		1
7	Receiver Tank (Moc SS304)	1.5 KL	2
8	Receiver Tank (Moc SS304)	1 KL	1
9	Formaldehyde Storage Tank Moc SS304	5 KL	1
10	Phenol Storage Tank Moc M.S.	25 KL	1
11	Plant Structure		1

2.9.3 RAW MATERIAL REQUIREMENT

The main raw material is methanol which will be directly purchased from original importers at kandla port, Mumbai and other dealer network in Delhi, Mumbai etc. All the raw materials and product shall be transported via road transport. The raw material detail is given in **Table 2.7**.

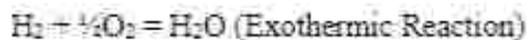
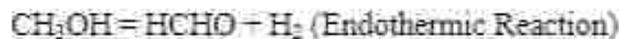
Table 2.7: List of Raw materials

S. No.	Name of Raw Material	Quantity
1	Methanol	46 KLD

2.9.4 MANUFACTURING PROCESS DESCRIPTION

Formaldehyde is the oxidation/dehydrogenation product of methanol with oxygen in the presence of silver catalyst. A fixed quantity of methanol and water is introduced into a mixing vessel from where this mixture is taken into an evaporator. Air and the recycled tail Gas is also introduced into the evaporator. A temperature of 70°C is maintained by heating with Steam through the steam coil which facilitates the evaporation of methanol. The air, methanol Vapor, Water molecules and Tail Gas mixture is then further heated to 120°C. in the Super heater and then introduced into the Reactor where, in presence of silver catalyst maintained at a temperature of 650°C, the oxidation/dehydrogenation reaction takes place as per the following chemistry:

Chemical Reaction:



Several side Reactions also happen to produce Formic acid, carbon dioxide and Carbon monoxide. The endeavor is to minimize these side reactions. The catalyst bed temperature is maintained at around 640 to 650°C by controlling the composition of Reactor feed gas.

Absorption:

The Reaction is net Exothermic. In the Reactor 3 itself which is also a waste heat boiler the temperature of the product gasses is brought down to 180° C and then further cooled down to about 95°C in the Reboiler by circulating the solution in the evaporator in the Reboiler and the Evaporator solution itself getting heated up to 70° C thus saving on energy. With OFF GAS (Tail Gas) Recycle surplus steam to the extent of 200-250 kgs per Ton of Formaldehyde is available for export which can be used in the Resin Reactor. The product gasses are further cooled to about 75°C in the condenser by circulation of cooling water from the cooling tower. This proposal does not consider OFF GAS Recycle.

The reaction gas containing Formaldehyde, un reacted Methanol and water vapor is then directed to Absorption column I and escaping Formaldehyde gases are absorbed by circulating

and cooling the Formaldehyde solution in Plate Heat Exchanger from the absorber sump. The part of the circulation is taken out as product. Mostly the absorber is packed with structured packing. With proper packing and cooling more than 95% absorption is completed in the absorption column - I.

The unabsorbed gas from the absorption column – I is absorbed in the absorption column - II by circulating and cooling absorber sump dilute Formaldehyde solution in Plate Heat Exchanger.

Finally, the gas is washed with pure Chilled RO water at the upper part of the column - II, provided with bubble cap trays, and then exhausted as tail gas to the atmosphere.

The Exhaust gasses now contain only Nitrogen, Hydrogen, Carbon Dioxide, Carbon Monoxide and traces of Formaldehyde and Methanol. The Hydrogen can be burnt or incinerated to generate.

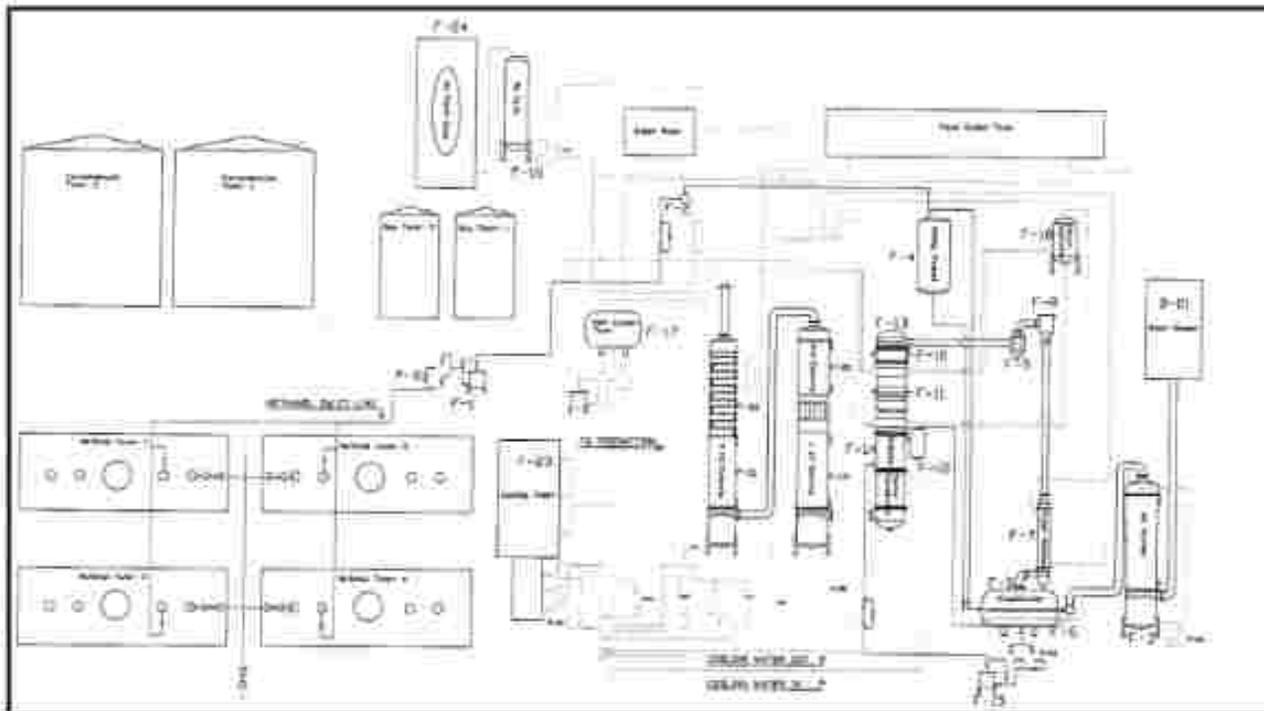


Figure 2.4: Flow Diagram of Manufacturing Process

2.9.5 EMPLOYMENT GENERATION

There will be a total work force of around 37 persons distributed in 3 shifts including technical, skilled, semi-skilled, administrative, etc. Details described under with skills: -

S. No.	Skills	Headcount On-rolls	Headcount (Out-sourced)	Total
1.	Site Manager	1	0	1
2.	Production Manager	1	0	1
3.	Quality Control Engineer	2	0	2
4.	Technical	3	1	4
5.	Welder/ Plumber	3	0	3
6.	Shift Supervisor	3	0	3
7.	Operator Staff	9	0	9
8.	Marketing Manager	2	0	2
9.	Accountant	1	0	1
10.	Front Office Staff	2	0	2
11.	Security Guards	3	0	3
12.	Drivers	2	0	2
13.	Loaders/ Packers	3	0	3
14.	Gardener	1	0	1
Total Manpower				37

2.9.6 PROJECT COST

The estimated cost of proposed project is Rs. 441.25 lakh (approx.). The break-up of the project cost is given in Table 2.8.

Table 2.8: Cost details of the project

S. No.	Description	Cost (In Lakhs)
1.	Land	32.00
2.	Building	50.00
3.	Plant & Machinery	355.00
4.	Furniture and Fixture	2.50
5.	Misc. Fixed Assets	1.75
6.	Total	441.25

2.9.7 WATER REQUIREMENT

Source of Water: Ground Water

Total water requirement for the proposed project will be 86 KLD, out of which fresh water requirement will be 82 KLD which will be met through borewell till the development work of water supply scheme for industrial area Chanour is completed. Permission of water supply has been granted from Distt. Industries Centre, Kangra vide letter no. Ind/Kgr/IA/ Chanour/P-3/3607. Copy of same is attached as **Annexure-5**.

Total Waste Water Generation:

➤ Industrial Effluent

There will be no wastewater generation from the process. 13.7 KL/once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Condensate from evaporator will be reused to meet the cooling water demand.

➤ Domestic Effluent

2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.

The quantitative details regarding water requirement and waste water generation are given below in **Table 2.9**. The water balance diagram for existing and proposed unit are shown in **Figure 2.5**.

Table 2.9: Water and Wastewater Calculation

S. No.	Purpose	Water Consumption	Wastewater Generation
1.	RO Water	72.8 KLD	20.3 KLD
	• Process	65.5 KLD	13 KL/once in three months
	• RO reject	-	7.3 KLD
2.	Boiler Feed	1.5 KLD	0.3 KL/once in three months
3.	Cooling Water	2.0 KLD	0.4 KL/once in three months
4.	Domestic Water	2.7 KLD	2 KLD
5.	Green Area	7.0	0 KLD
	Total	86 KLD	9.3 KLD and 13.7 KL/ once in three months

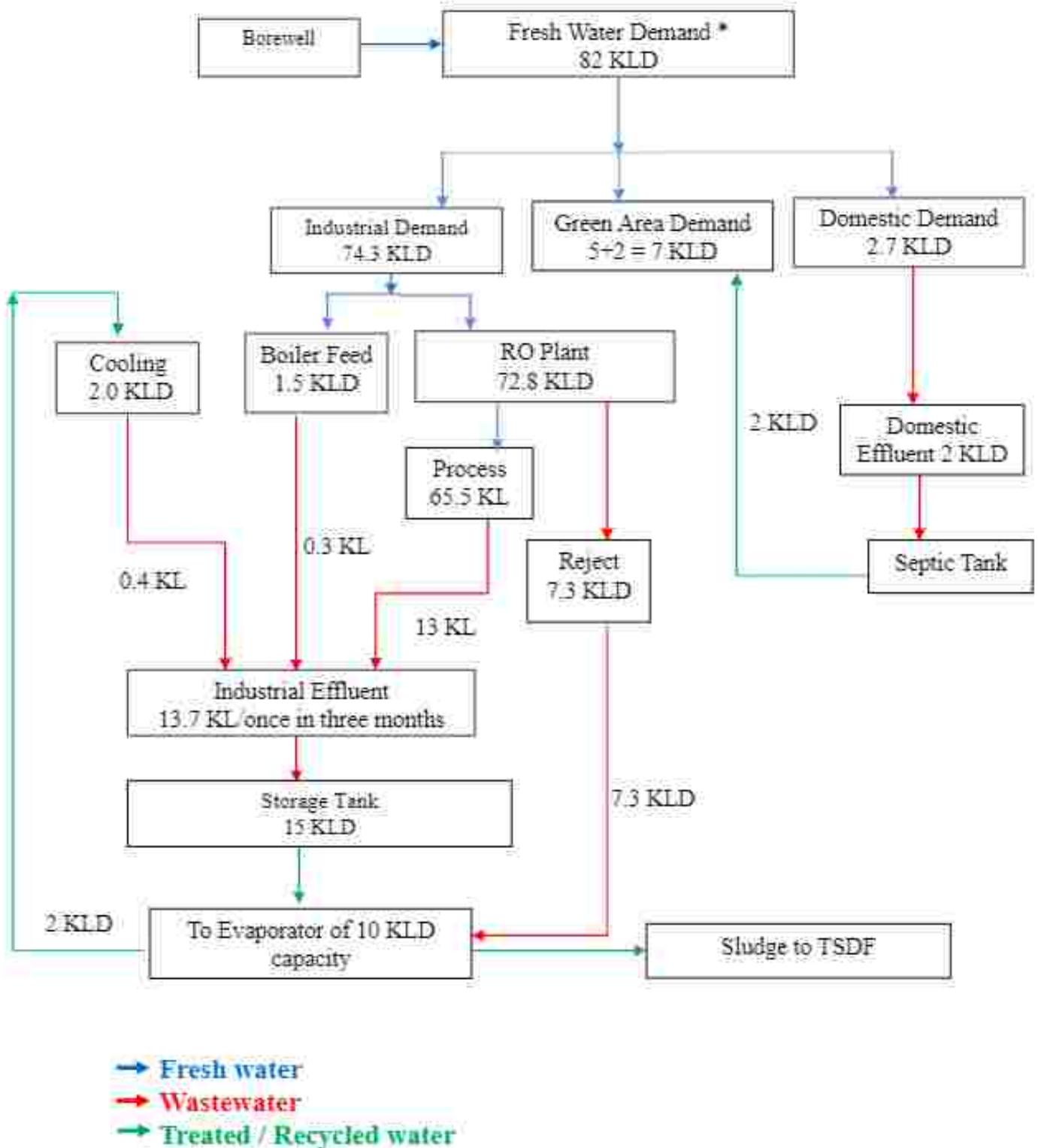


Figure 2.5: Water Balance Diagram

2.9.8 SEWAGE TREATMENT TECHNOLOGY

2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.

2.9.9 EFFLUENT TREATMENT SCHEME

Total 23 KLD of effluent will be generated during operational phase of industry, out of which 13.7 KL/once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Condensate from evaporator will be reused to meet the cooling water demand. 2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.

EVAPORATOR

RO reject @ 7.3 KLD and effluent stored in the storage tank will be treated using Evaporator. Evaporator is designed to deal with the industrial effluent and high TDS in RO Reject water. Effluent will be transferred to the evaporator. Electrical based with thermic fluid type evaporator is considered to evaporate the RO Reject water and industrial effluent. These type evaporators generate the heat from thermic fluid by heating up through heater power. The applied heat converts the water in the solution into vapor.

2.9.10 POWER

Total power requirement will be 250 Kw which will be supplied by Himachal Pradesh State Electricity Board Limited (HPSEB) for which permission has been granted vide letter no. Ind/Kgr/IA/ Chanour P-3/2609 dated 20.01.2023. Copy of approval from HPSEBL is attached as **Annexure-6**. DG set of capacity 200 kVA each will be provided as power back up.

2.9.11 SOLID WASTE

2.9.11.1 Solid Waste Management

Approximately, 10 kg/day (25 persons × 0.2 kg/person/day + 12 persons × 0.4 kg/person/day) of domestic waste will be generated. The solid waste will be disposed off as per Solid Waste Management Rules, 2016 and amendments thereof. The color coded closed bins for

biodegradable and non-biodegradable waste shall be placed in each section. The biodegradable waste bin will be treated in compost pits. The waste from non-biodegradable waste bin shall be given to recyclers.

2.9.11.2 Hazardous Waste

The plant will generate following Hazardous waste as given below in Table 2.10. The Hazardous waste will be collected, stored and disposed as per Hazardous Waste Management Rules, 2016 and amendments thereof.

Table 2.10: Hazardous Waste Generation

S. No.	Name of Waste	Category	Quantity	Mode of Disposal
1.	Used Oil	5.1	0.1 KL/annum	To authorized recycler
2.	Sludge from Evaporator	35.3	44 tones annum	To TSDF

2.10 DESCRIPTION OF MITIGATION MEASURES INCORPORATED IN TO THE PROJECT TO MEET ENVIRONMENTAL STANDARDS, ENVIRONMENTAL OPERATING CONDITIONS OR OTHER EIA REQUIREMENTS

Table 2.11: Environmental aspects, impacts and proposed mitigation measures

S.No.	Aspects	Impacts	Proposed Mitigation Measures
1.	Wastewater generation	Water Pollution	There is no wastewater generation from the process. 13.7 KL/once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Condensate from evaporator will be reused to meet the cooling water demand. 2 KLD of domestic wastewater will be generated from the unit which will be treated in

			a septic tank and will be reused for green area demand.
2.	<ul style="list-style-type: none"> Process Emission and emission from boiler and D.G. set Dust Emission 	Air Pollution	<ul style="list-style-type: none"> To control the emission from the Boiler and D.G. set, stack of adequate height will be provided. Water sprinkling system will be provided to control the dust emission.
3.	Noise generation during operation of plant	Noise Pollution	<ul style="list-style-type: none"> All noise generating equipment's will be provided with enclosures and vibration dampening. The D.G. set will be kept in acoustically treated room. Ear plugs & ear mufflers will be provided to the workers as PPE. Green area will be provided to avoid the odour.
4.	Use of water	Impact on Hydrogeology	Water will be recycled to the best possible extent. The wastewater will be treated and reused within the plant premises to achieve zero liquid discharge by adopting suitable technology.

CHAPTER 3.0 DESCRIPTION OF THE ENVIRONMENT

3.1 INTRODUCTION

This chapter illustrates the description of the existing environmental status of the study area with reference to the major environmental attributes. The existing environmental setting is considered to establish the baseline conditions which are described with respect to physical environment, air environment, water environment, noise environment, traffic pattern and density, land environment, biological environment and socio economic environment.

The monitoring of environmental parameters has been conducted from October, 2022 to December, 2022 at project and 7 other locations within the 10 km study area. The monitoring has been carried out in accordance with the guidelines issued by the Ministry of Environment, Forest & Climate Change, CPCB and PPCB during the study period.

Baseline Environmental status in and around the project depicts the existing quality of Air, Noise, Water, Soil, Ecology & Biodiversity and Socio-economic environment. Based on the baseline data, environmental impact assessment is carried out and Environmental Management Plan is prepared.

This baseline environmental study reveals information on existing environmental scenario:

- Delineation of project location and study area.
- Delineation of the environmental components and methodology.
- Delineation of study period.
- Delineation of the location of the plant and description of its surroundings based on secondary data.

3.2 STUDY AREA & PERIOD

Studies of various environmental parameters was done within the study area. The impact identification always commences with the collection of baseline data such as Ambient Air Quality, Micro-Meteorology, Ground and Surface Water Quality, Noise levels, Soil Quality, Land use pattern, Biological Environment and Socio-economic aspects, Solid and Hazardous waste,

Risk Assessment, Geology and Hydrology within the study area of 10 km radius.

The baseline environmental study was conducted for the period of October 2022 to December, 2022 by M/s Eco Paryavaran Laboratories & Consultants Pvt. Ltd., NABL and MoEF&CC Accredited Lab in accordance with the Guidelines for EIA issued by the Ministry of Environment, Forest and Climate Change, Govt. of India and CPCB, New Delhi. The study area showing 10 km area of project location marked on Toposheet is enclosed as **Drawing 7**. Copy of lab approvals is enclosed as **Annexure 9**.

3.3 COMPONENTS & METHODOLOGY

The data was collected from both primary and secondary sources. The baseline information on micro-meteorology, ambient air quality, water quality, noise levels, soil quality and floristic descriptions are largely drawn from the data generated by M/s Eco Paryavaran Laboratories & Consultants Pvt. Ltd., NABL Accredited Lab.

Climatological data recorded at the nearest IMD station. Micrometeorological data at project location was recorded using automatic weather station.

Apart from these, secondary data have been collected from Census Handbook, Soil Survey and Land Use Organization, District Industries Centre, Forest Department, Central Ground Water Authority etc. For secondary data collected from different sources, list of approved secondary sources is referred to validate the sources for secondary data.

The studies involved conducting field studies and analyzing various parameters that might be affected due to the industry and conducting socio-economic survey among the people.

During reconnaissance survey, the sampling locations were identified based on:

- Existing topography and meteorological conditions.
- Locations of water intake and waste disposal points.
- Location of human habitation and other sensitive areas present in the vicinity of the project location.
- Representative areas for baseline conditions.
- Accessibility for sampling

The scoping and the extent of data were formulated based on interdisciplinary team discussions, and professional judgment keeping in view of ToR issued by MoEF&CC.

The baseline studies started with reconnaissance survey and the project visits in the study area for fixing the monitoring locations for collection of the primary data.

Various Government and other organizations were approached for getting information for the secondary data. The various parameters surveyed and studied for the baseline study are discussed in the following components:

- Physical environment
- Air environment
- Noise environment
- Land environment
- Water environment
- Biological environment
- Socio-economic environment

3.4 ESTABLISHMENT OF BASELINE FOR VALUED ENVIRONMENTAL COMPONENTS, AS IDENTIFIED IN THE SCOPE

The scope of the study is as per ToR letter was issued by MoEF&CC vide File No. IA -J-11011/97/2023-IA -II(I) dated 15th March, 2023.

3.4.1 PHYSICAL ENVIRONMENT

3.4.1.1 Meteorological Data

Assessment of micro and macro meteorology is important from the point of view of understanding nature of environment in the study area. Climate has an important role in the build-up of pollution levels. The climate of the district varies from sub-tropical to sub-humid. Winter extends from December to February and summer extends from March to June while July to September are the rainy months. The average annual rainfall of the district is 1751 mm, out of which 83% occurs during June to Sept. Snow fall is received in the higher reaches of

Dhauladhar ranges. The minimum and maximum temperature at Dharamshala varies from 2.9°C in January to 32.9°C in May.

3.4.1.2 Methodology for Meteorological Data Collection

Assessment of micro and macro meteorology is important from the point of view of understanding nature of environment in the study area. Climate has an important role in build-up of pollution levels. The climatic condition of the study area may be classified as moderately or seasonally dry, tropical or temperate savanna climate with four seasons in a year. Winter is critical for air pollution build-up because of frequent calm conditions with temperature inversions resulting in poor atmospheric mixing, natural ventilation and high emission loads. The meteorological data were collected during the study period.

3.4.1.3 Climate

The climate of the district varies from sub-tropical to sub-humid. Winter extends from December to February and summer extends from March to June while July to September are the rainy months. The average annual rainfall of the district is 1751 mm, out of which 83% occurs during June to Sept. Snow fall is received in the higher reaches of Dhauladhar ranges.

3.4.1.4 Temperature

The temperatures are highest on average in June, at around 38°C. The lowest average temperatures in the year occur in January, when it is around 0 °C.

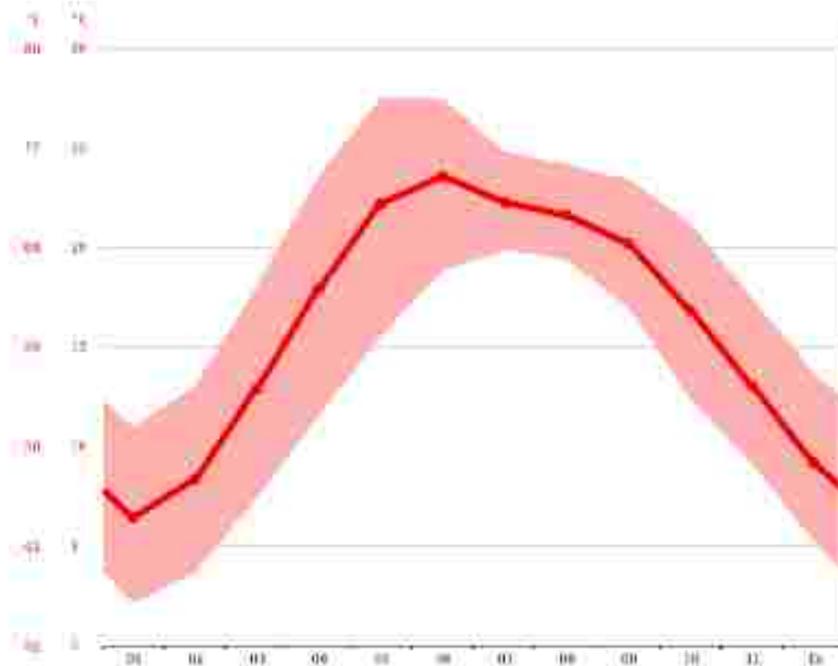


Fig. 3.1: Temperature Graph of Kangra

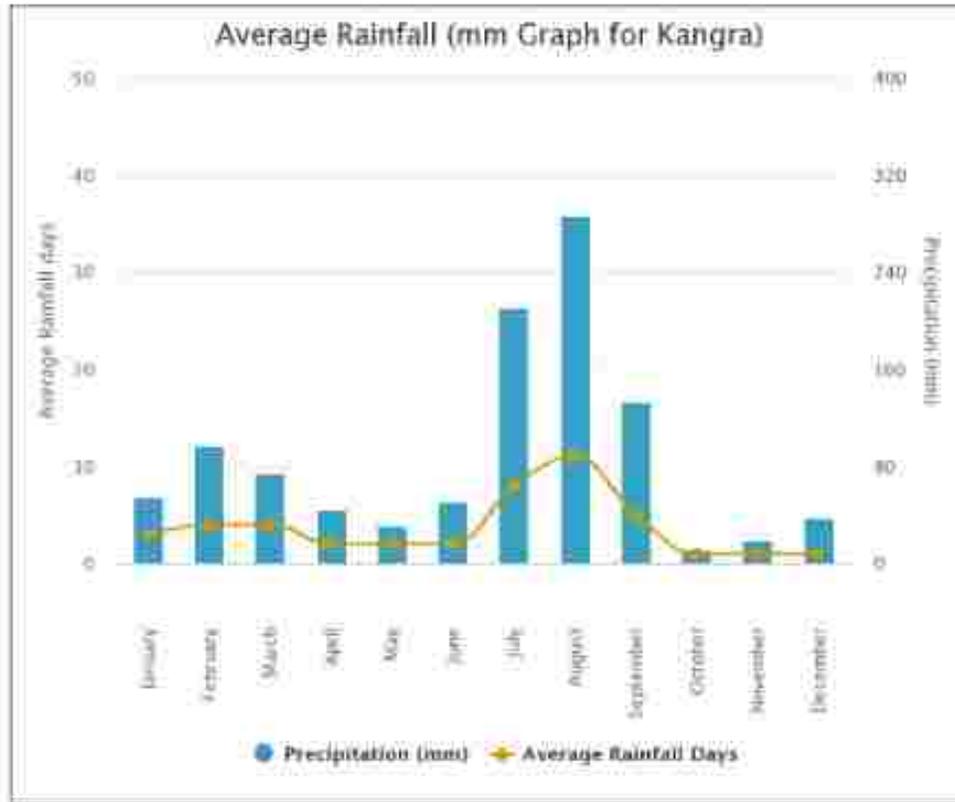
Table 3.1: Kangra Climate Data

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	11°C (51.8°F)	12.1°C (53.7°F)	17.8°C (34°F)	22.2°C (73.7°F)	27.8°C (81.7°F)	28.4°C (83.2°F)	29°C (73.3°F)	25.3°C (77.5°F)	24.2°C (75.4°F)	21.8°C (71.2°F)	17.5°C (63.5°F)	13.5°C (56.4°F)
Min. Temperature °C (°F)	6.6°C (43.8°F)	8.1°C (46.5°F)	11.7°C (53.1°F)	15.8°C (60.3°F)	20°C (67.8°F)	23°C (73.4°F)	23.5°C (74.2°F)	23°C (73.3°F)	20.8°C (69.2°F)	16.3°C (61.3°F)	13.5°C (56.3°F)	9.6°C (49.2°F)
Max. Temperature °C (°F)	15.8°C (60.3°F)	22.1°C (84.7°F)	22.4°C (74.1°F)	29.8°C (85.2°F)	33.8°C (91.3°F)	32.7°C (90.8°F)	31.7°C (89.1°F)	27.9°C (82.2°F)	23.2°C (73.8°F)	18°C (71.3°F)	13.9°C (71.5°F)	11.9°C (64.3°F)
Precipitation / Rainfall mm (in)	71 (3)	112 (4)	72 (2)	37 (1)	38 (0)	34 (2)	391 (14)	305 (12)	87 (3)	11 (0)	35 (0)	33 (1)
Humidity (%)	64%	63%	55%	43%	32%	52%	83%	85%	77%	60%	56%	53%
Rainy days (d)	8	7	6	4	3	7	13	14	9	1	1	3
avg. Sun hours (hours)	14	22	10.3	11.8	12.3	11.7	9.2	9.3	9.3	10.9	9.3	8.7

(Source: <https://en.climate-data.org/asia/india/himachal-pradesh/kangra-24787/#temperature-graph>)

3.4.1.5 Rainfall

The average annual rainfall of the district is 1751 mm, out of which 83% occurs during June to September.



(Source: <https://www.worldweatheronline.com/kangra-weather-averages/itimachal-pradesh/in.aspx>)

Fig. 3.2: Monthly average rainfall of district Kangra

3.4.1.6 Humidity

The month with the highest relative humidity is August (85.37 %). The month with the lowest relative humidity is May (39.74 percent).



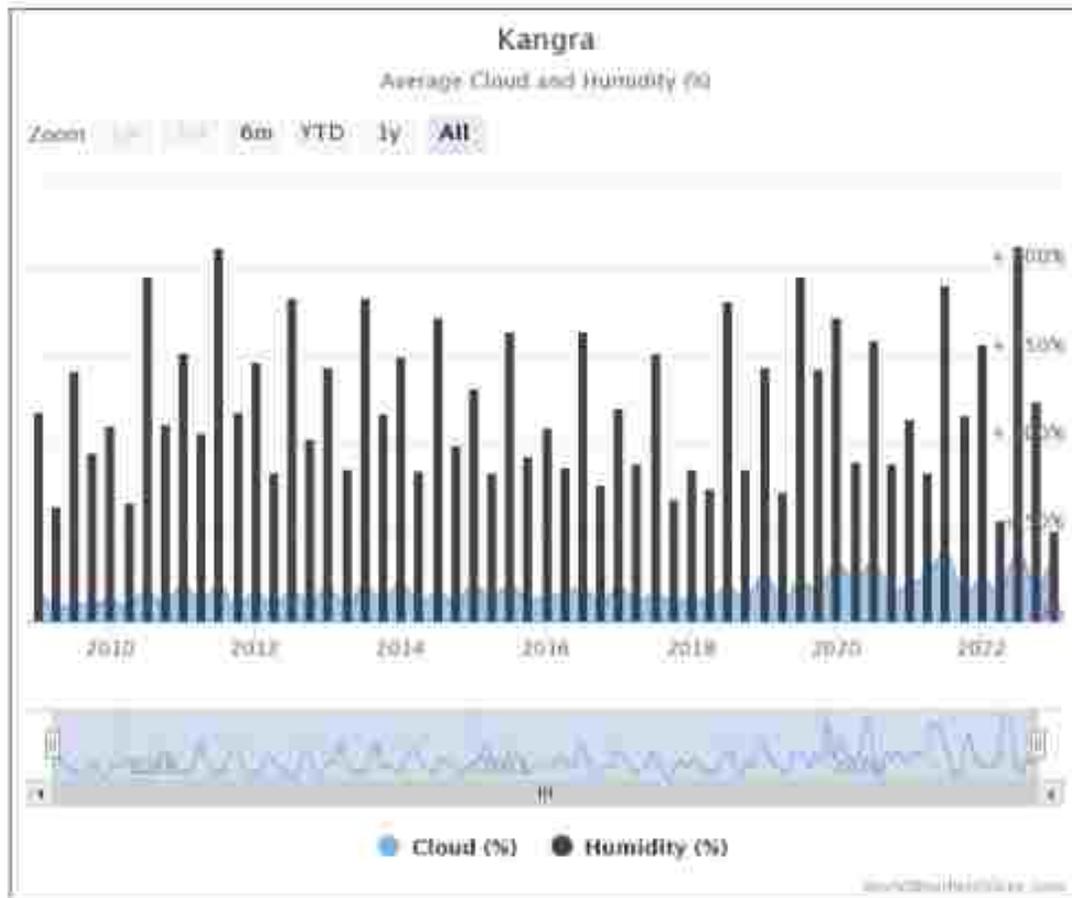


Fig. 3.3: Average Humidity for Kangra

3.4.1.7 Cloudiness

During monsoon season, skies are overcast with moderate to heavy clouds. During rest of the year, sky is mostly clear. It is lightly clouded occasionally during winter season.

3.4.1.8 Wind Speed & Direction

Wind speed and wind direction have a significant role in the dispersion of atmospheric pollutants and therefore, in the air quality of the area. Ground level concentrations for the pollutants are inversely proportional to the wind speed in the downwind direction, while in the upwind direction, no effect will be observed and in cross wind directions, partial effect due to the emission sources is observed.

Emissions from each activity vary from one another greatly with respect to characteristics and quantity of emissions, controlling factors.

The meteorological pre-processed data was used to determine its corresponding Wind Rose plot. The Wind rose shows the most pre-dominant wind direction and the emissions plume will be dispersed mainly in that direction. The meteorological data were recorded on continuous basis during study period at proposed site location. The percentage frequencies of occurrence of various wind speed classes in different directions were computed from recorded data on 24 hourly bases and presented in the form of Wind Rose plot (Figure 3.4). The wind rose diagram shows the predominant winds are mainly flowing from North West. Calm conditions are observed for 2.3% of the total time.

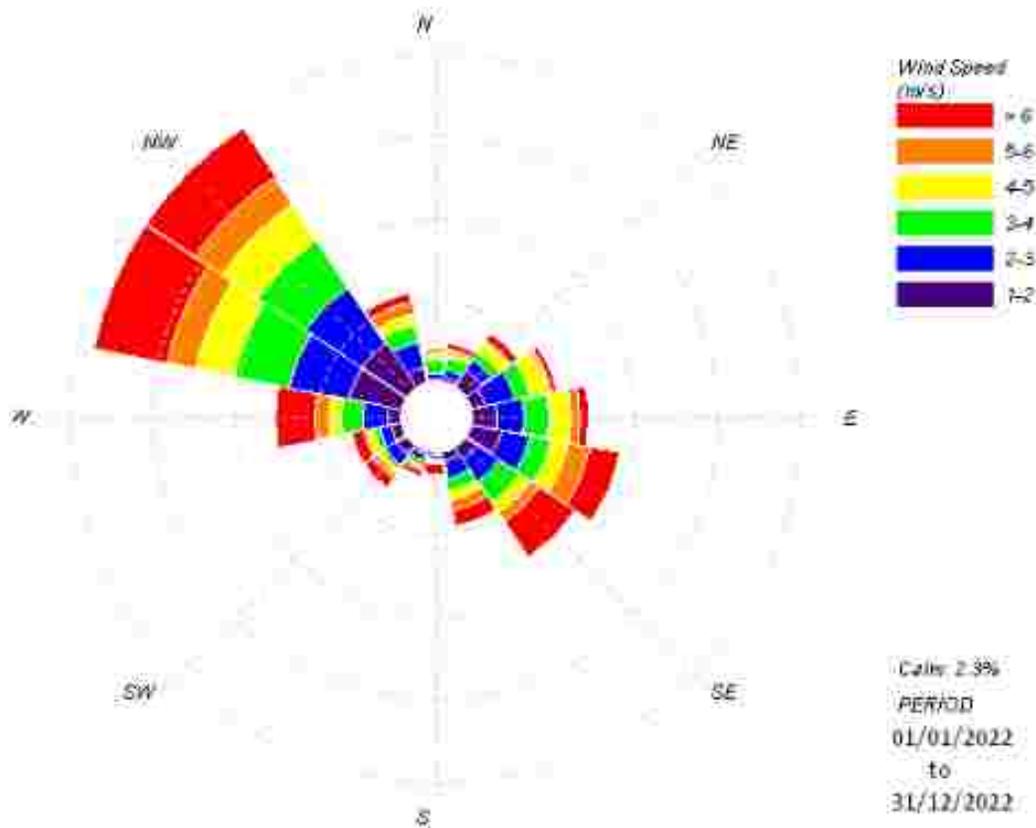


Fig. 3.4: Wind Rose Diagram at the project location

3.4.2 AIR ENVIRONMENT

The ambient air quality was monitored from October, 2022 to December, 2022 in 10 km study area of the project. This study forms the baseline information. The various sources of air pollution in the region are dust rising from unpaved roads, domestic fuel burning, vehicular traffic, agricultural activities, other industries etc.

The prime objective of baseline air quality monitoring is to assess the existing air quality of the area. This will also be useful in assessing the conformity to standards of the ambient air quality during the operations. The baseline status of the ambient air quality has been assessed through scientifically designed ambient air quality network.

The design of monitoring network in the air quality surveillance program has been based on the following considerations:

- Meteorological conditions
- Topography of the study area;
- Likely impact area.

3.4.2.1 Season & Period of Monitoring

The monitoring of environmental parameters has been conducted for the period of October, 2022 to December, 2022 at project location and 7 other locations within 10 km study area of project. The monitoring has been carried out in accordance with the guidelines issued by the Ministry of Environment, Forest & Climate Change, CPCB and HPPCB.

3.4.2.2 METHODOLOGY

AAQM Station shall be located in upwind, downwind and crosswind direction. Monitoring stations are selected as per the monitoring plan, which are verified at the site and located accordingly. Sampling is carried out as per the defined periodicity and for the parameters indicated in the ToR. Respirable dust samplers and fine particulate matter samplers were used for ambient air sampling. Samples were collected continuously from all the stations for 24 hours. Samples thus collected were analyzed for various pollutants. All efforts are made to collect photographs of monitoring locations while monitoring is in operation.

3.4.2.3 Sampling Frequency

Ambient air quality monitoring has been carried out with a frequency of two days per week at 8 locations during the study period. The baseline data of air environment is monitored for the below mentioned parameters as given in Table 3.2.

3.4.2.4 Parameters Monitored & Methods Used

Test methods for determining various Air Quality parameters are given below in Table 3.2.

Table 3.2 Test Methods for determining various Air Quality parameters

S. No.	Test Parameter	Test Method
1.	Particulate Matter (PM ₁₀)	IS:5182 (Part-23)
2.	Particulate Matter (PM _{2.5})	Lab SOP EL/SOP/AAQ/01, Issue No. 03, Jan 01
3.	Sulphur Dioxide (SO ₂)	IS:5182 (Part-2)
4.	Nitrogen Dioxide (NO ₂)	IS:5182 (Part-6)
5.	Ammonia (NH ₃)	Lab SOP EL/SOP/AAQ/02, Issue No. 03, Jan 01
6.	Ozone (O ₃)	IS:5182 (Part-9)
7.	Carbon Monoxide (CO)	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	IS:5182 (Part-22)
9.	Arsenic (As)	Lab SOP: EL/SOP/AAQ/04, Issue No.03, Jan 01
10.	Nickel (Ni)	Lab SOP EL/SOP/AAQ/04, Issue No.03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	IS:5182 (Part-12)
12.	Benzene (C ₆ H ₆)	IS:5182 (Part-11)

3.4.2.5 AMBIENT AIR QUALITY MONITORING

The baseline air quality was established by monitoring of major air pollutants like particulate matter (\leq PM₁₀ μ m), Fine Particulate Matter (\leq PM_{2.5} μ m), Sulfur dioxide, Nitrogen dioxide and Carbon monoxide at various locations in the study area. Samples were collected twice a week from all the stations continuously for 24 hours.

The baseline data for ambient air quality were collected from project site and 7 other locations within 10 km radius of the project by M/s Eco Paryavaran Laboratories & Consultants Pvt. Ltd. in the month of October 2022-December 2022. The sampling stations along with their distance

and direction from the project are detailed in **Table 3.3** and shown in **Fig. 3.5(a)**. Ambient air quality analysis data for various parameters are given in **Table 3.4**.

To study the existing ambient air quality, monitoring was done at project location by M/s Eco Paryavaran Laboratories & Consultants Pvt. Ltd., NABL Accredited and MoEF&CC approved. The observations made during the study period are presented under the forthcoming sub-sections.

Table 3.3: Ambient air monitoring stations

S. No.	Sample Code	Name of Village/ Location	Distance & Direction (km)	Wind Direction
1.	A1	Project Site	0	-
2.	A2	Village- Dadasiba	2.14 km; NW	UW
3.	A3	Village- Sham Nagar	1.58 km; NW	UW
4.	A4	Village- Behar	1.47 km; NE	CW
5.	A5	Village- Chaplah	2.01 km; SW	CW
6.	A6	Village- Badhal	2.03 km; W	DW
7.	A7	Village- Kandol	2.25 km; SE	DW
8.	A8	Village- Thor Nichli	3.63 km; SE	DW

(UW: Upwind, DW: Down Wind, CW: Cross Wind)



**Fig. 3.5(a): Location of ambient air monitoring stations in study area
(Marked on Toposheet No. H43E1; Not on scale)**

Photographic View of Ambient Air Quality Monitoring**Fig. 3.5 (b): Sampling photographs of ambient air monitoring****Table 3.4: Summary of Ambient Air Quality Results**

Station Code	Name of Station	Type of Result	Average	Min	Max	98 Percentile	SD
A1	Project Site	PM ₁₀ (µg/m ³)	46	42	49	49.26	100
		PM _{2.5} (µg/m ³)	24	20	28	27.79	60
		SO ₂ (µg/m ³)	7	5	9	8.96	80
		NO ₂ (µg/m ³)	18	15	20	20.38	80
		CO (mg/m ³)	0	0	1	0.56	04
		NH ₃ (µg/m ³)	<DL 6	<DL 6	<DL 6	<DL 6	400
A2	Village- Dadasiba	PM ₁₀ (µg/m ³)	45	41	48	48.29	100
		PM _{2.5} (µg/m ³)	24	21	28	27.7	60

Station Code	Name of Station	Type of Result	Average	Min	Max	98 Percentile	SD
		SO ₂ (µg/m ³)	7	5	9	8.7	80
		NO ₂ (µg/m ³)	18	16	20	19.64	80
		CO (mg/m ³)	0	0	1	0.55	04
		NH ₃ (µg/m ³)	<DL 6	<DL 6	<DL 6	<DL 6	400
A3	Village- Sham Nagar	PM ₁₀ (µg/m ³)	45	40	50	49.13	100
		PM _{2.5} (µg/m ³)	24	19	28	27.72	60
		SO ₂ (µg/m ³)	7	5	9	8.53	80
		NO ₂ (µg/m ³)	18	15	20	19.61	80
		CO (mg/m ³)	0	0	1	0.53	04
		NH ₃ (µg/m ³)	<DL 6	<DL 6	<DL 6	<DL 6	400
A4	Village- Behar	PM ₁₀ (µg/m ³)	40	33	48	46.51	100
		PM _{2.5} (µg/m ³)	21	17	26	24.83	60
		SO ₂ (µg/m ³)	7	6	9	8.57	80
		NO ₂ (µg/m ³)	18	14	21	20.6	80
		CO (mg/m ³)	0	0	1	0.55	04
		NH ₃ (µg/m ³)	<DL 6	<DL 6	<DL 6	<DL 6	400
A5	Village- Chaplah	PM ₁₀ (µg/m ³)	44	41	49	48.21	100
		PM _{2.5} (µg/m ³)	23	20	27	26.53	60
		SO ₂ (µg/m ³)	7	5	9	8.67	80
		NO ₂ (µg/m ³)	17	15	19	18.87	80
		CO (mg/m ³)	0	0	1	0.53	04

Station Code	Name of Station	Type of Result	Average	Min	Max	98 Percentile	SD
		NH ₃ (µg/m ³)	<DL 6	<DL 6	<DL 6	<DL 6	400
A6	Village- Badhal	PM ₁₀ (µg/m ³)	44	38	50	49.76	100
		PM _{2.5} (µg/m ³)	23	19	28	27.46	60
		SO ₂ (µg/m ³)	7	5	8	8.04	80
		NO ₂ (µg/m ³)	20	15	23	22.6	80
		CO (mg/m ³)	0	0	1	0.56	04
		NH ₃ (µg/m ³)	<DL 6	<DL 6	<DL 6	<DL 6	400
A7	Village- Kandol	PM ₁₀ (µg/m ³)	45	41	51	50.34	100
		PM _{2.5} (µg/m ³)	24	20	28	28.32	60
		SO ₂ (µg/m ³)	7	5	8	8.2	80
		NO ₂ (µg/m ³)	19	15	21	21.28	80
		CO (mg/m ³)	0	0	1	0.55	04
		NH ₃ (µg/m ³)	<DL 6	<DL 6	<DL 6	<DL 6	400
A8	Village- Thor Nichli	PM ₁₀ (µg/m ³)	42	35	49	48.69	100
		PM _{2.5} (µg/m ³)	22	17	28	27.68	60
		SO ₂ (µg/m ³)	8	6	10	9.89	80
		NO ₂ (µg/m ³)	18	14	20	20.21	80
		CO (mg/m ³)	0	0	1	0.56	04
		NH ₃ (µg/m ³)	<DL 6	<DL 6	<DL 6	<DL 6	400

3.4.2.6 Interpretation of Ambient Air Quality

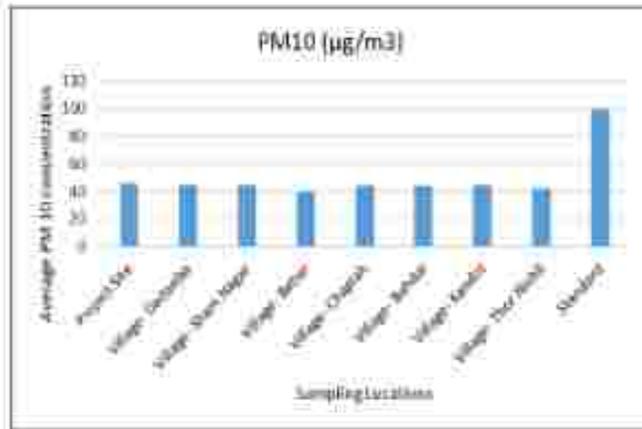


Fig. 3.6: Statistical analysis of Ambient Air Quality Status w.r.t. PM₁₀

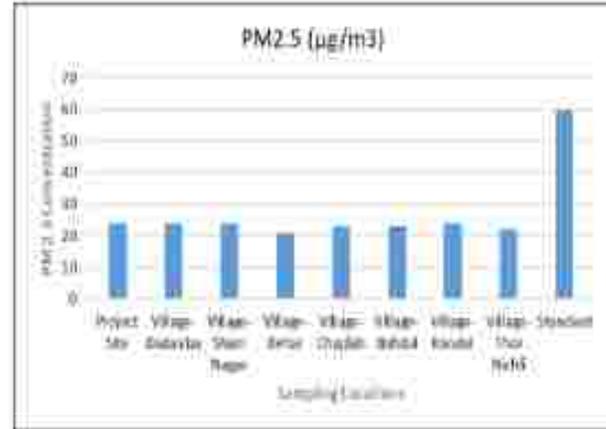


Fig. 3.7: Statistical analysis of ambient Air Quality Status w.r.t. PM_{2.5}

Particulate Matter (PM₁₀)

As it is evident from the above **Figure 3.6**, PM₁₀ concentration observed in the study area during October 2022-December 2022 is minimum at Behar i.e. 33 µg/m³, maximum at Kandol i.e. 51 µg/m³. This indicates that the concentration of particulate matter in the study area is well below against 24 hours average permissible limits of 100 µg/m³. During operational phase the additional emission loads due to DG set and Vehicular and other fugitive emissions) is to be quantified and associated environmental impacts are to be identified based on air quality modeling and prediction of ground level concentrations (GLCs) which has been explored in **Chapter 4**.

Fine Particulate Matter (PM_{2.5})

Above **Figure 3.7** gives the PM_{2.5} levels concentration at different monitoring stations. As it is evident from above figure, PM_{2.5} concentration observed in the study area during October 2022-December 2022 is minimum at Behar and Thor Nichli i.e. 17 µg/m³ and maximum i.e. 28 µg/m³ at various Locations. At project location, average PM_{2.5} level is 24 µg/m³ against 24 hours average permissible limits of 60 µg/m³ which indicates good air quality and during operational phase the air quality will not deteriorate much.

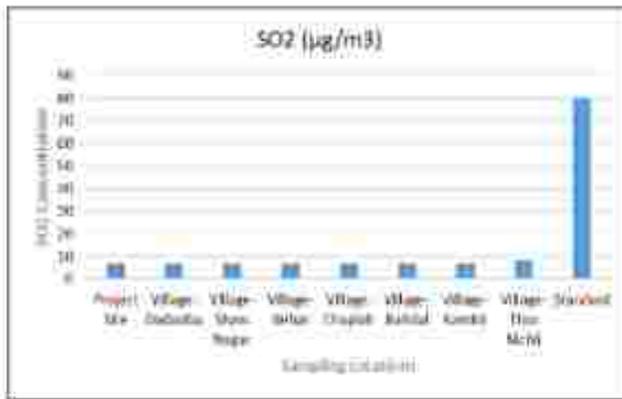


Fig. 3.8: Statistical analysis of ambient Air Quality Status w.r.t. SO₂

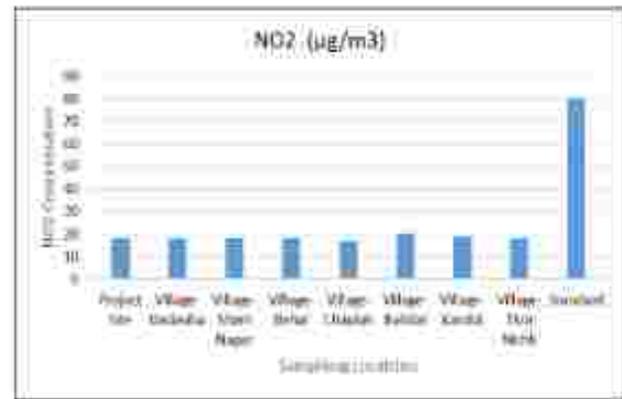


Fig. 3.9: Statistical analysis of ambient Air Quality Status w.r.t. NO₂

Sulphur Dioxide (SO₂)

As it is evident from the above **figure 3.8**, average SO₂ levels at various monitoring stations ranged from 7 to 8 µg/m³ during the study period of October 2022-December 2022 in the study area. The average SO₂ levels at project site is 7 µg/m³. It would be seen that the SO₂ levels are quite low in the area. SO₂ levels are quite low in the study area against 24 hours average permissible limits of 80µg/m³ and the air quality in respect to SO₂ is good and comfortable.

Nitrogen Dioxide (NO_x)

From above **figure 3.9**, as it is evident that NO_x concentration in the study area varied from 15 to 23 µg/m³. The average NO₂ levels at project site is 18 µg/m³ during the study period of October 2022-December 2022 in the study area. The average value around the project site remained as 18 µg/m³ during this period. It would be seen that the NO₂ levels are quite low in the study area in respect to 24 hours average permissible limits of 80µg/m³. The situation in the study area as far as NO₂ concentration as concerned is good and comfortable.

Ammonia (NH₃)

It is evident that NH₃ concentration in the study area <6 µg/m³. The average NH₃ levels at project site is also <6 µg/m³ during the study period of October 2022-December 2022 in the

study area. The average value around the project site remained below $6 \mu\text{g}/\text{m}^3$ during this period. It would be seen that the NH_3 levels are quite low in the study area in respect to 24 hours average permissible limits of $80 \mu\text{g}/\text{m}^3$. The situation in the study area as far as NH_3 concentration as concerned is good and comfortable.

INTERPRETATION OF AMBIENT AIR QUALITY RESULTS

The Ambient Air Quality Monitoring in the study area shows that:

- 1) Mass levels of particulate dust as PM_{10} & $\text{PM}_{2.5}$ were less than 24 hours average NAAQ standards of $100 \mu\text{g}/\text{m}^3$ and $60 \mu\text{g}/\text{m}^3$ respectively. This indicates good and comfortable air quality.
- 2) The mass levels of SO_2 and NO_2 are much below the desired limits of $80 \mu\text{g}/\text{m}^3$ indicates good air quality.
- 3) Mass levels CO were reported below the desired limits whereas other gases such as ammonia (NH_3) and ozone (O_3) were reported as safer zone in respect to their NAAQ standards.
- 4) Mass levels of particulate metals as Lead (Pb), Arsenic (As) and Nickel (Ni) are reported as traces or below detection levels which indicates safe environment.
- 5) Mass levels of hydrocarbons as Benzene, Benzo(a)pyrene (BaP) were also reported as below detection levels which indicates safe environment with no health hazards.

3.4.3 NOISE ENVIRONMENT

A total of 8 locations within the study area of project location which include 3 locations within 2 km radius of the project as well as 5 locations within project location were selected for measurement of ambient noise levels. The results of such monitoring have been gathered in **Table 3.7**. Day and night time Leq values have then been computed from the hourly Leq values. Day time & Night time Leq have been computed from the hourly Leq values between 6 a.m. to 10 p.m. & between 10 p.m. to 6 a.m. respectively. Google Earth image showing Ambient noise monitoring location are shown in **Fig. 3.10**.

The acoustical environment varies dynamically in magnitude and character throughout most communities. The noise level variation can be temporal, spectral and spatial. The residential noise level is that level below which the ambient noise does not seem to dropdown during the

given interval of time and is generally characterized by unidentified sources. Ambient noise level is characterized by significant variations above a base or a residential noise level. The maximum impact of noise is felt in urban areas which are mostly due to the commercial activities and vehicular movement during peak hours of the day.

From environment point of view, higher noise levels may affect health of human beings and disturbance to animals if they are close to the noise generating sources. Measurement of noise levels in the study area at several locations has been carried out to determine the existing noise levels to subsequently superimpose increment in noise levels.

3.4.3.1 METHODOLOGY

Sound Level Meters (SLM) with data logger is used for data collection. The calibrations are checked before start of monitoring. Day and night reading are collected by installing SLM at 1.5 to 3.0 m height in an open area or ≥ 250 m away from any source or obstruction of noise. Monitoring locations are decided, considering Residential, Commercial Industrial, and Sensitive areas as per area classification by CPCB 2000. Monitoring of the noise sources/ activities is observed and recorded for abnormal data and evaluation of additional sources. Monitoring and sample handling (including sample preservation and transportation) is carried out as per national international standard methods as per CPCB Noise Rules (2000), IS: 9989 -1981 & IS: 4758-1968

3.4.3.2 Ambient Standards in Respect of Noise

Ministry of Environment, Forest & Climate Change has notified the ambient standards in respect of noise. Table 3.5 gives these standards in respect of noise.

Table 3.5: Ambient Standards in respect of Noise

Area Code	Category of Area	Leq. Limits in dB(A)	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned in between 6:00 a.m and 10:00 p.m.
2. Night time is reckoned is between 10:00 p.m and 6.00 a.m.
3. Silence Zone is defined as areas upto 100 m around such premises as hospitals, educational institutions and Courts. The Silence Zones are to be declared by the competent authority.

The day-time (Ld) and night-time (Ln) noise levels within project location as well as at different locations are given in **Table 3.6** computed from hourly Leq values during day-time and night-time. Detailed test reports depicting noise results are enclosed as **Annexure 10**.



Fig. 3.10 (a): Location of noise monitoring stations

Table 3.6: Noise Monitoring Stations

S. No.	Sample Code	Name of Village/ Location	Distance & Direction
1.	N1	Within the project Boundary	0
2.	N2		
3.	N3		
4.	N4		
5.	N5		
6.	N6	Govt. Senior Secondary School, Village Chanour	1.42 km; SE
7.	N7	Radha Swami Satsang, Village Chanour	0.61 km; SW
8.	N8	Shiv Mandir, Ram Nagar	1.41 km; NE

Photographic View of Ambient Noise Level Monitoring



Fig. 3.10(b): Sampling photographs of Noise Monitoring

3.4.3.3 Noise Results

Table 3.7: Noise level results dB(A) in & around project area

S. No.	Name of Village/ Location	Sample Code	Day Time (Hourly Equivalent) Leq dB(A)	Night Time (Hourly Equivalent) Leq dB(A)
1.	Within the project Boundary	N1	48.5	37.5
2.		N2	47.2	36.9
3.		N3	47.1	36.6
4.		N4	46.8	35.8
5.		N5	45.1	37.8
6.	Govt. Senior Secondary School, Village Chanour	N6	43.2	38.1
7.	Radha Swami Satsang, Village Chanour	N7	44.8	37.1
8.	Shiv Mandir, Ram Nagar	N8	43.7	37.3

Interpretation of Noise Results:

The statistical representation of noise monitoring around the project site and at the project site is given below in **Figure 3.11**.

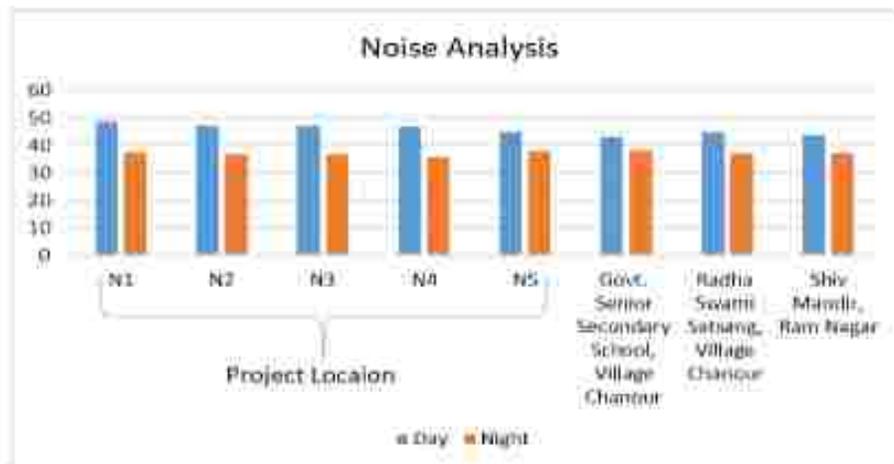


Fig. 3.11: Statistical Representation of Noise Results

Ambient noise levels were measured at 5 locations within the project location and 3 locations outside the project site within the 2 km radius of project. Noise levels varied from 43.2 dB(A) and 48.5 dB(A) during the day time and were 35.8 dB(A) and 38.1 dB(A) during night time in the study area. The obtained noise levels are well within prescribed limits for industrial area.

3.4.4 LAND ENVIRONMENT

3.4.4.1 Landuse & Land cover

3.4.4.1.1 Methodology for Land Use Land Cover Mapping

The land use and land cover (LULC) map have been prepared by adopting the interpretation techniques of the image in conjunction with collateral data. Image classification was done by using visual interpretation techniques and digital classification using Arc GIS 9.3.1 image processing software. LANDSAT (IRS, NRSC LISS-III) image were acquired and used to evaluate LULC changes. The image processing software is used for preprocessing, rectification and classifying the satellite data for preparation of land use land cover map for assessing and monitoring the temporal changes in land use land cover and land developmental activities.

3.4.4.1.2 Ground data

Ground data is essential to verify and increase the accuracy of the interpreted classes and also to minimize the field work.

3.4.4.1.3 Data analysis

For analysis and interpretation of satellite data, the study can be divided into three parts:

- I. Preliminary work
- II. Field work
- III. Post field work

3.4.4.1.4 Outcome

Land use and land cover have a direct relationship with environmental characteristics and processes, including the productivity of the land, species diversity, climate, biogeochemistry and the hydrologic cycle. GIS and Remote Sensing are gradually becoming an integrated technology that is being widely used in various applications. These two technologies are complementary, as they are simply variants of the digital spatial data. They have become inextricably linked in many application fields. The spatial display techniques for GIS and Remote Sensing information has greatly advanced within the past two decades. Technological advances in image processing and visualization techniques have developed display and interpretation mechanisms for the analysis of all forms and sources of geographical information.

3.4.4.1.5 Study Area Land use & Land Cover Classification System

As per the mandatory requirements, the mapping of land use and land cover of the area falling within the 10 km radius of study area is to be undertaken with the help of Topographical data, Satellite data and Field studies.

The land use and land cover (LULC) map has been prepared by adopting the interpretation techniques of the image in conjunction with collateral data such as Survey of India topographical maps, census records, LANDSAT Imagery and ground truth. Land use map is shown in **Fig. 3.12**.

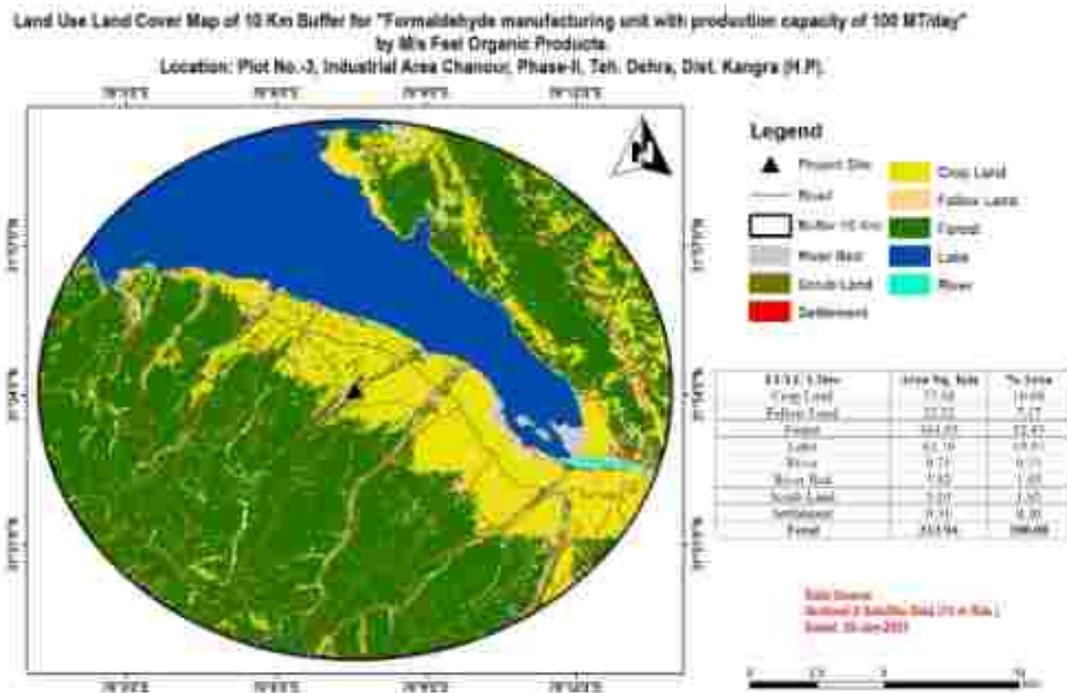


Fig. 3.12: Land use map of the project area within 10 km of the project location

Table 3.8: Land use distribution within 10 km of project

S. No.	Land Use/Land Cover	Area in sq. km.	%
1.	Crop land	52.10	16.60%
2.	Fallow land	22.52	7.17%
3.	Forest land	164.59	52.43%
4.	Lake	62.70	19.97%
5.	River	0.71	0.23%
6.	River bed	5.82	1.85%
7.	Scrub land	5.19	1.65%
8.	Settlement	0.31	0.10%
	Total	313.94	100

The study area comprises of crop land of about 52.10 sq.km. (16.60%). Fallow land of about 22.52 sq.km. (7.17%). Forest land of approximately 164.59 sq.km. (52.43%). Lake of 62.70 sq.km. (19.97%). River of about 0.71 sq.km. (0.23%). River bed of 5.82 sq.km. (1.85%). Scrub

land of about 5.19 sq.km. (1.65%) and settlement in the study area cover an area of 0.31 sq.km (0.10%). The land cover pattern and the respective coverage are given in **Table 3.8** above.

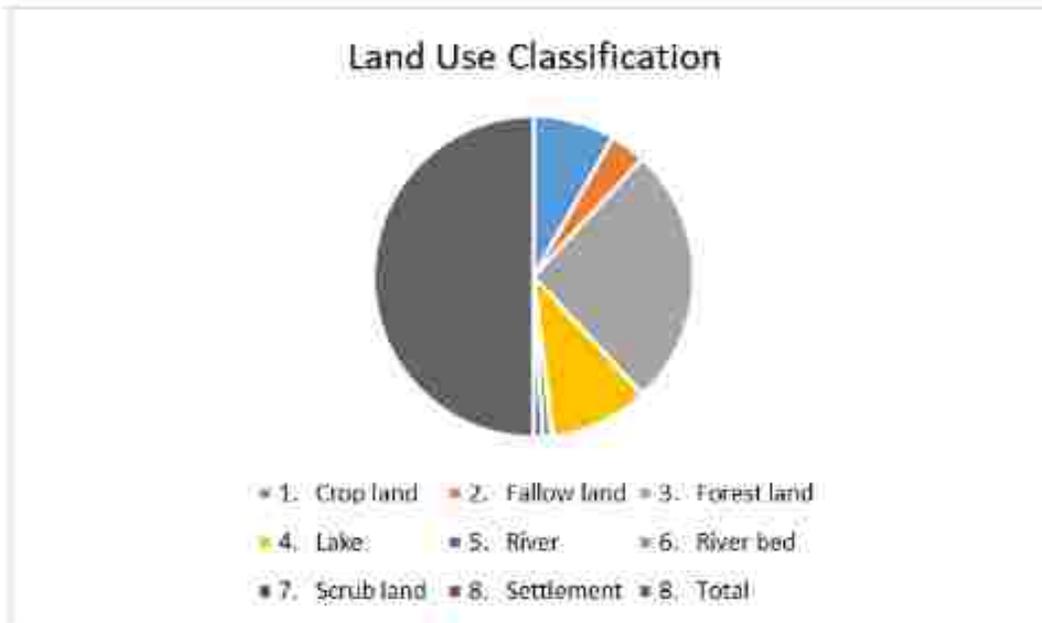


Fig. 3.13: Pie-chart showing Land use of the study area

3.4.4.1.6 List of Industries

No other industry is located within 10 km radius of the study area.

3.4.4.2 Geomorphology & Soil

Kangra district has a mountainous terrain with highly undulating landforms. It is primarily a hilly district, with altitudes ranging from 350 m amsl to 4880 m amsl in the hills of Dauladhar. The district has a maximum length of about 150 km from Baijnath block to Indora block in east-west direction. It extends to a distance of about 100 km from Rait to Pragpur block in the north-south direction. The entire territory is mountainous with the exception of the erstwhile Nurpur tehsil which accounts for roughly 15% of the area of the district. Deep valleys lying between ranges of varying elevations characterize the mountainous portion, which comprises the bulk of the territory. High hills cover almost 60% of the district area. Attitudinally, the district has been divided into the following zones:

- Low hills and valley areas up to an elevation of about 900 meters a.m.s.l. This portion accounts for about 49.0 per cent of the total area in the district.
- Mid hills extending from 900 meters to 1,500 meters a.m.s.l. This is nearly 16.0 percent of the district area.
- High hills rising from about 1,500 meters to 5500 meters a.m.s.l. account for the remaining 35.0 per cent of the entire area.

The population is Sparse. Agriculture is rain based and susceptible to droughts. The Economy of Kangra District consists mostly of agriculture and farming. Major crops cultivated in the district are wheat, rice, maize, pulses, etc. Tea cultivation plays a vital in the economy. Index Map of Kangra District is given in Fig. 3.14



Fig. 3.14 Index Map of District Kangra

3.4.4.3 Soil Quality

The information on soil has been collected from various secondary sources and also through primary soil sampling analysis of which is described in this section. For studying the soil profile of the region, soil samples were collected from 8 locations in the study area of our nearby project location as well as from project location to assess the existing soil conditions within the

study area representing various land uses. The sampling locations have been finalized with the following objectives:

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

3.4.4.3.1 METHODOLOGY FOR SOIL SAMPLING

The sampling locations are selected based on input source. The soil sample is collected from various depths of 30 cm, 60 cm & 90 cm from nearby agriculture land, waste disposal areas or likely impacted areas as per described in Lab SOP. Monitoring and sample handling (including sample preservation and transportation) is carried out as per national/ international standard methods as Soil/Sludge quality monitoring (IS: 2720, APHA & ICAR/IARI guidelines). The interpretation of data is being done with respect to standards and norms prescribed by recognized bodies as well as statistical analysis of observed values/data where required.

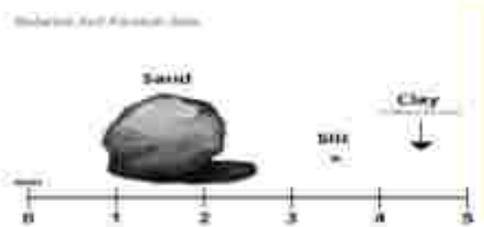
3.4.4.4 Physical Characteristics

Soil is generally considered as the upper layer of the earth that is dug or ploughed, especially the loose material in which plants grow. It is generally unconsolidated material composed of soil particles produced by disintegration of rocks. The void spaces between the particles may contain air, water or both. Physical characteristics of soil influence its use and behavior towards plants growth. The plant support root penetration, drainage, aeration, retention of moisture & plant nutrients is linked with the physical condition of soils. Normally following physical parameters are important for determining quality of soil:

(i) Soil Texture

Soil texture determined by percentage of sand, silt and clay is the important soil characteristic influencing soil quality. Sand particles are relatively large, silt particles are medium-sized and clay particles are very tiny in size. Clay and silt soil holds more water and plant nutrients than the sand. Soil is classified as four major textural classes: 1) sand, 2) silt, 3) clay and 4) loam based on the proportion of particle sizes. Sand varies from 65% to 71% with average 68%

indicates soil texture as sandy loam.



(ii) Porosity

Volume of soil mass that is not occupied by soil particles and usually occupied by air & water are known as pore space. The plant roots grow & exist in the pore spaces. Porosity, therefore, refers to that percentage of soil volume which is occupied by pore spaces. Porosity of soil in the study area varies from 38% to 42% with average 40%.

(iii) Bulk Density

The bulk density weight of a unit of volume of soil inclusive of pore spaces is called bulk density. Average bulk density of soil is 1.39 gm/cc in the study areas as low indicates favorable physical conditions.

(iv) Water holding capacity

Water holding capacity is the amount of water retained by soil to make available for crops which is determined by soil texture and available pore spaces in soil. Water holding capacity of soil in the study area varies from 24% to 27% with average of 24.8%. Clay and silty soil tend to have higher water holding capacity whereas sandy soils have lower water holding capacity.

(v) Soil fertility

Soil fertility is the ability of a soil to provide the nutrients needed by crop plants to grow.

3.4.4.5 Chemical Characteristics

Locations of soil monitoring stations are shown in Fig. 3.15. Chemical characteristics of soil observed in the study area are given in Table 3.10. Detailed test reports depicting soil results are enclosed as Annexure 9. pH varied from 7.49 to 7.84 & alkaline in nature.



Fig 3.15: Location of Soil Monitoring Stations
(Marked on Toposheet No. H43E1; Not on scale)

Table 3.9: Details of Soil Sample Monitoring Stations

S. No.	Sample Code	Name of Village/ Location	Distance & Direction (km)
1.	S1	Project Site	0
2.	S2	Village- Dadasiba	2.14 km; NW
3.	S3	Village- Sham Nagar	1.58 km; NW
4.	S4	Village- Behar	1.47 km; NE
5.	S5	Village- Chaplah	2.01 km; SW
6.	S6	Village- Badhal	2.03 km; W
7.	S7	Village- Kandol	2.25 km; SE
8.	S8	Village- Thor Nichli	3.63 km; SE

Photographic View of Soil Monitoring



Fig. 3.15 (b): Sampling photographs of soil monitoring

Table 3.10: Results of soil samples

Parameter	Units	S1	S2	S3	S4	S5	S6	S7	S8
pH	-	7.84	7.49	7.58	7.79	7.62	7.63	7.82	7.83
Conductivity	mmhos/cm	0.342	0.272	0.324	0.302	0.288	0.327	0.293	0.341
Moisture Content	%	8.6	7.5	9.4	8.4	7.5	7.4	8.4	8.7
Organic Matter	%	1.32	1.42	1.35	1.39	1.15	1.34	1.40	1.47
Texture	-	Sandy Loam							
Bulk Density	gm/cc	1.37	1.39	1.34	1.33	1.40	1.47	1.45	1.42
Available Sodium	mg/kg	143	169	163	195	146	176	165	179
Available Potassium	mg/kg	59	61	76	60	69	81	64	69
Water Holding Capacity	%	25	21	27	27	24	24	24	27
Porosity	%	39	38	39	41	42	39	43	77
Sand	%	71	69	70	66	66	65	68	69
Silt	%	17	16	17	19	18	18	15	17
Permiability	cm/hr.	1.41	1.36	1.37	1.39	1.37	1.37	1.35	1.40
Cation Exchange Capacity	meq/100gm	0.68	0.67	0.74	0.71	0.74	0.70	0.54	0.83
Sodium Absorption Ratio	meq/L	1.24	1.25	1.52	1.51	1.29	1.39	1.28	1.38

3.4.4.6 Interpretation of Soil Characteristics

- **Soil Texture:** The soil textures refer to proportion of mineral composition of soil i.e. sand, clay and silt present in the soil sample. The observed soil texture is Sandy Loam.
- **Soil pH:** Soil pH is an important soil property, which affects the availability of several plant nutrients. It is a measure of acidity and alkalinity and reflects the status of base saturation. It measures the -ve logarithm of hydrogen ions activity of soil solution and defines the soil acidity and alkalinity. The pH of soil sample at project site is 7.84, thereby indicating the soils are neutral in nature.
- **Organic Matter:** The effect of soil organic matter on soil properties is well recognized. Soil organic matter plays a vital role in supplying plant nutrients, cation exchange capacity, improving soil aggregation and hence, water retention and soil biological activity. The organic matter content within the study area is 1.32% in the soil sample.
- **Bulk Density:** Soil bulk density and porosity (the number of pore spaces) reflects the size, shape and arrangement of particles and voids (soil structure). Both BD and porosity give a good indication of the suitability for root growth and soil permeability and are vitally important for the soil-plant-atmosphere system. Soils with a bulk density higher than 1.6 g/cm³ tend to provide medium support to root growth. Thus, it is generally desirable to have soil with a low BD (<1.5g/cm³) for optimum movement of air and water through the soil. Bulk density is 1.37 gm/cc at project site.
- **Potassium:** Potassium is an activator of various enzymes responsible for plant processes like energy metabolism, starch synthesis, nitrate reduction and sugar degradation. It is extremely mobile in plant and help to regulate opening and closing of stomata in the leaves and uptake of water by root cells. It is important in grain formation and tuber development and encourages crop resistance for certain fungal and bacterial diseases. Average available potassium content in the soil within the study area is 67.3 mg/kg, thereby indicating medium in potassium content in the area.
- **Permeability:** Soil permeability is the property of the soil to transmit water and air. Usually, the finer the soil texture, the slower the permeability. Since, the permeability of soil sample is 1.41cm/hr at the project site thus as per the classification of soil

permeability, it is categories as moderate.

- **Cation Exchange Capacity:** Cation exchange capacity (CEC) is the total capacity of a soil to hold exchangeable cations. CEC is an inherent soil characteristic and is difficult to alter significantly. It influences the soil's ability to hold onto essential nutrients and provides a buffer against soil acidification. Soils with a higher clay fraction tend to have a higher CEC. Organic matter has a very high CEC. Sandy soils rely heavily on the high CEC of organic matter for the retention of nutrients in the topsoil. Thus, CEC at project site is 0.68 meq/100gm and average CEC within study area is 0.70 meq/100gm.

3.4.5 WATER ENVIRONMENT

3.4.5.1 Hydrogeology

The rock formations occupying the district range from pre-Cambrian to Quaternary Period. The Hydrogeological frame work of the district is essentially controlled by the geological setting, distribution of rainfall, snow fall, which facilitates circulation and movement of water through inter-connected primary and secondary porosity of the rocks constituting the aquifers. Based on the geological diversities and relative ground water potentialities of different geological formations, the district can broadly be divided into two Hydrogeological units

- Fissured formations
- Porous formations

Fissured Formations:

Fissured formations comprise hard rocks belonging to Jutogh, Shali limestones, Chails, Chandpurs, Kangra-Darla volcanic, Subathus, Dharamsala and Siwaliks. These formations consist of schist, quartzite, slates, phyllites, limestones, granites, gneisses, sandstones, conglomerates and shales. These rocks are generally massive and consolidated, devoid of primary porosity and permeability's. Secondary porosity and permeability has developed due to the tectonic activities along the fractured joints and fault zones. Weathered zone rarely form an aquifer because of less thickness of the weathered mantle. In this hard rock terrain ground water occurs either, along structurally weak zones, viz. fracture zones, faults, joints or along the contacts of different formations. The ground water in such areas is discharged through the springs in the topographically favourable areas. The thrust zones (Main boundary Fault Palampur

Precipitation is the principal source of Ground water recharge to aquifer systems in the district. The return flow from the irrigation systems like tube well irrigation, surface water lift irrigation, kuhl irrigation are the main sources of ground water recharge. Inflow seepage from khads, rivers, and water reservoirs (pong dam) also contribute to the ground water reserves. In the district, all the major irrigation and drinking water supplies depend on the tube wells, and dug wells, in addition to various water supply schemes based on rivers / nallas. In pre-monsoon (May 2012), the depth to water level range was from 1.56 to 15.44 m bgl and in post-monsoon (November 2012), from 0.48 to 12.30 m bgl. Seasonal fluctuations (pre & post 2012) in the district ranges from -6.78 to 3.08 meters.

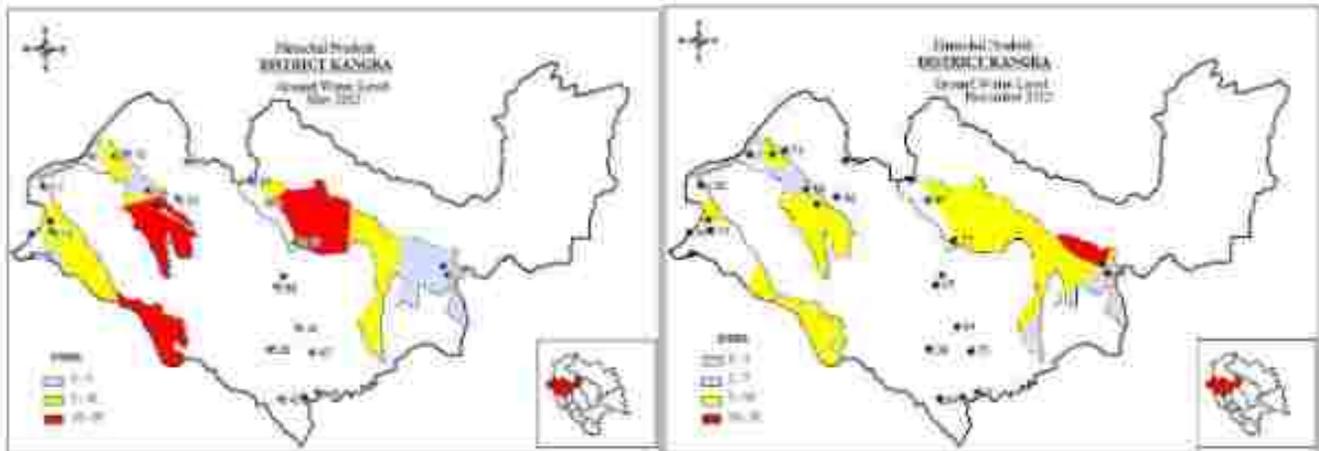


Fig. 3.16(a) Depth of water level in Pre-Monsoon and Post Monsoon season

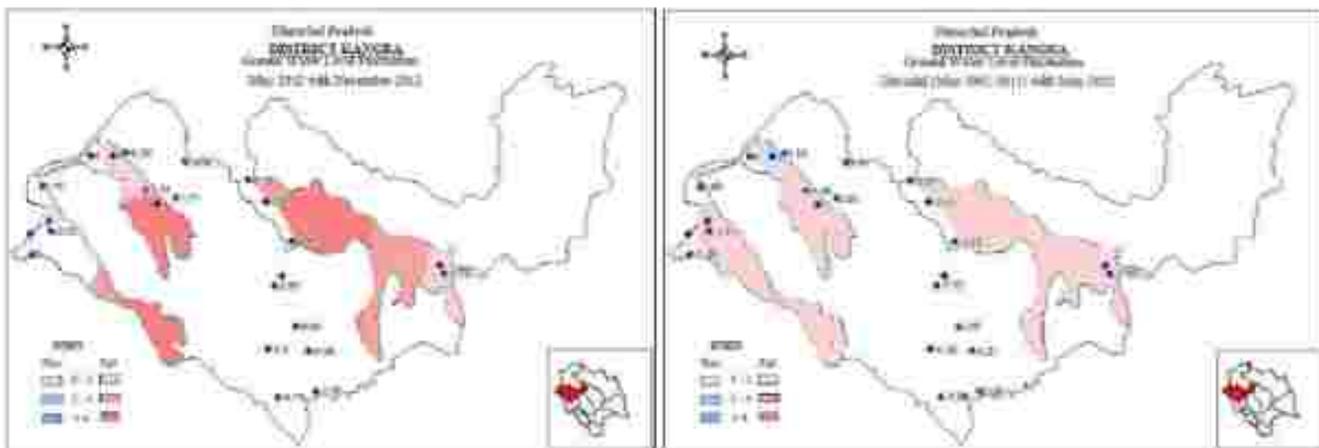


Fig. 3.16(b): Seasonal Water Level Fluctuation Map

3.4.5.2 Ground Water Resources

Rainfall is the major source of groundwater recharge, apart from the influent seepage from the rivers, irrigated fields and inflow from upland areas, whereas discharge from ground water mainly takes place from wells and tubewells, effluent seepages of ground water in the form of springs and base flow in streams etc. Ground water resources and irrigation potential for Indaura and Nurpur valley in Kangra district, have been computed as per the GEC-97 methodology and the resources for the year 2011 of Indaura Valley are Annual Ground Water Availability-10,520.18 Ham, Annual Ground Water Draft-5,263.72 Ham and Stage of Ground Water Development 50.03 % and Nurpur Valley are Annual Ground Water Availability 7,639.43 Ham, Annual Ground Water Draft 3,021.53 Ham and Stage of Ground Water Development 39.55 %. The stage of ground water development in Indaura and Nurpur valley in Kangra district is 50.03% & 39.55 % respectively, and falls under "Safe" category. There is thus a scope for further ground water development.

3.4.5.3 Status of Ground Water Development

Precipitation is the principal source of Ground water recharge to aquifer systems in the district. The return flow from the irrigation systems like tube well irrigation, surface water lift irrigation, kuhl irrigation are the main sources of ground water recharge. Inflow seepage from khads, rivers, and water reservoirs (pong dam) also contribute to the ground water reserves. In the district, all the major irrigation and drinking water supplies depend on the tube wells, and dug wells, in addition to various water supply schemes based on rivers / nallas. Irrigation & Public Health Department being a nodal agency in the State, dealing with water, taps number of springs yielding discharge less than 1 lps to more than 40 lps, which are perennial and water supply schemes are based on these springs. Generally, these springs are tapped at the source, so that the water can be supplied under gravity. These springs are generally contact or depression types. State departments has also drilled hand pumps in the district, with the depth ranging from 30 to 60 m, depending upon the lithology of the area and discharge varying from 0.5 lps to 2 lps. Few of them are energized with submersible pumps. CGWB has constructed, so far 79 exploratory/observation wells in the district, in the depth range of 23.5 m to 432 m bgl. The discharge of these wells was noted between 0.54 lpm to 3,410 lpm, for a drawdown of less than 1

to 60.55 m. Transmissivity ranges from 7.28 to 2,985 m^2/day . In Kangra district, CGWB monitors 28 hydrograph stations for groundwater regime monitoring, under its National Network. The water levels are monitored four times and ground water quality once, during pre-monsoon period every year. In pre-monsoon (May 2012), the depth to water level range was from 1.56 to 15.44 m bgl and in post-monsoon (November 2012), from 0.48 to 12.30 m bgl.

Drainage map within 5 km of study area is shown below in Fig. 3.17.

Drainage Map of 10 Km Buffer for "Formaldehyde manufacturing unit with production capacity of 100 MT/day" by M/s Feel Organic Products.

Location: Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P).

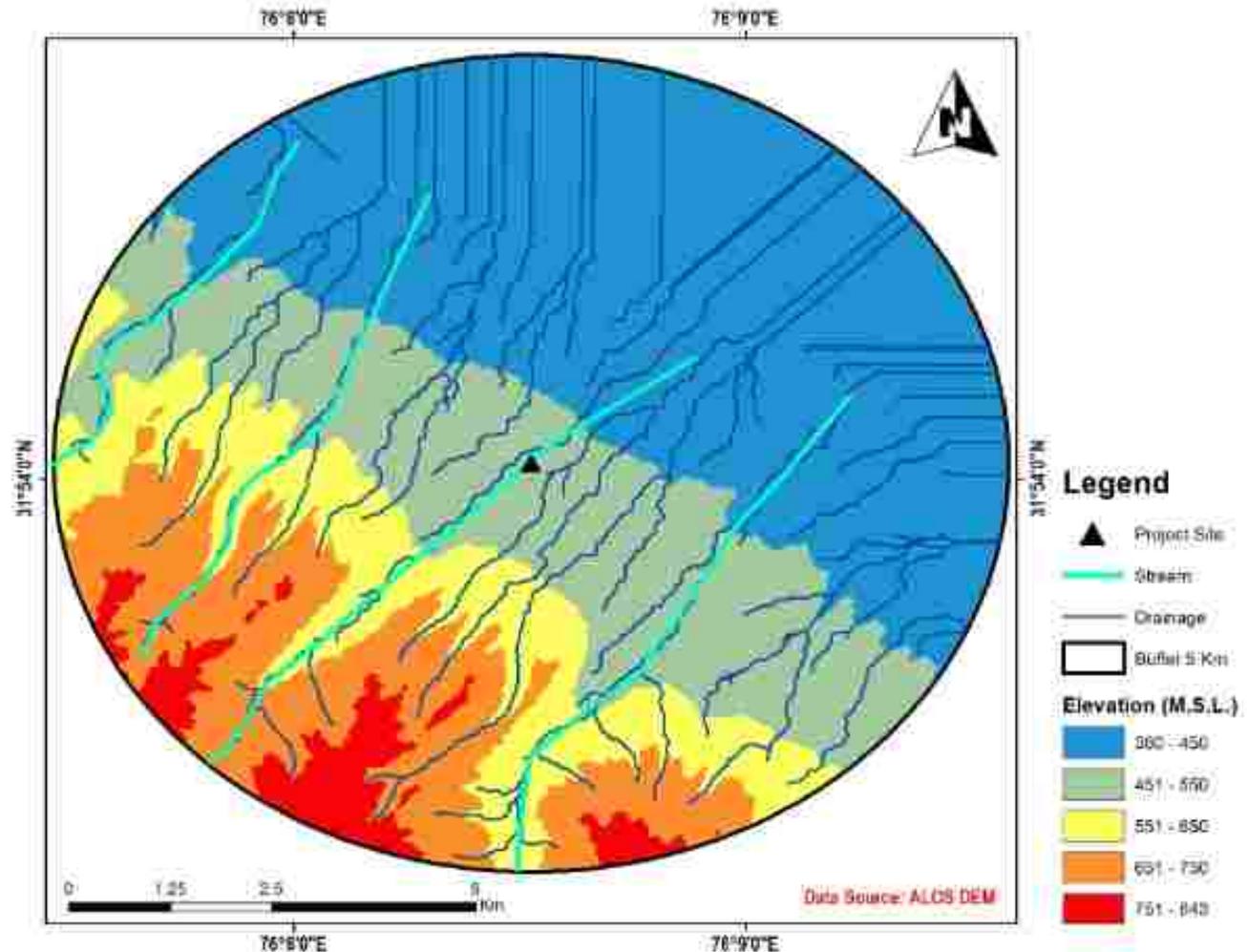
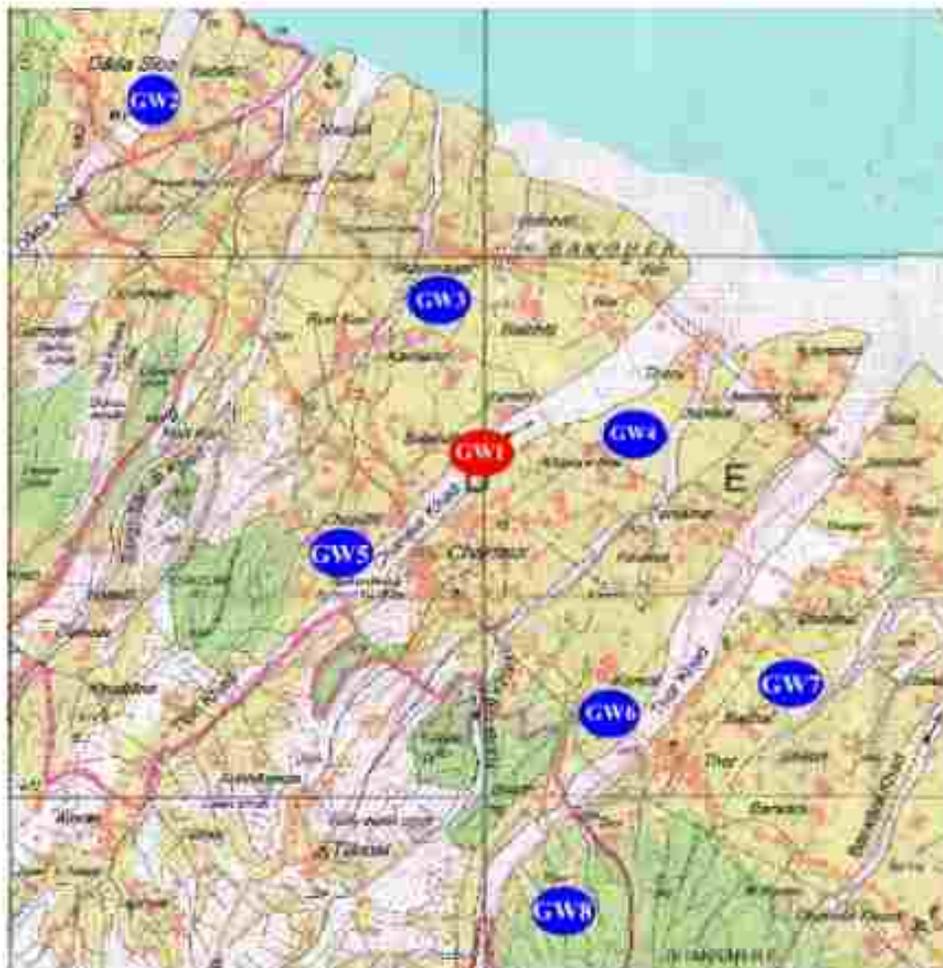


Fig. 3.17: Drainage map of the project area within 10 km of the project location

3.4.5.4 Water Quality

Ground water is available in the study area at different depths. Samples have been drawn from different sites and quality evaluated. To monitor the existing quality of the groundwater, eight samples were collected from them. Locations of Ground Water Monitoring stations are given in **Table 3.11** and surface water monitoring station is given in **Table 3.13** and is shown in **Fig. 3.18(a)**. Detailed test reports depicting water analysis results are enclosed as **Annexure 9**.

Various parameters such as pH, TDS, Total Dissolved Solids, Hardness, Chlorides and Alkalinity, Calcium, Magnesium, Nitrates, Iron, Fluoride and heavy metals have been checked. Ground Water analysis results are given in **Table 3.12** and surface water analysis results are given in **Table 3.14**.



**Fig. 3.18(a): Locations of ground water monitoring stations
(Marked on Toposheet No. H43E1; Not on scale)**

Table 3.11: Details of ground water monitoring stations

S. No.	Sample Code	Name of Village/ Location	Distance & Direction (km)
1.	GW1	Project Site	0
2.	GW2	Village- Dadasiba	2.14 km; NW
3.	GW3	Village- Sham Nagar	1.58 km; NW
4.	GW4	Village- Behar	1.47 km; NE
5.	GW5	Village- Chaplah	2.01 km; SW
6.	GW6	Village- Badhal	2.03 km; W
7.	GW7	Village- Kandol	2.25 km; SE
8.	GW8	Village- Thor Nichli	3.63 km; SE

Photographic View of Groundwater Monitoring





Fig. 3.18 (b): Sampling photographs of groundwater monitoring

Table 3.12: Results of ground water samples

Parameters	Units	GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8
Colour	color units	<5	<5	<5	<5	<5	<5	<5	<5
Odour	-	Agreeable							
pH @ 25°C	-	7.21	7.22	7.45	7.25	7.11	7.45	7.53	7.07
Turbidity	NTU	<1	<1	<1	<1	<1	<1	<1	<1
TDS	mg/l	145	213	149	130	154	153	145	153
Calcium	mg/l	35	51	32	27	37	33	30	34
Chloride	mg/l	6	11	5	5	6.9	6	6	7.9
Fluoride	mg/l	0.38	0.41	0.34	0.30	0.33	0.32	0.35	0.34
Iron As Fe	mg/l	0.13	0.17	0.16	0.14	0.13	0.15	0.15	0.13
Magnesium As Mg	mg/l	5.3	10	8.7	7.3	7.3	5.8	7.8	13
Nitrate	mg/l	3.4	4.6	4.1	3.2	3.8	3.6	3.8	4.2
Sulphate	mg/l	12	24	13	14	13	19	17	17
Alkalinity	mg/l	116	164	120	88	126	116	122	110
Hardness	mg/l	110	168	116	98	122	106	108	138
Zinc	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TSS	mg/l	6.1	6.6	5.7	6.9	6.4	6.5	6.7	5.8
Copper	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Cadmium	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Chromium	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
T. Coli	CFU/100ml	Absent							
E. Coli	CFU/100ml	Absent							

3.4.5.5 INTERPRETATION OF GROUND WATER QUALITY

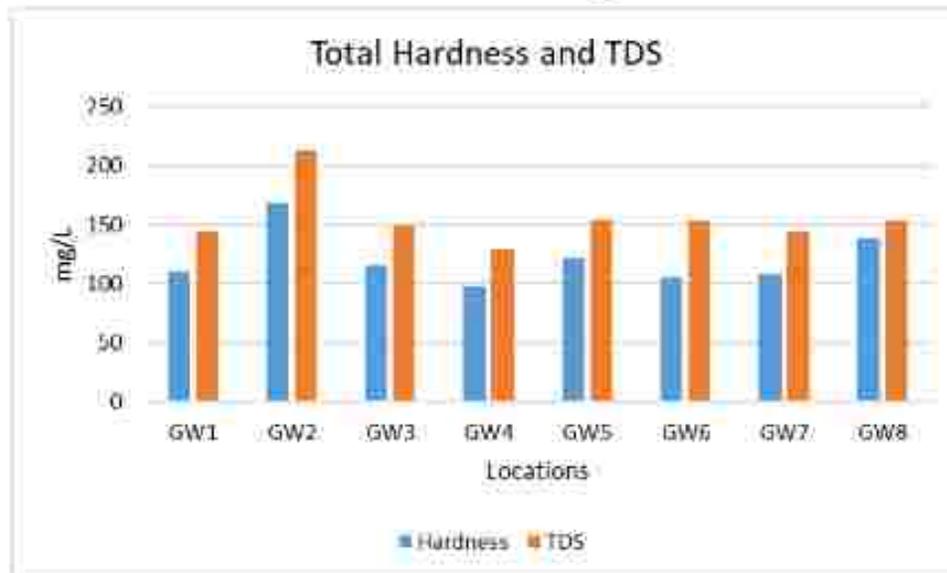


Fig. 3.19: Statistical data of Total Hardness and Total Dissolve Solids

It has been seen from the results that:

1. pH varies from 7.07 -7.53 which is the acceptable limits for potable water.
2. Calcium varies from 27 to 51 mg/l. The highest value was observed at village Dadasiba.
3. Magnesium varies from 5.3 to 13 mg/l. The highest value was observed at village Thor Nichli which is located at distance of about 3.63 km. SE from the Project location.
4. Chloride concentration which is also one of the important parameters varies from 5 to 11 mg/l. It was found maximum at Village Dadasiba and minimum at village Sham Nagar and Behar.
5. Heavy metals like Cadmium, Chromium, Lead and Zinc were much below the permissible limit in all the samples.
6. Sulphate varies from 12 to 24 mg/l.
7. Water hardness is a traditional measure of the ability of water to react with soap to produce a lather and for most consumers the problems associated with washing and scaling of pipes and household appliances that use water, are the two major factors of concern. An alternative measure of hardness is total dissolved solids (TDS), which is a measure of the total concentration of ions in water. TDS in groundwater is often an order

of magnitude higher than in surface waters. In aquifers, the TDS increases with depth due to less fresh recharge water to dilute existing groundwater and the longer period for ions to be dissolved. The older and deeper the groundwater the more mineral rich the water becomes resulting in quite saline water. High concentrations of salts in ground waters are often due to over-abstraction or to drought conditions when old saline ground waters may enter boreholes through upward replacement, or due to saline intrusion into the aquifer from the sea.

The ground water test results indicate that water is good in quality and safe for drinking purpose and fit for cooling water requirement, after treatment through water softener plant.

3.4.5.6 SURFACE WATER MONITORING

Surface water samples have been drawn from river Beas located within 10 km radius of the project as Khuds/tributaries/canals located within study area are seasonal and no water was present during the study period. To monitor the existing quality of the surface water, 2 samples were collected from the river. Locations of surface Water Monitoring stations are given in Table 3.13 and is shown in Fig 3.20(a). Test reports depicting water analysis results are enclosed as Annexure 9.

Table 3.13: Details of surface water monitoring stations

S. No.	Sample Code	Name of Village/Location	Distance from project (km)
1.	SW1	Beas River (Upstream)	2.93 km; NE
2.	SW2	Beas River (Downstream)	2.38 km; N



Fig. 3.20(a): Locations of surface water monitoring stations
(Marked on Toposheet No. H43E1; Not on scale)



Fig. 3.20(b): Sampling Photographs of Surface Water Monitoring

Table 3.14: Results of surface water samples

Parameters	Units	SW1 (Upstream)	SW2 (Downstream)
Colour	color units	<5	<5
Conductivity	µmho/cm	176	182
Odour	-	Agreeable	Agreeable
pH @ 25°C	-	7.50	7.62
Taste	-	Agreeable	Agreeable
Turbidity	NTU	<1	<1
TDS	mg/l	115	121
Calcium	mg/l	20	21
Chloride	mg/l	8.7	9.7
Fluoride	mg/l	0.32	0.34
Iron As Fe	mg/l	0.14	0.16
Magnesium As Mg	mg/l	6.3	6.8
Nitrate	mg/l	2.1	2.3
Sulphate	mg/l	8.6	8.6
Alkalinity	mg/l	68	72
Hardness	mg/l	76	80
Sodium	mg/l	8.1	8.9
Phosphorus	mg/l	<0.5	<0.5
BOD	mg/l	<2	<2
COD	mg/l	<5	<5
DO	mg/l	5.6	5.8

Potassium	mg/l	2.1	2.5
TSS	mg/l	6.1	5.9
Bicarbonates	mg/l	68	72

3.4.5.7 Surface Water Quality

The results of surface water sample show that BOD is below detection level (DL2) & pH varies from 7.50-7.62. COD is also below detection level (DL5).

3.4.5.8 Conclusion

All the above parameters at the both locations in the study area are within permissible and tolerable limits. In the study area, since the samples have been collected from different sites at isolated places, the level of concentration and different elements vary quite considerably which may be due to small aquifers. However, the levels of the various components of groundwater are within acceptable permissible norms for drinking water.

3.4.6 BIOLOGICAL ENVIRONMENT

A natural ecosystem is a structural and functional unit of nature. It has different biological and physical components, which are interrelated to each other and survive by interdependence. An ecosystem has self-sustaining ability and controls the number of organisms at any level by cybernetic rules. The basic purpose to explore the biological environment under Environmental Impact Assessment (EIA) is to assist the decision making process and to ensure that the project options under consideration are environmental-friendly. An ecological survey of the study area was conducted, particularly with reference to listing of species and assessment of the existing baseline ecological conditions in the study area. The main objectives of the ecological survey were aimed at assessing the existing flora and fauna components in the study area, to understand the possible impacts on the biological environment caused by the project activities during operational phase and to formulate if necessary the appropriate mitigation/preventive measures for such impacts. Data has been collected through secondary sources and by site visits. The present study was carried out in two separate headings for floral and faunal community.

3.4.6.1 Sampling

For field assessment, i.e. primary data collection, a standard statistical sampling method was followed. The sampling design followed random sampling method. The sampling area was decided based on prior land-use map of the project influence zone (within the 10 km radius around the project area), outlining forest areas and other types of habitats, topographic features and build-up area.

The project is located in notified industrial area and Pong Dam Lake Wildlife Sanctuary is approx. 2.60 km away from the project site in North direction. The distance from Eco sensitive zone of the wildlife sanctuary from the project site is approx. 1.68 km.

Table 3.15: Aspect to be covered in the study area

Aspect of Environment	Impacts
A. Terrestrial Ecology	Impacts on terrestrial flora and fauna
	Impacts on Rare-Endangered-Threatened (RET) wildlife
	Impacts on socially / economically / genetically/ biologically important species
B. Aquatic Ecology	Impacts on aquatic fauna flora
	Impacts on spawning and breeding grounds for aquatic species

The information presented in this section has been collected through field studies, consultation with various government departments and collation of available literature with various institutions and organizations.

3.4.6.2 Site selection criteria

Land Use and Land Cover (LU/LC) Map of Core and Buffer Zone is used for the biological component assessment. Selection of sampling locations was made with reference to topography, land use, vegetation pattern, etc. The observations were taken on natural vegetation, dense forests, roadside plantation and non- forest area (agricultural field, in plain areas, village wasteland, etc.) for quantitative representation of different species. The study area for the survey has been divided into three major segments namely Primary Zone (0 - 3 km), Secondary Zone (3 - 7 km) and Tertiary/ Outer Zone (7 - 10 km) which shows the biodiversity pattern in different zones of the study area has been observed.

List of sampling locations for study on biological aspects is detailed in Table No. 3.16 and shown in Fig. No. 3.21.



Fig. 3.21: Sampling Locations for Biological Study in Core and Buffer Zone

Table 3.16: Sampling Locations for biological study in core and buffer zone

S. No.	Sampling Location	Distance from project location	Direction from project location
1	Project location	-	-
2	Dadasiba Road	Approx. 1 km	SW direction
3	Pong Dam Wildlife Sanctuary	Approx. 2.60 km	N direction
4	Tiamal RF	Approx. 2.36 km	S direction
5	Bhakarar RF	Approx. 4.93 km	SE direction
6	Tilli RF	Approx. 7.23 km	NE direction
7	Chalan RF	Approx. 8.59 km	SW direction

Source: Field Study

The summary of data collected from these sources as a part of the EIA study is outlined in **Table 3.17**.

Table 3.17: Summary of Data Collected from various sources

Aspect	Mode of data collection	Parameters Monitored	Frequency	Source(s)
Terrestrial Ecology	Primary field survey and secondary literature survey	Floral and Faunal Diversity and their Importance	One Season (Winter)	Field studies, Forest & Wildlife Department and literature review
Aquatic Ecology	Primary field survey and secondary literature survey	Diversity of Species and their Importance	One Season (Winter)	Field studies, Forest Wildlife Department and literature review

With the change in environmental conditions, the vegetation cover as well as animals reflects several changes in its structure, density and composition.

3.4.6.3 Ecological Pattern

The project site (core zone) as well the buffer zone area was surveyed to assess the ecological status. The present study was carried out separately for floral and faunal community respectively.

3.4.6.4 Flora

Methodology for floral study:

- Secondary literature survey – Published literature, including those from relevant organizations like the Botanical Survey of India (BSI), the Wildlife Institute of India (WII-Dehradun), the respective Forest Department of the State concerned etc., research papers, articles, books and reliable websites, available within and adjacent to the study area were compiled and inventoried as “Secondary Floral Diversity Database”.
- Primary database – Data generated from the field survey within and adjacent to the study area were meticulously compiled and inventoried as “Primary Floral Diversity Database”.
- Field instruments/materials for floral study – Measuring tape/s, herbarium sheets, newspaper, herbarium press, polythene bags (incl. zip-locked pouches), clinometers, and magnifying glass, camera, and GPS unit.

- Primary field survey – Field identification of the species and later identification through photographs were followed. In addition, randomly distributed quadrats were laid for ecological assessment.

Herbs: Herbaceous plants were studied using the quadrat method as followed, during vegetation survey. The size of each quadrat for herb survey was 1 m x 1 m. Field identification of the species and later identification through photographs were followed.

Shrubs: Shrubs were studied using the quadrat method as followed during vegetation survey. The size of each quadrat for shrub survey was 5 m x 5 m for shrubs of 3 m height. Field identification of the species and later identification through photographs were followed. Unidentified shrubs were collected following proper procedure and prepared into herbarium sheets for later identification.

Trees: Trees were studied using the quadrat method as followed during vegetation survey. The size of each quadrat for tree survey was 10m x 10m.

To study herbaceous and woody vegetation systematically, standard methods of analyzing vegetation were used for determination of vegetation composition and richness. Quadrat numbers depend upon the requirement in specific cases. Comparative analysis of the outcome of the Quadrat Sampling was done to understand the characteristics of species observed in the study area. The detailed species characteristics like frequency, abundance & density were computed as follows:

1. **Frequency:** The frequency of individual species is the number of times the species occurs in the sampling quadrat. It is actually represented as a percentage calculated as follows:

$$\text{Frequency (\%)} = \frac{\text{No. of quadrats in which the species occurred}}{\text{Total no. of quadrats studied}} * 100$$

It reflects the probability of encountering the species within the sampled area

2. **Density:** Density is the measure of dense in the distribution of an individual species within a given area. Density of a species is defined as the average number of the species per quadrat and calculated as follows:

$$\text{Density} = \frac{\text{Total no. of individuals of a species in all quadrats}}{\text{Total no. of quadrats studied}}$$

3. Abundance: Abundance is to determine how common or rare a species is relative to other species in a defined area. It reflects how evenly one species is distributed within the sampling area. Abundance of a species is defined as the number of individuals per quadrant and calculated as follows:

$$\text{Abundance} = \frac{\text{Total no. of individuals of a species in all quadrats}}{\text{Total no. of quadrats in which species occurred}}$$

The relative frequency, relative density and relative abundance has been calculated to calculate the Importance Value Index (IVI) i.e., the species having highest IVI is of most ecological importance and the one having the lowest IVI is of least ecological importance.

The floral pattern in the study area has been studied in detail. Mainly the regional flora and fauna is found in the study area. The local species are proposed to plant during afforestation. So, biodiversity of the area due to the project shall be maintained.

Phyto-sociological analysis

The forests within Study area have three distinct strata, viz., (i) Upper canopy layer with dominance of emergent trees, (ii) Sub-canopy layer with dominance of small trees and pole size trees, and (iii) Under canopy layer with dominance of shrubs, herbs and juvenile trees. The details of species available are given below:

Table 3.18: Phyto-sociological analysis of Upper canopy layer with dominance of emergent Trees

Scientific Name of Species	Common Name	Density	Frequency (%)	Abundance	RD	RF	RA	IVI
<i>Acacia catech</i>	Khair	0.8	60	1.33	29.32	76.36	38.39	144.08
<i>Juglans regia</i>	Akhrot	2.8	80	3.50	102.62	101.82	100.79	305.22
<i>Pinus roxburghii</i>	Chir Pine	3.7	80	4.63	135.60	101.82	133.18	370.60
<i>Azadirachta indica</i>	Neem	3.2	90	3.56	117.28	114.55	102.39	334.21
<i>Mangifera</i>	Mango	2.8	60	4.67	102.62	76.36	134.38	313.36

<i>indica</i>								
<i>Ficus religiosa</i>	Pipal	3	90	3.33	109.95	114.55	95.99	320.48
<i>Eucalyptus</i>	Safeda	2.8	90	3.11	102.62	114.55	89.59	306.75
Total		2.73	78.57	3.47	100	100	100	300

Upper canopy layer covers taller trees with well-developed foliage at the site. Above given table shows the different trees varieties with their density, frequency and abundance. The Importance Value Index (IVI) of tree species varied from 144.08 of Khair (*Acacia catech*) species to 370.60 of Chir Pine (*Pinus roxburghii*) species. Chir Pine (*Pinus roxburghii*) so the high density followed by Neem (*Azadirachta indica*).

Table 3.19: Phyto-sociological analysis of Sub-canopy layer with dominance of small trees and pole size trees

Scientific Name of Species	Common Name	Density	Frequency (%)	Abundance	RD	RF	RA	IVI
<i>Aegle mureioz</i>	Bil	2.00	80.00	2.50	87.59	100.00	87.59	275.18
<i>Diospyros fomentosa</i>	Kinu	2.00	80.00	2.50	87.59	100.00	87.59	275.18
<i>Morus alba</i>	Toot	2.40	100.00	2.40	105.11	125.00	84.09	314.20
<i>Cassia fistula</i>	Amaltas	1.80	70.00	2.57	78.83	87.50	90.09	256.43
<i>Callistemon viminalis</i>	Bottle brush	2.00	60.00	3.33	87.59	75.00	116.79	279.38
<i>Terminalia chebula</i>	Harrer	3.50	90.00	3.89	153.28	112.50	136.25	402.04
Total		2.28	80.00	2.85	100.00	100.00	100.00	300.00

The IVI of tree species varied from 256.43 of Amaltas (*Cassia fistula*) to 402.04 of Harrer (*Terminalia chebula*). Harrer (*Terminalia chebula*) has shown the high density value with 3.70 followed by Lasura (*Cordia dichotoma*).

Table 3.20: Phyto-sociological analysis under canopy layer with dominance of shrubs, herbs and juvenile trees

Scientific Name	Common Name	Density	Frequency (%)	Abundance	RD	RF	RA	IVI
<i>Dendrocalamus strictus</i>	Bamboo	3.1	80	3.88	145.31	109.09	133.20	387.61
<i>Cymbopogon martini</i>	Lemon grass	0.5	40	1.25	23.44	54.55	42.97	120.95
<i>Parthenium hysterophorus</i>	Congress grass	2.8	100	2.80	131.25	136.36	96.25	363.86
Total		2.13	73.33	2.91	100.00	100.00	100.00	300.00

The number of shrubs, shrubby climbers and tree saplings together was total of 64 individuals of different species were found. The IVI varied from 120.95 of Lemon Grass (*Cymbopogon martini*) to 387.61 of Bamboo (*Dendrocalamus strictus*). Maximum density value shows in Bamboo (*Dendrocalamus strictus*) followed by Congress (*Parthenium hysterophorus*).

Floral diversity of the study area

Total 52.43% is covered in forest land within the buffer zone of the study area. Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data

Table 3.21: Inventory of Floral Diversity in Buffer Zone

S. No.	Botanical Name	Common Name	Family
TREES			
1.	<i>Acacia catechu</i>	Khair	Mimosaceae
2.	<i>Acacia nilotica</i>	Babul	Mimosaceae
3.	<i>Aegle marmelos</i>	Bel	Rutaceae
4.	<i>Albizia lebbek</i>	Siris tree	Mimosaceae

5.	<i>Albizia odoratissima</i>	Black Siris	Mimosaceae
6.	<i>Anogeissus latifolia</i>	Dhaura	Combretaceae
7.	<i>Anthocephalus cadamba</i>	Kadam	Rubiaceae
8.	<i>Artocarpus heterophyllus</i>	Jack fruit	Moraceae
9.	<i>Azadirachta indica</i>	Neem	Meliaceae
10.	<i>Bauhinia variegata</i>	Kachnar	Caesalpiniaceae
11.	<i>Bombax ceiba</i>	Semal/ Kapok	Bombacaceae
12.	<i>Butea monosperma</i>	Palash	Fabaceae
13.	<i>Casearia tomentosa</i>	Chilla	Salicaceae
14.	<i>Cassia fistula</i>	Amaltas	Caesalpiniaceae
15.	<i>Casuarina equisetifolia</i>	Vilayati saru	Casuarinaceae
16.	<i>Celtis australis</i>	Honeyberry	Cannabaceae
17.	<i>Colebrookea oppositifolia</i>	Binda	Lamiaceae
18.	<i>Cornus macrophylla</i>	Large Leaf Dogwood	Comaceae
19.	<i>Cupressus torulosa</i>	Himalayan Cypress	Cupressaceae
20.	<i>Dalbergia sissoo</i>	Shisham	Fabaceae
21.	<i>Delontx regia</i>	Gulmohar	Fabaceae
22.	<i>Ehretia laevis</i>	Chamror	Boraginaceae
23.	<i>Elaeocarpus sphaericus</i>	Rudraksh	Elaeocarpaceae
24.	<i>Emblica officinalis</i>	Amla	Phyllanthaceae
25.	<i>Erythrina suberosa</i>	Dhaul Dhak	Fabaceae
26.	<i>Eucalyptus hybrid</i>	Safeda	Myrtaceae
27.	<i>Feronia limonia</i>	Barnasi	Rutaceae

28.	<i>Ficus benghalensis</i>	Bad	Moraceae
29.	<i>Ficus benjamina</i>	Weeping Fig	Moraceae
30.	<i>Ficus palmata</i>	Jungle Anjur	Moraceae
31.	<i>Ficus racemosa</i>	Goolar	Moraceae
32.	<i>Ficus religiosa</i>	Pipal	Moraceae
33.	<i>Flacourtia indica</i>	Bilangada/ Kangu	Salicaceae
34.	<i>Gmelina arborea</i>	Gamhar	Verbenaceae
35.	<i>Grevillea robusta</i>	Silver Oak	Proteaceae
36.	<i>Grewia oppositifolia</i>	Bihul	Tiliaceae
37.	<i>Jacaranda mimosifolia</i>	Blue Gulmohar	Bignoniaceae
38.	<i>Kydia calycina</i>	Bharanga/ Bhoti/ Pula	Malvaceae
39.	<i>Lagerstroemia parviflora</i>	Lendia/ Sidi	Lythraceae
40.	<i>Lannea coromandelica</i>	Mohin	Anacardiaceae
41.	<i>Limonia acidissima</i>	Wood Apple	Rutaceae
42.	<i>Mallotus philippensis</i>	Kamala/ Rohan/ Kambel	Euphorbiaceae
43.	<i>Mangifera indica</i>	Mango/ Aam	Anacardiaceae
44.	<i>Melita azedarach</i>	Bakain/ Darek tree	Meliaceae
45.	<i>Moringa oleifera</i>	Senjana	Moringaceae
46.	<i>Mitragyna parvifolia</i>	Kaim/ Kadamb	Rubiaceae
47.	<i>Olea cuspidata</i>	Wild olive/ Brown olive	Oleaceae
48.	<i>Oroxylum indicum</i>	Bhut vriksha	Bignoniaceae
49.	<i>Ougeimia cojimbensis</i>	Sandan	Fabaceae
50.	<i>Phoenix sylvestris</i>	Khajur	Arecaceae

51.	<i>Pinus roxburghii</i>	Chir Pine/ Chid	Pinaceae
52.	<i>Pinus wallichiana</i>	Himalayan Blue Pine	Pinaceae
53.	<i>Pistacia integerrima</i>	Kakkar	Anacardiaceae
54.	<i>Polyalthia longifolia</i>	Ashok	Annoniaceae
55.	<i>Populus ciltata</i>	Himalayan Poplar	Salicaceae
56.	<i>Prosopis cineraria</i>	Khejri	Fabaceae
57.	<i>Rhus puijabensis</i>	Tittri	Anacardiaceae
58.	<i>Sapindus mukorossi</i>	Reetha	Sapindaceae
59.	<i>Sapium sebiferum</i>	Chicken Tree	Euphorbiaceae
60.	<i>Santalum album</i>	Sandalwood	Santalaceae
61.	<i>Saraca asoca</i>	Sita Ashok	Caesalpiniaceae
62.	<i>Schiechera oleosa</i>	Kusum	Sapindaceae
63.	<i>Syzygium cumini</i>	Jamun	Myrtaceae
64.	<i>Tamarindus indica</i>	Imli	Caesalpiniaceae
65.	<i>Tectona grandis</i>	Teak/ Sagwan	Verbenaceae
66.	<i>Terminalia arjuna</i>	Arjun	Combretaceae
67.	<i>Terminalia bellirica</i>	Baheda	Combretaceae
68.	<i>Terminalia chebuaia</i>	Harad	Combretaceae
69.	<i>Terminalia tomentosa</i>	Asan	Combretaceae
70.	<i>Toona ciliata</i>	Toon	Meliaceae
71.	<i>Toona serrata</i>	Toon	Meliaceae
72.	<i>Vitis parviflora</i>	Panibel	Vitaceae
SHRUBS & HERBS			

73.	<i>Adhatoda vasica</i>	Adusa	Acanthaceae
74.	<i>Aloe vera</i>	Gwar patha	Asphodelaceae
75.	<i>Alstonia scholaris</i>	Saptaparni	Apocynaceae
76.	<i>Artemisia vulgaris</i>	Naagdana	Asteraceae
77.	<i>Berberis asiatica</i>	Daruhaldi	Berberidaceae
78.	<i>Berberis lycium</i>	Darhaldi	Berberidaceae
79.	<i>Bougainvillea glabra</i>	Booganbel	Nyctaginaceae
80.	<i>Caesalpinia decapetala</i>	Mysore Thorn/ Ralan	Caesalpiniaceae
81.	<i>Calotropis procera</i>	Aak	Asclepiadaceae
82.	<i>Cannabis sativa</i>	Marijuana/ Hemp	Cannabaceae
83.	<i>Carica papaya</i>	Papaya	Caricaceae
84.	<i>Carissa opaca</i>	Karonda	Apocynaceae
GRASSES			
85.	<i>Bambusa arundinacea</i>	Indian Thorny Bamboo	Poaceae
86.	<i>Bambusa vulgaris</i>	Golden Bamboo	Poaceae
87.	<i>Chrysopogon fulvus</i>	Guria grass	Poaceae
88.	<i>Cymbopogon martinii</i>	Lemon grass	Poaceae
89.	<i>Cynodon dactylon</i>	Doob grass	Poaceae
90.	<i>Desmostachya bipinnata</i>	Dabh grass	Poaceae
91.	<i>Dendrocalamus giganteus</i>	Giant Bamboo	Poaceae
92.	<i>Eulaliopsis binata</i>	Sabaigrass/ Bhabar	Poaceae
93.	<i>Heteropogon contortus</i>	Blackspear grass	Poaceae
94.	<i>Parthenium hysterophorus</i>	Congress grass	Asteraceae

References:

- <https://hpbioiversity.gov.in/>
- <https://hpforest.nic.in/>
- Survey Document by Atul Kumar Sharma, Asst. Geologist (Geology Wing, Directorate of Industries)

3.4.7 Fauna

1. Secondary literature survey: Published literature, including those from relevant organizations like Zoological Survey of India (ZSI), Forest Department of the State, research papers, articles, books & reliable websites, available within & adjacent to study area were meticulously compiled & inventoried as "Secondary Faunal Diversity Database".

2. Primary field survey –

Birds: For avian diversity assessment, point count method was used. The radius of each of the point was 50 m. Birds were identified on-site using field-books, or later through photographs and field-sketches.

Mammals: For mammalian diversity assessment, direct observations were done on the field. Field identification of species was done on-site through photographs/ sketches and with the help of field-books/other reliable sources.

Amphibians and reptilians: Direct observation & indirect evidence/sign survey were done for assessing amphibian and reptilian diversity in the field site. Identification of species was done on-site through photographs/sketches and with the help of field-books or other reliable sources.

3. Primary database: Data generated from the field survey within and adjacent to the study area was meticulously compiled and inventoried as "Primary Faunal Diversity Database".

4. Field instruments/materials for faunal study: Range-finder, compass, binoculars, camera, slide-calipers, measuring tape, GPS unit, polythene bags (incl. zip-lock pouches) and field-books.

Faunal diversity of the study area

As per the discussion with local people, observations & studies the faunal diversity found in buffer zone are given below in **Table 3.22:**

Table 3.22: Inventory of Fauna diversity in Buffer zone

S. No.	Scientific Name	English Name	Schedule
VERTEBRATES			
MAMMALS			
1.	<i>Boselaphus tragocamelus</i>	Nilgai	Sch. II
2.	<i>Canis aureus</i>	Jackal	Sch. II
3.	<i>Felis chaus</i>	Jungle Cat	Sch. II
4.	<i>Funambulus pennanti</i>	Northern Palm Squirrel	Sch. V
5.	<i>Herpestes edwardsii</i>	Common Mongoose	Sch. II
6.	<i>Hystrix indica</i>	Indian Porcupine	Sch. V
7.	<i>Lepus nigricollis</i>	Indian Hare	Sch. V
8.	<i>Muntiacus muntjac</i>	Barking deer	Sch. II
9.	<i>Presbytis entellus</i>	Common Langur	Sch. II
10.	<i>Pteropus giganteus</i>	Flying Fox	Sch. V
11.	<i>Rattus rattus</i>	Common Rat	Sch. V
12.	<i>Suncus murinus</i>	Grey Musk Shrew	Sch. V
13.	<i>Sus scrofa</i>	Wild Boar	Sch. II
14.	<i>Vulpes bengalensis</i>	Common fox	Sch. II
AMPHIBIANS			
15.	<i>Bufo melanostictus</i>	Common Indian toad	Sch. V
16.	<i>Euphlyctis cyanophlyctis</i>	Indian Skipper Frog	Sch. V
17.	<i>Fejervarya limncharis</i>	Indian Cricket Frog	Sch. V
18.	<i>Hoplobatrachus tigerinus</i>	Indian Bull Frog	Sch. IV
REPTILES			
19.	<i>Ancistrodon himalayanus</i>	Himalayan Pit Viper	Sch. II
20.	<i>Bungarus caeruleus</i>	Common Indian krait	Sch. V
21.	<i>Calotes versicolor</i>	Garden Lizard	Sch. V
22.	<i>Chameleon calcaratus</i>	Chameleon	Sch. II
23.	<i>Gecko hemidactylus</i>	Common house Gecko	Sch. V
24.	<i>Mabuya carinata</i>	Brahminy Skink	Sch. V
25.	<i>Melanochelys trijuga</i>	Indian black turtle	Sch. V

26.	<i>Naja naja</i>	Indian Cobra	Sch. II
27.	<i>Ptyas mucosa</i>	Indian Rat Snake	Sch. II
AVES			
28.	<i>Accipiter badius</i>	Shikra	Sch. IV
29.	<i>Acridotheres ginginianus</i>	Bank Myna	Sch. IV
30.	<i>Acridotheres fuscus</i>	Jungle myna	Sch. IV
31.	<i>Acridotheres tristis</i>	Common Myna	Sch. IV
32.	<i>Amaurornis phoenicurus</i>	White breasted waterhen	Sch. IV
33.	<i>Anthus rufulus</i>	Paddy field pipit	Sch. IV
34.	<i>Aquila rapax</i>	Tawny Eagle	Sch. IV
35.	<i>Ardea intermedia</i>	Intermediate Egret	Sch. IV
36.	<i>Ardeola grayii</i>	Indian Pond Heron	Sch. IV
37.	<i>Athene brama</i>	Spotted Owlet	Sch. IV
38.	<i>Perdica asiatica</i>	Jungle Bush Quail	Sch. IV
39.	<i>Perdix perdix</i>	Grey Partridge	Sch. IV
40.	<i>Phalacrocorax carbo</i>	Great Cormorant	Sch. IV
BUTTERFLY			
41.	<i>Actisoma panorpoides</i>	Ground skimmer dragonfly	Sch. IV
42.	<i>Apis dorsata</i>	Giant Honey Bee	Sch. IV
43.	<i>Apis florea</i>	Small Honey Bee	Sch. IV
44.	<i>Argiope aurantia</i>	Yellow garden spider	Sch. IV
45.	<i>Belenois aurota</i>	Pioneer butterfly	Sch. IV
46.	<i>Belostoma indicum</i>	Indian giant water Bug	Sch. IV
47.	<i>Brachythemis contaminata</i>	Ditch Jewel dragonfly	Sch. IV
48.	<i>Calopteryx maculata</i>	Ebony Jewelwing dragonfly	Sch. IV
49.	<i>Catopstilia pomona</i>	Common Emigrant	Sch. IV
50.	<i>Chilades parthastus</i>	Small cupid butterfly	Sch. IV
51.	<i>Danaus chrysippus</i>	Plain Tiger	Sch. IV
52.	<i>Euploea core</i>	Common crow butterfly	Sch. IV
53.	<i>Euthalia nara</i>	Bronze duke butterfly	Sch. IV
54.	<i>Hesperotettix spectosus</i>	Jhugur insect	Sch. IV
55.	<i>Ixias marianne</i>	White Orange Tip	Sch. IV
56.	<i>Junonia hedonia</i>	Brown pansy butterfly	Sch. IV
57.	<i>Junonia hierta</i>	Yellow Pansy	Sch. IV
58.	<i>Junonia lemonias</i>	Lemon pansy butterfly	Sch. IV
59.	<i>Junonia orithya</i>	Blue Pansy	Sch. IV
60.	<i>Lethe nictas</i>	Yellow woodbrown butterfly	Sch. IV
61.	<i>Mantis religiosa</i>	Praying mantis	Sch. IV

62.	<i>Papilio polytes romulus</i>	Common mormon	Sch. IV
63.	<i>Phalanta phalantha</i>	Leopard butterfly	Sch. IV
64.	<i>Pieris napi</i>	Green veined butterfly	Sch. IV
65.	<i>Spharagemon collare</i>	Mottled sand grasshopper	Sch. IV
66.	<i>Stegodyphus lineatus</i>	Desert Spider	Sch. IV
67.	<i>Sternocera sternicornis</i>	Jewel Beetle	Sch. IV
68.	<i>Tarucus nara</i>	Common Nara Butterfly	Sch. IV
69.	<i>Trichodes mitalii</i>	Checkered beetle	Sch. IV

Table 3.23: Inventory of Birds observed in Pong Dam Wildlife Sanctuary

S. No	Common Name	Scientific Name	No. of individuals observed	
			Winter	Summer
1.	Greater white fronted goose	<i>Anser albifrons</i>	120	0
2.	Greyleg goose	<i>Anser anser</i>	451	0
3.	Bar headed goose	<i>Anser indicus</i>	27395	30
4.	Ruddy shelduck	<i>Tadorna ferruginea</i>	124	6
5.	Common shelduck	<i>Tadorna tadorna</i>	38	0
6.	Gadwall	<i>Anas strepera</i>	332	6
7.	Eurasian wigeon	<i>Anas penelope</i>	215	0
8.	Mallard	<i>Anas platyrhynchos</i>	37	0
9.	Indian spot billed duck	<i>Anas poecilorhyncha</i>	6	4
10.	Northern shoveller	<i>Anas clypeata</i>	390	2
11.	Northern pintail	<i>Anas acuta</i>	1625	4
12.	Garganey	<i>Anas querquedula</i>	82	8
13.	Common teal	<i>Anas crecca</i>	1381	12
14.	Red crested pochard	<i>Netta rufina</i>	172	0
15.	Common pochard	<i>Aythya ferina</i>	4083	0
16.	Ferruginous duck	<i>Aythya nyroca</i>	66	0
17.	Tufted duck	<i>Aythya fuligula</i>	108	0
18.	Grey Francolin	<i>Francolinus pondicerianus</i>	0	3
19.	Red jungle fowl	<i>Gallus gallus</i>	0	2
20.	Indian Peafowl	<i>Pavo cristatus</i>	0	2
21.	Little grebe	<i>Tachybaptus ruficollis</i>	78	10
22.	Great crested grebe	<i>Podiceps cristatus</i>	60	12
23.	Woolly necked stork	<i>Ciconia nigra</i>	2	0
24.	Little cormorant	<i>Phalacrocorax niger</i>	865	7
25.	Great cormorant	<i>Phalacrocorax carbo</i>	349	0
26.	Grey heron	<i>Ardea cinerea</i>	13	0

27.	Purple heron	<i>Ardea purpurea</i>	1	0
28.	Great egret	<i>Ardea alba</i>	6	0
29.	Intermediate egret	<i>Mesophoyx intermedia</i>	3	2
30.	Little egret	<i>Egretta garzetta</i>	19	23
31.	Indian pond heron	<i>Ardeola grayii</i>	7	0
32.	Osprey	<i>Pandion haliaetus</i>	3	3
33.	White rumped vulture	<i>Gyps bengalensis</i>	15	6
34.	Himalayan griffon	<i>Gyps himalayensis</i>	4	1
35.	Greater spotted eagle	<i>Cianga cianga</i>	2	0
36.	Booted eagle	<i>Hieraaetus pennatus</i>	1	0
37.	Eurasian marsh harrier	<i>Circus aeruginosus</i>	2	0
38.	Shikra	<i>Accipiter badius</i>	4	3
39.	Pariah kite	<i>Milvus migrans</i>	15	8
40.	White breasted water hen	<i>Amaurornis phoenicurus</i>	10	3
41.	Purple swamphen	<i>Porphyrio porphyrio</i>	5	1
42.	Common moorhen	<i>Gallinule chloropus</i>	1	4
43.	Common coots	<i>Fulica atra</i>	3350	56
44.	Great thick knee	<i>Esacus recurvirostris</i>	3	0
45.	Black winged stilt	<i>Himantopus himantopus</i>	26	15
46.	Pied avocet	<i>Recurvirostra avosetta</i>	16	0
47.	Northern lapwing	<i>Vanellus vanellus</i>	4	0
48.	River lapwing	<i>Vanellus duvaucelii</i>	31	0
49.	Red wattled lapwing	<i>Vanellus indicus</i>	0	31
50.	Yellow wattled lapwing	<i>Vanellus malabaricus</i>	0	4
51.	White tailed lapwing	<i>Vanellus leucurus</i>	1	0
52.	Kentish plover	<i>Charadrius alexandrinus</i>	14	0
53.	Little ringed plover	<i>Charadrius dubtus</i>	137	12
54.	Common sandpiper	<i>Actitis hypoleucos</i>	14	2
55.	Green sandpiper	<i>Tringa ochrophus</i>	4	0
56.	Common greenshank	<i>Tringa nebularia</i>	9	0
57.	Marsh sandpiper	<i>Tringa stagnatilis</i>	10	0
58.	Wood sandpiper	<i>Tringa glareola</i>	4	0
59.	Common redshank	<i>Tringa tetanus</i>	4	0
60.	Curlew sandpiper	<i>Calidris ferruginea</i>	1	0
61.	Little stint	<i>Calidris minuta</i>	46	55
62.	Temminck's stint	<i>Calidris temminckii</i>	72	0
63.	Oriental pranticole	<i>Glareola lacteal</i>	0	2
64.	Slender billed gull	<i>Chroicocephalus genei</i>	2	0
65.	Black headed gull	<i>Chroicocephalus ridibundus</i>	50	6

66.	Brown headed gull	<i>Chroicocephalus brunnicephalus</i>	43	2
67.	Pallas's gull	<i>Ichthyaetus ichthyaetus</i>	54	0
68.	Caspian gull	<i>Larus cachimanus</i>	25	0
69.	Yellow legged gull	<i>Larus mtchahellis</i>	1	0
70.	Little tern	<i>Sterna albifrons</i>	10	0
71.	Whiskered tern	<i>Chlidonias hybrid</i>	13	0
72.	River tern	<i>Sterna aurantia</i>	108	7
73.	Black bellied tern	<i>Sterna acuticauda</i>	1	3
74.	Rock pigeon	<i>Columba livia</i>	43	16
75.	Oriental turtle dove	<i>Streptopelia orientalis</i>	0	5
76.	Eurasian collared dove	<i>Streptopelia decaocta</i>	0	5
77.	Spotted dove	<i>Streptopelia tranquebarica</i>	0	5
78.	Laughing dove	<i>Streptopelia senegalensis</i>	0	1
79.	Common Hawk -cuckoo	<i>Hierococcyx varius</i>	0	1
80.	Asian koel	<i>Eudynamis scolopaceus</i>	1	14
81.	Greater coucal	<i>Centropus sinensis</i>	1	1
82.	White throated kingfisher	<i>Halcyon smyrnensis</i>	1	2
83.	Pied kingfisher	<i>Ceryle rudis</i>	8	2
84.	Green bee-eater	<i>Merops orientalis</i>	0	2
85.	Indian roller	<i>Coracias benghalensis</i>	0	1
86.	Eurasian hoopoe	<i>Upupa epops</i>	2	3
87.	Indian grey Hornbill	<i>Ocyeras birostris</i>	0	14
88.	Great barbet	<i>Megalaima virens</i>	0	1
89.	Brown headed barbet	<i>Megalaima zeylanica</i>	4	4
90.	Copper smith Barbet	<i>Megalaima haemacephala</i>	0	2
91.	Fulvous-breasted woodpecker	<i>Dendrocopus maciei</i>	0	1
92.	Peregrine falcon	<i>Falco peregrinus</i>	3	2
93.	Rose ringed parakeet	<i>Psittacula krameri</i>	27	26
94.	Plum headed parakeet	<i>Psittacula cyanocephala</i>	11	7
95.	Slaty headed parakeet	<i>Psittacula himalayana</i>	4	11
96.	Long tailed shrike	<i>Pericrocotus erythropygus</i>	2	3
97.	Rosy minivet	<i>Lanius tephronotus</i>	0	1
98.	Black Drongo	<i>Dicrurus macrocercus</i>	0	8
99.	Ashy Drongo	<i>Dicrurus leucophaeus</i>	0	2
100.	Sprangled Drongo	<i>Dicrurus aeneus</i>	0	1
101.	Asian Paradise flycatcher	<i>Terpsiphone paradisi</i>	0	1
102.	Red billed blue magpie	<i>Urocissa erythrorhyncha</i>	0	1
103.	Rufous tree pie	<i>Dendroctitta vagabunda</i>	7	12

104.	House crow	<i>Corvus splendens</i>	76	3
105.	Large billed crow	<i>Corvus macrorhynchos</i>	0	12
106.	Indian bushlark	<i>Mirafra erythroptera</i>	10	12
107.	Singing bushlark	<i>Mirafra cantillans</i>	6	20
108.	Bimaculated lark	<i>Melanocorypha bimaculata</i>	5	4
109.	Humes short toed lark	<i>Calandrella acutirostris</i>	9	3
110.	Sand lark	<i>Calandrella raytal</i>	56	16
111.	Crested lark	<i>Galerida cristata</i>	17	12
112.	Eurasian skylark	<i>Aluda arvensis</i>	12	0
113.	Oriental skylark	<i>Alauda gulguia</i>	10	4
114.	Barn swallow	<i>Hirunda rustica</i>	145	25
115.	Wire tailed swallow	<i>Hirundo smithii</i>	0	6
116.	Streak throated swallow	<i>Petrochelidon fluvicola</i>	10	4
117.	Great tit	<i>Parus major</i>	4	16
118.	Red vented bulbul	<i>Pycnonotus cafer</i>	2	13
119.	Himalayan bulbul	<i>Pycnotus leucogenys</i>	22	36
120.	Pale rumped warbler	<i>Phylloscopus griseolus</i>	6	0
121.	Sulphur bellied warbler	<i>Phylloscopus chloronotus</i>	0	1
122.	Greenish warbler	<i>Seicercus poltogenys</i>	0	3
123.	Whistlers warbler	<i>Seicercus whistleri</i>	0	1
124.	Grey cheeked warbler	<i>Phylloscopus trochiloides</i>	1	0
125.	Common tailor bird	<i>Orthotomus sutorius</i>	0	6
126.	Jungle prinia	<i>Prinia sylvatica</i>	3	1
127.	Ashy prinia	<i>Prinia socialis</i>	0	1
128.	Grey breasted prinia	<i>Prinia hodgsonii</i>	2	2
129.	Yellow eyed babbler	<i>Chrysomma sinense</i>	17	0
130.	Oriental white eye	<i>Zosterops palpebrosus</i>	12	12
131.	Common babbler	<i>Turdoides caudate</i>	26	7
132.	Striated babbler	<i>Turdoides earlei</i>	8	4
133.	Jungle babbler	<i>Turdoides striata</i>	41	8
134.	Large grey babbler	<i>Turdoides malcolmi</i>	0	5
135.	Streaked laughing thrush	<i>Trochalopteron lineatum</i>	1	0
136.	Indian robin	<i>Copsychus fulcatus</i>	2	18
137.	Oriental magpie robin	<i>Copsychus saularis</i>	1	6
138.	Blue whistling thrush	<i>Myophonus caeruleus</i>	1	12
139.	Plumbeous redstart	<i>Phoenicurus frontalis</i>	1	0
140.	White capped redstart	<i>Phoenicurus leucocephalus</i>	2	1
141.	Black redstart	<i>Phoenicurus ochiruros</i>	0	6
142.	Grey bushchat	<i>Saxicola ferrus</i>	6	4
143.	Pied bushchat	<i>Saxicola caprata</i>	0	20

144.	Indian chat	<i>Ceromela fusca</i>	0	3
145.	Pied wheater	<i>Oenantheptes chanka</i>	0	1
146.	Jungle myna	<i>Acridotheres fuscus</i>	0	0
147.	Bank myna	<i>Acridotheres gingimianus</i>	10	0
148.	Common myna	<i>Acridotheris tristis</i>	117	13
149.	Brahminy starling	<i>Temenuchus pagodarum</i>	7	14
150.	Pale billed flowerpecker	<i>Dicaeumerythro rhynchos</i>	0	1
151.	Purple sunbird	<i>Cinnyris asiaticus</i>	0	35
152.	Western yellow wagtail	<i>Motacilla flava</i>	4	5
153.	Citrine wagtail	<i>Motacilla citreola</i>	39	20
154.	Grey wagtail	<i>Motacilla cinerea</i>	42	0
155.	White wagtail	<i>Motacilla alba</i>	135	57
156.	White browed wagtail	<i>Motacilla madaraspatensis</i>	23	18
157.	Paddyfield pipit	<i>Anthus rufulus</i>	13	40
158.	Tawny pipit	<i>Anthus campestris</i>	4	0
159.	Upland pipit	<i>Anthus sylvanus</i>	1	0
160.	Tree pipit	<i>Anthus trivalis</i>	0	3
161.	Water pipit	<i>Anthus spinoletta</i>	26	14
162.	Olive backed pipit	<i>Anthus hodgsoni</i>	0	2
163.	Crested bunting	<i>Melophus latham</i>	0	1
164.	Rock bunting	<i>Emberiza cia</i>	0	4
165.	Fire fronted siren	<i>Serinus pusillus</i>	1	0
166.	House sparrow	<i>Passer rutilans</i>	4	40
167.	Russet sparrow	<i>Petronia xanthochollis</i>	0	6
168.	Chestnut shouldered petronia	<i>Passer domesticus</i>	0	1

Source: Studies on bird diversity of pong dam wildlife sanctuary, Kangra, Himachal Pradesh, India. Article in journal of entomology and zoology studies - January 2018.

The faunal and floral diversity observed during the field survey does not claim considerable attention as most of the species observed are common throughout the region. The impact of the project activities thus is understood to be negligible on the biological environment. As a measure to minimize the prevailing and forthcoming environmental impacts due to industrial pollution and activities, it is advisable to increase green areas through plantations in the available land so that the local faunal and floral biodiversity may increase.

3.4.8 SOCIO-ECONOMIC ENVIRONMENT

3.4.8.1 Scope of Socio Economic Survey

Scope of the study is as follows:

- Collection of baseline data of the study area.
- Collation of data, analysis and generation of tables.
- Comprehension of socio-economic status of the people living in the study area.
- Identification and inventory of probable socio economic impacts of the project activities on social and economic aspects in the study area.
- Assessment of the probable impacts of the project on the people living in the study area.
- Facilitation of sustainability of positive impact by recommending community development initiatives in the study area.
- Suggestion of mitigation measures in case of adverse impact.

3.4.8.2 Methodology

The socio-economic aspects of people have been analyzed and presented for the project within the Tehsil Dehra of Kangra District. The study carried out is descriptive and exploratory in nature.

The methodology adopted for the project has been collected from various secondary sources.

- Review of secondary data (2011 census and latest available district statistical hand books) with respect to population and occupational structure.
- Discussion with local population in some areas on socio- economic & cultural aspects of people in the study area.
- Extensive site visits and observation of the socio-economic environment.

The sociological aspects of this study include human settlements, demographic, socio economic aspects & others. The economic aspects include agriculture, industry and occupational structures of workers. Demographic & socio-economic details are described in following sections.

3.4.8.3 Demographic & Socio Economic Details of District Kangra

Demographic Features of District Kangra are highlighted below:

Table 3.24: Area details of Districts

Area	Total Population	No. of Blocks	No. of Tehsils and Sub-Tehsils	No. of Villages	No. of Municipal Corporation	No. of Gram Panchyats	No. of Municipalities	No. of Nagar Panchyat
5739 sq. km.	15,10,075	15	33	3906	1	748	6	1

Table 3.25: Urban Area Population details of Districts

Description	Rural	Urban
Population (%)	94.29%	5.71%
Total Population	1,420,864	86,359
Male Population	703,276	45,283
Female Population	717,588	41,076
Sex Ratio	1020	907
Child Sex Ratio (0-6)	875	840
Child Population (0-6)	153,161	7,704
Male Child(0-6)	81,700	4,188
Female Child(0-6)	71,461	3,516
Child Percentage (0-6)	10.78%	8.92%
Male Child Percentage	11.62%	9.25%
Female Literacy Child Percentage	9.96%	8.56%
Literates	1,097,080	67,381
Male Literates	576,989	36,292
Female Literates	36,292	31,089
Average Literacy	86.54%	85.67%

Male Literates	92.83 %	88.31 %
Female Literates	80.49 %	82.77 %

Source: <https://hpkangra.nic.in/demography/>

Table 3.26: Population Comparison of Districts

Description	2011	2001
Actual Population	1,510,075	1,339,030
Male	750,591	661,254
Female	759,484	677,776
Population Growth	12.77%	14.05%
Area Sq. Km	5,739	5,739
Density/km ²	263	233
Proportion to Himachal Pradesh Population	22.00%	22.03%
Sex Ratio (Per 1000)	1012	1025
Child Sex Ratio (0-6 Age)	876	836
Average Literacy	85.67	80.08
Male Literacy	91.49	87.54
Female Literacy	80.02	73.01
Total Child Population (0-6 Age)	164,607	164,566
Male Population (0-6 Age)	87,741	89,635
Female Population (0-6 Age)	76,866	74,931
Literates	1,152,640	940,505
Male Literates	606,443	500,383
Female Literates	546,197	440,122

Source: <https://hpkangra.nic.in/demography/>

- Kangra District has a population of 15,10,075 of which male and female were 7,50,591 and 7,59,484 respectively.
- The average literacy Rate of the district is 85.67% is higher than the average literacy rate of Himachal Pradesh i.e. 82.80%. Total male literacy rate is 91.49 % whereas total female literacy rate is 80.02%.
- Sex Ratio (Per 1000) of Kangra district is 1012.

3.4.8.4 Recommendation and Suggestions

- Vocational training centers should be established in the villages. So that rural people can get training in various activities and generate self-employment or skill themselves for various job opportunities in the nearby areas.
- Project proponent should conduct professional skills development program for Business opportunities to local people.
- Assistance in Pradhanmatri Kaushal Vikas Yojana (PMKYY) like Animal Health Worker, Green House Operator, Dairy farmer / Entrepreneur, Tractor operator, Organic Grower, Quality Seed Grower, Backhoe operator, Crane operator, Engine mechanic, Excavator operator, loader operator etc.
- Upgradation of existing school infrastructure.
- Camp to provide knowledge of Government schemes and loan or subsidies for agriculture and allied sector. Need to subsidize construction of ground water tank for storing rainwater for utilizes it for daily chore.
- Health care center, mobile health ambulance and routine health camp facility shall be provided to make the people get easy medical facilities.
- Vocational training session shall be organized to provide self-employment to the women and unemployed youth for involve in income generation sources for short term and long term employment.

3.4.8.5. Socio- Economic Benefits of the project activities on the local community

M/s Feel Organic Products, will employ around 37 persons from the local region, to ensure maximum benefit to the local qualified un-employed youth around the project location, thus the local population will benefit at large with the operation of the project.

Employment to local population will ensure to benefit them by improving their living standard and consequently economic development of the region.

Thus, there are many youths in the district of Kangra who can be trained through capacity building for contributing towards the GDP improvement of the district as well as state of Himachal Pradesh. Further, as literacy rate of District Kangra i.e. 85.67% is higher than the average literacy rate of Himachal Pradesh i.e. 82.80%.

The availability of educated and qualified youth in the local region of the project site is promising. ITI students from local ITI Institutes can also be employed under the skilled people's employment. It is an effort to access or estimate, in advance, the social consequences that are likely to follow from specific policy actions and specific government action as resultant of proposed unit. Summarized socio economic benefits are as under:

- With coming up of the project, the employment opportunities (direct as well as indirect) will increase and local people will be employed on priority basis as per their skills. Training will also be provided to the local people.
- People will get direct opportunity in the unit. Not only the direct employment but also the indirect employment will be created from industry related various activities.
- The indirect employment will also be created from transportation, from mushrooming of services, shops and retails etc.
- After getting employment, socio- economic status of people will be increased. They will be able to get basic amenities directly and indirectly from the project.
- Local people will be employed, hence, it will not cause any stress on the community infrastructure, or any social stress, due to changing patterns of social interaction.
- Increased income security will contribute to the empowerment of the most vulnerable sections of the society.
- It is a long term project; therefore, it will bring avenues for long term jobs.
- Group insurance, free medical facilities, ESI and EPF will be provided to the employees.

- Indirectly, the project will help the government by paying different taxes (sales tax, excise duty, etc.) from time to time, which is a part of revenue and thus, will help in development of the region.

3.4.8.6 Conclusion

The project activity and the management will provide assistance for the development of public amenities in the nearby areas.

The overall effect will improve the buying power of people and thus a higher standard of living viz. better education, improved health and sanitation facilities, housing and acquisition of consumer durables. Housing, transport, medical, educational and other civic amenities will improve in the future. This is envisaged as a major positive benefit.

CHAPTER 4.0

ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

4.1 INTRODUCTION

Environmental impact in the study area is any alteration of environmental conditions or creation of new set of environmental conditions, adverse or beneficial, caused or induced by the impacts of project. Prediction involving identification and assessment of potential impacts of project on surrounding environment is a significant component of EIA studies. The likely impacts of various activities of the project on the environment were identified. These impacts were assessed for their significance based on the background environmental quality in the area and magnitude of the impact. All components of the environment were considered and wherever possible impacts were evaluated in quantitative/qualitative terms. Several scientific methods are available to predict the impact of project on environmental factors such as water, air, noise, land, ecological, socio-economic, etc. Such predictions are superimposed over baseline environmental status to derive post projected scenario of the environmental conditions during operation of project. The resultant (post-project) quality of environmental parameters is reviewed with respect to the permissible limits. Based on the impacts, thus, predicted preventive mitigation measures were formulated and incorporated in the environmental management plan to minimize adverse impacts on environmental quality during project execution.

The environmental impacts can be categorized as primary and secondary. Primary are those which are directly attributed to the project and secondary impacts are those which are indirectly induced due to primary impacts and include those associated with investment & socio-economic status. Since during operational phase, the production capacity of formaldehyde manufacturing unit will be 100 KLD to meet with the increased demand of the formaldehyde in market. In order to achieve the increased production capacity, Feel Organic Products will install new plant having machinery like Methanol Separator, Methanol RO Water Mixing Tank, Super Heater with cyclone, Heat Exchanger, RO Water Plant, Cooling Tower, Absorption Columns etc. Also, the Fire Hydrant Line, separators manufacturing machines, Evaporator of 10 KLD capacity will be installed. Treated water of process will be used for cooling water make-up. Domestic wastewater after treated in septic tank shall be used to meet green area water demand. Thus, impacts on environmental parameters during operational phase

have been studied to estimate the impacts on environment. These impacts are continuous warranting built in permanent measures for mitigation and monitoring.

4.2 IDENTIFICATION & CHARACTERIZATION OF IMPACTS

The waste and pollutants will be generated due to various activities of the project and will cause impacts on different environmental attributes. The major project activities and the anticipated environmental impacts of the project are discussed below under the following categories:

- Impacts due to project location and mitigation measures.
- Impacts due to project design and mitigation measures.
- Impacts during construction and mitigation measures.
- Impacts during operation and mitigation measures.

Classification of potential Impacts was done on the basis of

- a) Nature of the predicted Impact
- b) Duration of the predicted Impact and
- c) Reversibility of the predicted impact
- d) Significance of the predicted impact

Table 4.1 Criteria for Classification of Impacts

S.No.	Classification	
1.	Nature of predicted Impact	
	Neutral	No Environmental Impact
	Adverse	Negative Environmental Impact
	Beneficial	Positive Environmental Impact
2.	Duration of Predicted Impact	
	Short Term	Impact only during activity or persist for less than a month
	Medium Term	Impact persisting 6 months
	Long Term	Impact persisting for more than 6 months
3.	Reversibility of the Predicted Impact	
	Reversible	Impact that is not permanent
	Irreversible	Permanent loss of environmental assets or environmental quality
4.	Significance of the predicted impact	

Insignificant	Impact too small to be measured or quantifiable, not giving rise to any change in environment
Minor	Impact capable of causing change in environment but not affecting / changing environment quality status (within standards)
Significant	Impact capable of causing sufficient change in the environment affecting / changing environment quality status (above standards)
Major	Impact capable of causing irreversible change in the environment causing considerable effect on environment quality status. (Above standards)

On the basis of above criteria, potential impacts are identified due to proposed construction and operational activities.

4.2.1 IMPACTS DUE TO PROJECT LOCATION & MITIGATION MEASURES

M/s Feel Organic Products is planning to set up a Formaldehyde manufacturing unit with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). The total plot area of the proposed unit is 4000 sq. m (4,783.96 sq. yards or 0.98 acres. The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde manufacturing unit. Copy of Provisional Allotment letter is attached along as **Annexure-1**. Land Documents including Possession letter and Agreement to Lease are enclosed as **Annexure 2(a) & 2(b)**. The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as **Annexure-3**. Thus, no major and significant impact anticipated to project location on population and sensitive receptors is envisaged. However, vehicular load on road network for transportation of materials and machinery and subsequent air and noise emissions can exert additional load on baseline environmental conditions. These impacts will be identified by traffic survey, emissions inventory and air quality modeling for additional loads on environmental emissions to be carried out in additional studies as well as subsequent section respectively.

4.2.2 IMPACTS DUE TO PROJECT DESIGN & MITIGATION MEASURES

The impacts on air quality from any project depends on various factors like design capacity, configuration, process technology, raw materials, fuel to be used, air pollution control

measures, operation and maintenance. The construction plans envisaged state of art technology, presently available in the country. Topographical aspects were considered for water, wastewater and storm water management. The planning shall be in accordance with the standard landscape planning concepts adequate provision for green areas. Thus, no anticipated impacts are envisaged due to project design. Also, during construction phase, care shall be taken to avoid disturbance to the fauna existing in the site.

4.2.3 IMPACTS DUE TO OPERATION PHASE & MITIGATION MEASURES

The project proponent proposes to construct formaldehyde manufacturing unit. Higher production may affect the environment in varying degrees through natural resources depletion viz. water consumption, release of particulates and gaseous emissions, contamination of water body, run-off from waste storage area, etc. During operational phase; air, water and noise may be affected due to material usage and manufacturing process and associated activities in general. Associated activities like transportation of materials, operations of workshop, canteen etc., may affect air, water and noise environment. It is proposed to develop Zero Liquid Discharge system, wastewater will be treated and reused for industrial activities and in green area within the project premises. There will not be any significant impacts due to operation of project in and around the project site as the project is designed to follow recycle and reuse. Further, green belt development will have a positive impact not only on flora and fauna but also on air quality, noise and soil characteristics. Positive impacts on socio-economic environment are expected due to employment and further infrastructure development.

Table 4.2(a): Environmental Impacts due to Constructional Activities

Environmental Attributes	Activity	Cause	Impact Characteristics				Mitigation Measures Suggested
			Nature (Neutral/ Adverse/ Beneficial)	Duration (Short Term/ Medium Term/ Long Term)	Reversibility (Reversible /Irreversible)	Significance (Insignificant / Minor/ Significant/ Major)	
Air pollution	Site preparation, erection of building / sheds / machineries etc.	Fugitive dust emissions	Adverse	Short Term	Reversible	Minor	Water sprinkling will be done during transportation of trucks carrying construction material. Trucks carrying construction material will be covered with tarpaulin to prevent spreading of dust during transportation. Further, vehicle maintenance and pollution check will be done periodically. Vehicles having valid Pollution Under Control Certificate will be permitted. In addition to this, management will
	Vehicular movement carrying construction material	Haul road dust emissions. Gaseous emissions due to vehicle exhaust.	Adverse	Short Term	Reversible	Minor	

							ensure proper usage of personal protective equipment by workers to avoid any exposure to dust.
	Operation of DG set	Flue gas emissions will be generated	Adverse	Short Term	Reversible	Minor	DG set will be used as source of power backup only in the case of power failure. Silent DG-sets with HSD based oil will be used.
Noise Pollution	Noise & vibration generated by development activity, equipment, machinery movement and installation.	Noise levels will increase.	Adverse	Short Term	Irreversible	Significant	Proper usage of personal protective equipment's ensure that workers avoid any long term exposure to higher noise levels.
	Noise generated by movement of vehicles		Adverse	Short Term	Reversible	Minor	Vehicle maintenance and pollution check will be done periodically. Vehicles

							having valid Pollution Under Control Certificate will be permitted.
	Operation of DG sets	Generation of noise during DG set operation will increase noise levels.	Adverse	Short Term	Reversible	Minor	DG sets will have acoustic enclosure to minimize the noise and will be used in case of power failure only.
Solid Waste Generation	Site clearance, site formation and excavation work.	Generation of inert waste.	Adverse	Short Term	Reversible	Minor	During construction phase, spoil and overburden waste is likely to be generated. Generated waste will be used for land filling, leveling and other construction activities. Recyclable waste construction materials will be sold to recyclers. Unusable and excess construction debris will be disposed at designated places in tune with the local norms. Construction and Demolition waste, if any will be disposed off

							according to Construction and Demolition Waste Management Rules, 2016.
	Waste generated from domestic activities	Generation of domestic waste	Adverse	Short Term	Reversible	Minor	The biodegradable waste will be segregated at site and disposed off to as per SWM, 2016.
Hazardous waste Generation	Operation of D.G. set	Used oil from D.G. set	Adverse	Short Term	Reversible	Minor	DG set will be used as source of power backup only in the case of power failure. Used oil from D.G. set will be given to authorized recyclers.
Water Pollution	Domestic sewage generation	Operation of washroom, toilets- Wastewater generation	Adverse	Short Term	Reversible	Significant	Temporary workers shall be sourced from nearby villages. Mobile toilets will be provided during construction phase.
Ecology & Biodiversity Environment	Site clearance, site formation and excavation work	Impact on vegetation	Adverse	Long Term	Irreversible	Minor	No clearance of any vegetation or building is required as the land has already been allotted to set up a Formaldehyde Manufacturing Unit. Further, construction activities will be restricted
	Moment of vehicles, dust and noise generation	Impact on fauna/ animals	Adverse	Short Term	Reversible	Minor	

							during day time only and movement of vehicles during night time will be strictly prohibited. Hence, no impact on Ecology and Environment.
Socio-economic Environment	Employment Generation	Better financial and living standards	Beneficial	Short term	Reversible	Significant	The project will increase employment opportunity and promote direct and indirect employment. Thus, no mitigation measures required.
	Influx of labour	Stress on infrastructure, social relations	Adverse	Short Term	Reversible	Minor	There shall be no influx, but routine movement of people as local labour will be preferred. The maximum number of workers engaged in construction at any time shall not be more than 30.
Hydrogeology	Ground water abstraction	Depletion of ground water	Neutral	Short term	Reversible	Insignificant	Water will be sourced from tanker. No groundwater will be used during constructional phase.

Land Use Environment	Site formation and development work	Disturbing natural drainage contours, slopes	Adverse	Short term	Irreversible	Minor	Suitable drainage and waste management measures will be adopted during construction phase. Natural drainage pattern shall be maintained in the project site by providing the necessary cross drainage structures.
Soil Environment	Compaction of soil by earth moving equipment	Degradation of top soil	Adverse	Short Term	Reversible	Minor	Overloading of vehicles will be avoided
	Oil & grease leakage due to vehicle breakages at site.	Degradation of quality of soil	Adverse	Short Term	Reversible	Minor	Vehicle maintenance and pollution check will be done periodically to avoid any oil and grease leakage from vehicles

Table 4.2(b): Environmental Impacts from operational phase

Environmental Attributes	Activity	Cause	Impact Characteristics				Mitigation Measures Suggested
			Nature (Neutral/ Adverse/ Beneficial)	Duration (Short Term/ Medium Term/ Long Term)	Reversibility (Reversible /Irreversible)	Significance (Insignificant / Minor/ Significant/ Major)	
Air pollution	Transportation of raw material to project site	Fugitive dust emissions	Adverse	Long Term	Reversible	Significant	Water sprinkling will be done at loading & unloading areas. Also, covered trucks will be used to carry materials. Further, vehicle maintenance and pollution check will be done periodically. Vehicles having valid Pollution Under Control Certificate will be permitted. In addition to this, management ensure proper usage of personal protective equipment by workers to avoid any exposure to dust.
	Loading, unloading, handling of raw material	Fugitive dust emissions	Adverse	Long Term	Reversible	Significant	
	Vehicular movement & development equipment	Haul road dust emissions. Gaseous emissions due to vehicle exhaust.	Adverse	Long Term	Reversible	Significant	

	Stack emissions (Boiler & DG set)	Particulate matter, SO ₂ & NO _x emissions	Adverse	Long Term	Reversible	Significant	During operation phase, emission due to combustion of fuel for operation of DG Set and Boiler and from process will be generated. Adequate stack height will be provided with both DG set and boiler as per HPSPCB norms. DG set are being used as source of power backup only in the case of power failure. Silent LDO/HSD based oil will be used.
Noise Pollution	Noise & vibrations generated from machinery like Boilers, process units DG set, ETP.	Noise levels will increase.	Adverse	Long Term	Irreversible	Significant	Industrial noise norms will be met during operational phase. Proper usage of personal protective equipment's ensure that workers avoid any long-term exposure to higher noise levels. DG sets will have acoustic enclosure to minimize the noise and will be used in case of power failure only.

	Noise generated by movement of vehicles		Adverse	Short Term	Reversible	Minor	Vehicle maintenance and pollution check will be done periodically. Vehicles having valid Pollution Under Control Certificate will be permitted.
Solid Waste Generation	ETP sludge	Chemical sludge	Adverse	Long Term	Reversible	Significant	Sludge from Evaporator will be disposed to TSDF.
	Waste generated from domestic activities	Generation of domestic waste	Adverse	Long Term	Reversible	Significant	The solid waste generated will be segregated at site. The color-coded closed bins for biodegradable and non-biodegradable waste shall be placed in each section. The biodegradable waste will be treated in compost pits. The waste from non-biodegradable waste bin shall be given to recyclers.
Hazardous waste Generation	Operation of Evaporator	Generation of Hazardous waste	Adverse	Long Term	Reversible	Significant	During operation phase, used oil will be generated @0.1 kl/annum which will be given to authorized recyclers and Sludge from Evaporator @ 44 tonnes/ annum will be disposed to TSDF.
	Operation of D.G. set	Used oil from D.G. set	Adverse	Long Term	Reversible	Significant	

Water Pollution	Industrial activities	Waste water generation from industrial operations, cleaning and washing of machineries etc.	Adverse	Long Term	Reversible	Significant	The treatment of industrial wastewater shall be done in evaporator. The treated water will be evaporated and condensate will be reused in cooling tower, to achieve Zero Liquid Discharge (ZLD).
	Domestic sewage generation	Operation of washroom, toilets- Wastewater generation	Adverse	Short Term	Reversible	Significant	2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.
Ecology & Biodiversity Environment	Green belt development in and around the site	Improvement in vegetation and fauna quality	Beneficial	Long Term	Irreversible	Significant	33.35% green area has been proposed. Thus, overall green area will increase and result in positive impact and helps to reduce the air and noise pollution along with the other direct-indirect benefits. Thus, no mitigation measures required.
	Moment of vehicles, dust and noise generation	Impact on fauna/ animals	Adverse	Long Term	Reversible	Significant	

Socio-economic Environment	Employment Generation	Better financial and living standards	Beneficial	Long term	Irreversible	Significant	The project will increase employment opportunity and promote direct and indirect employment. Thus, no mitigation measures required.
	Influx of labour	Stress on infrastructure, social relations	Adverse	Long Term	Irreversible	Significant	There shall be no influx but routine movement of people. The expected manpower during operational phase will be 37 including both Technical and Non-Technical persons; out of which 12 persons will be residing within the premises.
Hydrogeology	Ground water abstraction	Depletion of ground water	Neutral	Long term	Irreversible	Significant	Total water requirement for the proposed project will be 86 KLD; out of which fresh water requirement will be 84 KLD which will be met through borewell.

Land Use Environment	Change in land use & land cover	Impact on land cover	Adverse	Long term	Irreversible	Significant	The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as Annexure-3 . No mitigations required. However, 33.35% green area will be developed within the project premises.
Soil Environment	Compaction of soil by transportation of raw material and products	Degradation of top soil	Adverse	Long Term	Reversible	Significant	Overloading of vehicles will be avoided
	Oil & grease leakage due to vehicle breakages at site.	Degradation of quality of soil	Adverse	Long Term	Reversible	Significant	Vehicle maintenance and pollution check will be done periodically to avoid any oil and grease leakage from vehicles
	Indiscriminate use of fertilizers, Insecticide for greenbelt	Degradation of quality of soil	Adverse	Long Term	Reversible	Significant	Bio-compost, Bio-fertilizers and herbicides will be used to maintain the green area.
	Spillage of chemicals, effluent on land.	Degradation of quality of soil	Adverse	Long Term	Reversible	Significant	Effluent will be evaporated by using Evaporator. Condensate from evaporator will be reused

							for cooling and green area water demand. Chemicals will be placed in designated area only. Care will be taken during usage of chemicals to avoid any spillage or leakage
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Table 4.3: Impact Identification Matrix

S. No.	Activities	Environmental Attributes						
		Air	Noise	Water	Land & Soil	Ecology	Socio-Economic	Aesthetics
Construction Phase								
1.	Site Preparation	√	√		√	√		
2.	Civil work for laying the foundation of machinery	√	√	√	√	√		
3.	Loading and unloading construction material and civil items and equipment	√			√			√
4.	On-site storage of construction material, civil items & equipment	√	√		√	√		
5.	Erection of building, shed, plant and civil structures	√	√		√	√		
6.	Power supply				√	√		
7.	Maintenance of construction machinery	√	√		√	√		
8.	Vehicular movements	√	√		√			
9.	Disposal of solid waste				√	√		
Operational Phase								
1.	Operation of Machineries	√	√	√	√			√
2.	Operation of Domestic utilities			√	√			
3.	Operation of the DG Sets	√	√		√			
4.	Transportation of Raw material/ products	√	√					
5.	Development of greenbelt					√	√	√
6.	Employment generation						√	

4.3 IMPACT DURING OPERATIONAL PHASE

4.3.1 IMPACT ON AIR

4.3.1.1 Emission from Point Source (Stack Emissions)

Particulate dust, flue gases and vapor emissions shall be there during the operation of boiler, DG sets, process and vehicles.

4.3.1.2 Emission from Area Source (Fugitive Emissions)

Fugitive emissions are expected from process, reaction vessels, storage tanks- raw material and product storage etc.

4.3.1.3 Air Pollution – Impacts identification and Mitigation Measures

Air Quality Modeling

The extra load on the atmosphere by way of releasing air pollutants like respirable suspended particulate matter (PM₁₀/ PM_{2.5}) and gaseous pollutants (SO₂, NO₂, CO) from Emissions of Stationary/ Area/ Point/ Line Sources and other project activities have been taken up to assess the impacts on its surroundings. Entry of pollutants into the atmosphere occurs in the form of gases or particles and continuous mixing, transformation and trans-boundary transportation of these air pollutants make air quality of a locality unpredictable. Dispersion estimates are determined by using distribution equations and/or air quality models.

Gaussian plume equation is simple and widely used to identify the variation of pollutant concentrations away from the center of the plume. This distribution equation determines ground level pollutant concentrations based on time-averaged atmospheric variables (e.g. temperature, wind speed). One of the Dispersion Model developed base on Gaussian plume equation was AERMOD (The American Meteorology Society-Environmental Protection Agency Regulatory Model) which is recommended for air quality simulations by the US EPA (2005). These models stand for the state-of-the-science in air quality modeling and provide powerful features to simulate various modeling situations and considerations.

Meteorological Data

AERMOD model requires hourly surface data for wind speed, wind direction, temperature, relative humidity and cloud cover as given in **Table 4.4**. The surface and profile files were then

used to generate the meteorological file required by the AERMOD dispersion model using the AERMET meteorological pre-processor program. This AERMET program has three stages to process the data. The first stage extracts meteorological data and assesses data quality through a series of quality assessment checks. The second stage merges all data available for 24-hour periods and writes these data together in a single intermediate file. The third and final stage reads the merged meteorological data and estimates the necessary boundary layer parameters for dispersion calculations by AERMOD. The meteorological pre-processed data was used to determine its corresponding Wind Rose plot. The Wind rose shows the most pre- dominant wind direction and the emissions plume will be dispersed mainly in that direction. The meteorological data were recorded on continuous basis during study period at proposed site location. The percentage frequencies of occurrence of various wind speed classes in different directions were computed from recorded data on 24 hourly bases and presented in the form of Wind Rose plot (**Fig. 4.1**) The wind rose diagram shows the predominant winds are mainly flowing from North West. Calm conditions are observed for 2.3 % of the total time. A representative sample of meteorological data used as input for AERMET is shown in **Table 4.4**.

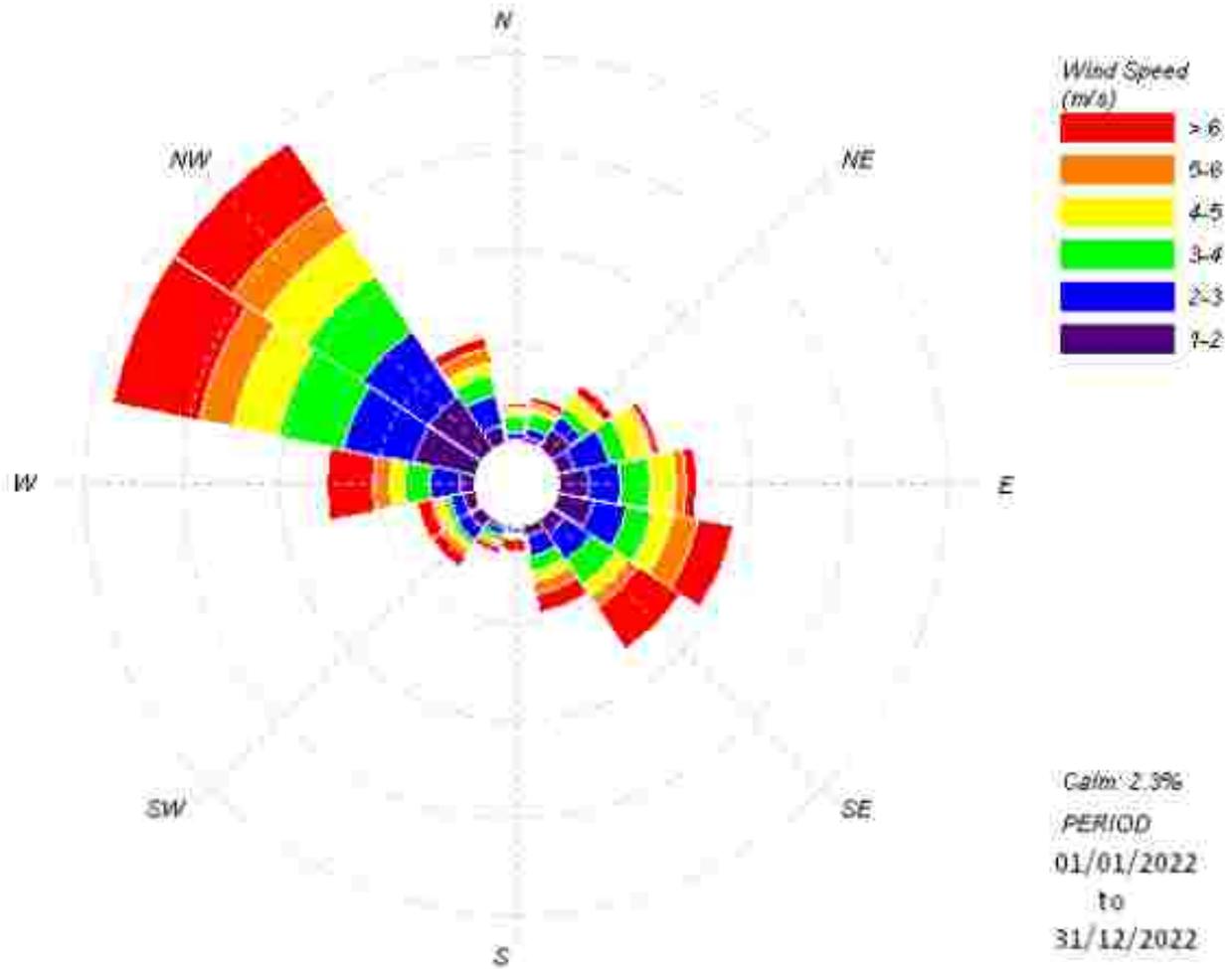


Fig. 4.1: Wind Rose Diagram for study area

Table 4.4: Sample of Meteorological input data used for AERMET

Year	Month	Day	Time (hh:mm)	Pressure (mbar)	Air Temp. (°C)	RH (%)	Wind Speed (m/s)	Wind Direction (°)	Precipitation (mm)	Solar Radiation (W/m ²)
2022	12	31	0	1007	13.5	79.1	1.7	342	0.0	0
2022	12	31	1	1008	14.0	77.6	1.8	342	0.0	0
2022	12	31	2	1010	14.3	76.3	1.0	337	0.0	0
2022	12	31	3	1009	15.1	71.9	1.8	109	0.0	0
2022	12	31	4	1011	14.6	73.9	1.8	129	0.0	0
2022	12	31	5	1009	14.7	74.3	1.8	107	0.0	0
2022	12	31	6	1007	14.7	73.8	1.8	91	0.0	0
2022	12	31	7	1002	14.8	71.7	1.5	90	0.0	11
2022	12	31	8	1001	15.3	71.3	1.5	86	0.0	121
2022	12	31	9	1000	17.5	66.3	2.0	82	0.0	237
2022	12	31	10	999	18.8	60.8	1.5	50	0.0	375
2022	12	31	11	998	20.5	55.2	2.0	89	0.0	412
2022	12	31	12	997	20.5	58	2.9	119	0.0	479
2022	12	31	13	996	20.5	58.8	3.4	150	0.0	526
2022	12	31	14	995	20.2	59.3	2.5	172	0.0	586
2022	12	31	15	994	20.0	61.8	2.1	147	0.0	512
2022	12	31	16	993	19.4	65	1.0	146	0.0	302
2022	12	31	17	996	18.5	68.7	1.5	86	0.0	186
2022	12	31	18	998	18.2	69	1.5	43	0.0	65
2022	12	31	19	1001	17.5	72.3	2.1	99	0.0	16
2022	12	31	20	1003	17.4	72.1	2.7	99	0.0	0
2022	12	31	21	1004	16.8	74.7	1.5	98	0.0	0
2022	12	31	22	1005	17.0	71.2	1.8	113	0.0	0
2022	12	31	23	1006	16.3	73.8	2.1	152	0.0	0

Emission Sources

The main proposed source of emission in the project is one boiler 0.8 TPH and one D.G. set of 200 KVA. The technical details of emission sources are as given below in Table 4.5.

Table 4.5: Details of Major Emission Sources during Project Operation

S. No.	Input Parameter	Boiler	DG Set
1.	Capacity	0.8 TPH	200 KVA
2.	Stack/Duct height from Ground level (m)	9	8
3.	Inner Dia of Stack/Duct (m)	0.25	0.12
4.	Flue Gas Temperature (°C)	100	100
5.	Gas Exit velocity (m/s)	20	15
6.	Gas Exit velocity (Nm ³ /hr)	11110	1333
7.	Emission of PM ₁₀ (mg/ Nm ³)	100	70
8.	Emission of NO _x (mg/ Nm ³)	200	200
9.	Emission of CO (mg/ Nm ³)	150	150
10.	Emission Rate of PM ₁₀ (g/s)	0.31	0.028
11.	Emission Rate of NO _x (g/s)	0.74	0.62
12.	Emission Rate of CO (g/s)	0.046	0.055
13.	Emission Rate of SO ₂ (g/s)	0.062	0.011

Prediction of GLCs

The estimation and evaluation of atmospheric emissions from proposed activity involves a number of scientific inputs i.e. meteorology and surface data and source strength and quantity of emissions from each activity/ process/ source associated to project operation. Prediction of GLC was done in case that plant is operational daily for 24 hourly basis at full load of proposed one boiler 0.8 TPH and one D.G. set of 200 KVA simultaneously.

Predicted GLC for PM₁₀



Fig: 4.2 Incremental value of PM₁₀ within 10km Influence Zone

Predicted GLC for PM_{2.5}

Fig. 4.2: Incremental value of PM_{2.5} within 10km Influence Zone

CONCLUSION OF AIR QUALITY MODELING

The forecasting of air pollutants (PM₁₀ and PM_{2.5}) emitted from a proposed construction of Industrial Plant was studied through AERMOD view and local meteorological data were used to predicted concentrations of major air pollutants in the vicinity of the project in order to ensure compliance with the Indian standards (CPCB, 2009) for ambient air quality. The predicted results show that the project is not adding significant values of pollutants to the environment in case the plant operation has been done with proper and effective dust control measures, regular checkups and maintenance of APCDs and plant process system. Therefore,

the proposed activity is not likely to have any significant adverse impact on the air environment in the vicinity of the project.

Implementing proper Environmental Management Plan along with mitigation measures like adoption of Air Pollution Control equipment's, water sprinkling, tree planting and developing ponds around the project area can further minimize the pollution and protect the environment from the adverse effects. For adequate dispersion of gases, stack of adequate height will be provided that conforms to statutory requirements. For heat dissipation in the work zones arising from furnaces adequate ventilation systems will be provided.

General Mitigation Measures

The impacts of fugitive emissions in the industry will be controlled by following measures:

- Haulage roads will be sprinkled at regular intervals.
- Trucks carrying raw material will be covered with tarpaulin to prevent spreading of dust during transportation.
- Green belt and greenery development has been proposed around storage yards, around plant, either side of roads and around the periphery of the industry.
- Water spray and sprinkling will be practiced at unloading locations.
- Dust respirators will be provided for the people working near dust generating locations.
- All internal roads within the premise will be made paved.
- Speed limit of 10 km/hr. will be enforced for vehicles in the plant premises to prevent road dust emission.

4.3.1.4 Specific Mitigation Measures for Dust Extraction and Control System

- The flue gas will be generated from operation of D.G set and boiler. These gases will then discharge into atmosphere through stack of adequate height for proper dispersion into the atmosphere. D.G set will be operated only in case of emergency power requirement and used as standby power source. As the Light diesel oil (LDO) High Speed Diesel (HSD) will be used in Boiler and HSD for D.G set, the flue gas emission will be within prescribed standards.
- Preventive measures shall be employed to minimize the dust to be generated during construction and operation of project.
- Adequate PPE's will be provided to all workers.
- Green belt will be developed all along the boundary to help in attenuating the pollutants emitted by the plant.
- Regular training will be given to the personnel for operating and maintaining fugitive

emissions control systems.

4.3.2 IMPACT ON WATER RESOURCES/WATER POLLUTION & MITIGATION MEASURES

Total water requirement for the proposed project will be 86 KLD; out of which fresh water requirement will be 82 KLD which will be met through borewell. There is no wastewater generation from the process. 13.7 KL/once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Condensate from evaporator will be reused to meet the cooling water demand. 2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.

4.3.2.1 Mitigation Measures – Water Pollution

- The unit is being established for formaldehyde manufacturing with highly effective technology.
- All effluents shall be properly stored and evaporated by using evaporator.
- Storm water drainage system to collect surface runoff shall be implemented.
- 2 KLD of outflow from septic tank shall be used for green belt.
- Regular maintenance of the plant will be carried out & care will be taken that the generated leachate or any other waste water does not contaminate the ground water of the area.
- After the effluent treatment, the hazardous sludge produced will be sent to TSDF provided.
- Regular compliance report will be submitted to the regional pollution control board & regional office of MoEF&CC.

4.3.3 IMPACT ON NOISE & MITIGATION MEASURES

The noise levels near the sources such as machineries, D.G sets, Boiler etc. will be higher during the operation phase. However, the noise levels will attenuate to the background values beyond the plant boundary and the levels are not expected to rise beyond 55 dB(A) in the study area. The damage risk criteria as enforced by OSHA and CPCB to reduce hearing loss, stipulates the noise levels up to 85 dB(A) as acceptable limits for 8 hour working shift per day. Noise levels may, however, exceed the prescribed limits in certain work places. At these work places, workers will be posted for shorter durations only.

4.3.3.1 Mitigation Measures - Noise

All the workers engaged at and around high noise generating sources shall be provided with ear protection devices like ear muffers/plugs. Their place of attending the work will be changed regularly so as to reduce their exposure duration to high levels. They will be regularly subjected to medical check-up for detecting any adverse impact on the ears in line with the plant. The green belt will also help to prevent noise generated within the plant from spreading beyond the plant boundary. Workplace ambient level is not expected to be beyond 85 dB(A) Leq which is much below the limit specified for 8 hours of exposure. Moreover, the noisy equipments will be provided acoustic enclosure, canopy and insulation of heavy noisy equipments can be done for control measures.

4.3.4 IMPACT ON LAND ENVIRONMENT & MITIGATION MEASURES

During operation phase, land environment will be affected by solid waste generation and due to change in land use pattern. Depending on the type of the industry, the problem of handling waste varies accordingly. However, solid waste generated will be segregated at site. The color coded closed bins for biodegradable and non-biodegradable waste shall be placed in each section. The biodegradable waste will be treated in compost pits. The waste from non-biodegradable waste bin shall be given to recyclers.

All solid waste and hazardous waste will be properly collected, stored and disposed off. Sludge from evaporator shall be disposed to PPCB authorized TSDF site.

4.3.4.1 Municipal Solid Waste

Approximately, 10 kg/day (25 persons × 0.2 kg/person/day + 12 persons × 0.4 kg/person/day) of domestic waste will be generated. The solid waste will be disposed off as per Solid Waste Management Rules, 2016 and amendments thereof. The color coded closed bins for biodegradable and non-biodegradable waste shall be placed in each section. The biodegradable waste bin will be treated in compost pits. The waste from non-biodegradable waste bin shall be given to recyclers.

4.3.4.2 Hazardous Waste

The plant will generate following Hazardous waste as given below in Table 4.6. The Hazardous waste will be collected, stored and disposed as per Hazardous Waste Management Rules, 2016 and amendments thereof.

Table 4.6: Hazardous Waste Generation

S. No.	Name of Waste	Category	Quantity	Mode of Disposal
1.	Used Oil	5.1	0.1 KL/annum	To authorized recycler
2.	Sludge from Evaporator	35.3	44 tones/annum	To TSDF

4.3.5 IMPACT ON BIOLOGICAL ENVIRONMENT & MITIGATION MEASURES

Though the project is located in fallow land, the impact zone is part of landscape involving rural areas. There is scarce growth of vegetation and meager presence of fauna. Impacts on biological environment will be negligible during the operational phase.

The dust emission will affect the effective photosynthesis and biological processes by covering the plant/tree leaves by thin dust layer during dry months which however will be washed away in rainy months.

There are forests and eco sensitive site in the vicinity of the site along with seasonal khads near to project which remains dry almost all over the year.

4.3.5.1 Mitigation Measures-Biological Environment

The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as **Annexure-3**. Vehicular movement during night will be restricted to avoid adverse consequence to biological life in the region. The project activities are restricted to the project location except the transportation of raw material and products. There is no discharge of solid or liquid waste to the environment. Adequate green area has been provided within the project premises.

There is no doubt of the fact that accumulative impact of the operating industries on the ecosystem in future is inevitable.

Time to time monitoring of the plantation activities and proper management advice for maintenance of green cover is required from the regulating bodies in order to ensure least harm to the surrounding ecosystems.

4.3.6 IMPACT ON SOCIO-ECONOMIC ENVIRONMENT & MITIGATION MEASURES

Critically analyzing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate both positive and negative impacts after construction of the project in the region that

are stated below:

4.3.6.1 Positive Socio – Economic Impacts

a) No Rehabilitation

The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as **Annexure-3**. Hence, Resettlement & Rehabilitation is not required as there is no displacement of any houses, habitation or livestock involved.

b) Increase in Job Opportunities

As per the survey, it has been observed that the population in general is involved in agriculture practices so the project in general will help to provide direct and indirect job opportunities for auxiliary and ancillary works etc. The operation of project will provide direct employment to 37 skilled and unskilled personnel.

c) No burden in the existing Infrastructure Facilities

Local work force will be given first preference in the activity due to which influx of the outsiders is not envisaged or minimized. Thus, there will not be the necessity of provision of housing facility for the local workers and not stressing on the civic amenities of the area. However, 12 workers will be residing within the project premises during operational phase. Hence no such burden to the infrastructure is anticipated due to the project.

d) Improvement in Infrastructure

The activity will benefit the local people due to provision of more infrastructural facilities such as development of approach routes within the village area, street light, health facilities etc.

e) Agriculture

The project is not going to cause any damage to the existing agricultural situation. Instead, it is likely to provide the farmers with non-farm activities. There is a possibility to increase in industrialization in the vicinity of the project area. This is likely to bring more skill diversification among local people.

Mr. Devinder Kumar Dhir (Partner) of M/s Feel Organic Products will be responsible for implementation of CER activities. The total estimated cost of project is Rs. 441.25 lakhs. Thus, Rs. 4 lakhs (approx. 1% of project cost) will be spent on CER activities in consultation with concerning ULBs/ PRIs (Urban Local Bodies Panchayati Raj Institutions) through Department

of Environment, Science & Technology, Govt. HP. Thus, the following activities will be proposed to be covered under CER:

Table 4.7: CER activities

S. No.	Activities	Amount
1.	Installation of Plastic waste shredders machine	Rs. 4 lakhs

Further, the issues raised during public hearing will be undertaken under CER.

Therefore, the project can be considered "significantly positive" i.e. keep regular watch on adverse impacts through practicing pollution control measures and post monitoring with simultaneous contribution towards raising standard of living of the people in study area together with its development.

CHAPTER 5.0

ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.1 INTRODUCTION

M/s Feel Organic Products is planning to set up a Formaldehyde manufacturing unit with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). The total plot area of the proposed unit is 4000 sq. m (4,783.96 sq. yards or 0.98 acres. Formaldehyde (HCHO) is the simplest and a commercially important aldehyde. According to a TechSci Research report, "India Formaldehyde Market Study, 2011 – 2025", the market of formaldehyde in India is anticipated to grow at a CAGR of over 4% during 2016-2025. The Indian formaldehyde is projected to grow at a CAGR of 6% during 2021-2030 on account of growing focus towards roofing mat application and the surging demand for wood based articles in India. In order to construct the unit various machineries will be installed such as Evaporator, Methanol Separator, Methanol RO Water Mixing Tank, Super Heater with cyclone, Heat Exchanger, RO Water Plant, Cooling Tower, Absorption Columns etc. In addition, Fire Hydrant Line, separators manufacturing machines. There is no wastewater generation from the process. 13.7 KL/once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Domestic wastewater will be treated in a septic tank and will be reused for green area demand. Prior to arriving at a conclusion regarding establishment of proposed project, a number of alternatives were examined and reviewed. The options considered are:

- Project Location
- Environmental
- Sensitivity Technology

5.2 SELECTION OF LOCATION

No alternate site is considered for the proposed project as the said project falls under notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde manufacturing unit. Copy of Provisional

Allotment letter is attached along as **Annexure-1**. Land Documents including Possession letter and Agreement to Lease are enclosed as **Annexure 2(b) & 2(c)**.

Site selection was guided by many factors like infrastructure in the area, availability of land, water sources, fuel transportation, power availability etc. Specific Site Selection Criteria for the proposed project have been given below:

- Project is located in the industrial zone.
- Already established industrial environment and necessary infrastructure.
- The project is located at a distance of 1 km from Dadasiba Road which is further connected to National Highway-503 (NH-503) at a distance of 8.30 km from the project site.
- Both skilled and un-skilled labour is available.
- Easy availability of infrastructure facilities.
- No forest land needs to be converted for industrial use.
- There is enough land available for the development of greenbelt.
- There are no metropolitan cities within 10 km of area.

The State can be benefited from the project in the following ways:

- There will be direct employment of people in the plant.
- Preference will be given to the people of state possessing requisite skills and qualification criteria.
- Also, there will be lot of scope for indirect employment of the people of state in and around the project.

5.3 ENVIRONMENT SENSITIVITY OF THE LOCATION

1. Pong Dam lake wildlife sanctuary is situated at a distance of approx. 2.60 km from the project boundary. There is no Tiger Reserve, Elephant Reserve, Turtle Nesting Ground within 10 km radius from the project.
2. There is no Archeological Monument/Defense installation within 10 km radius from the project.

3. There is no Forest land involved in the project.

The distance of Eco sensitive zone of the said sanctuary is approx. 1.68 km from the project site.

5.4 SELECTION OF TECHNOLOGY

Best technology will be used in proposed unit. The unit will run on Zero Liquid Discharge based technology and all the necessary steps will be adopted to protect the environment.

Organized method for manufacturing of formaldehyde will be used in the unit and shall be maintained. It will remain environmentally sustainable project after completion. It will attract people to develop organized formaldehyde manufacturing industry.

CHAPTER 6.0

ENVIRONMENTAL MONITORING PROGRAMME

6.1 INTRODUCTION

Environmental Monitoring is an essential tool for sustainable development and ensuring most effective implementation and monitoring of Environmental Management Plan and mitigation measures. The monitoring and evaluation of the management measures envisaged are critical activities in implementation of the project. Monitoring involves periodic checking to ascertain whether the activities are going according to the plans. It provides the necessary feedback for project management to keep the program on schedule. The purpose of the environmental monitoring plan is to ensure that the envisaged purpose of the project is achieved and results in desired benefits.

To ensure the effective implementation of the proposed mitigation measures, the broad objectives of monitoring plan are:

- To evaluate the performance of mitigation measures proposed in the EMP.
- To evaluate the adequacy of Environmental Impact Assessment.
- To suggest improvements in management plan, if required.
- To enhance environmental quality.
- To implement and manage the mitigative measures defined in EMP.
- To undertake compliance monitoring of the proposed project operation and evaluation of mitigative measures.

The detailed monitoring of emissions and effluent sources for different environmental parameters will be carried out as per the present norms of Himachal Pradesh State Pollution Control Board (HPSPCB), Central Pollution Control Board (CPCB) and MoEF&CC. Monitoring methodologies follows standard methods prescribed by Central Pollution Control Board (CPCB), Bureau of Indian Standards (BIS), USEPA, etc.

6.2 MONITORING PARAMETERS

- Ambient Air Quality
- Stack Monitoring

- Ground Water Quality
- Waste Water Quality
- Noise Level monitoring
- Soil monitoring, etc.

6.2.1 AMBIENT AIR QUALITY

Presently, Ambient air quality has been monitored regularly in accordance with PPCB/CPCB guidelines. The ambient air has been monitored twice in a week (according to Central Pollution Control Board) at eight locations including project & around the project area in one season. The parameters monitored are as per National Ambient air quality Standards, 2009 as given in Table 6.1.

Table 6.1: Ambient Air Quality-No. of Stations and parameters

Description	Number of Monitoring Stations
Ambient Air Quality	2
Parameters	PM ₁₀ , PM _{2.5} , SO ₂ , NO ₂ , NH ₃ , O ₃ , CO, Pb, As, Ni, BaP, Benzene

In addition, during operational phase monitoring of all these parameters will be done at project location on six monthly bases through NABL/MoEF&CC/HPPCB approved lab.

6.2.2 STACK EMISSIONS

Periodical monitoring of stack for PM, SO₂, NO_x & CO will be done to assess performance of pollution control facilities installed at the unit as per IS-11255. Emissions from all stacks shall be monitored once a quarter using manually operated stack emissions monitoring equipment. However, frequency of monitoring may be increased if required in accordance with directions of HPPCB/CPCB or other statutory authorities.

6.2.3 GROUND WATER QUALITY

Ground water has been sampled to check for possible contamination and to ascertain the trend of variation in the water quality, if any. In case any adverse trend is noticed, immediate remedial measures shall be taken. Ground water sample has been collected and analyzed to set the baseline of drinking water quality.

In addition, during operational phase monitoring of all ground water parameters will be done at project location on six monthly bases through NABL/MoEF&CC approved lab.

6.2.4 SURFACE WATER QUALITY

One surface water has been sampled from two locations within study area and analyzed for important physico-chemical & biological parameters to establish quality of water prevailing in study area and to check for possible contamination, if any. SW samples were collected from Beas River located within 10 km radius of project as most of the Khads and distributaries present within study area of project are seasonal and no water was present during the study period.

6.2.5 WASTE WATER QUALITY

There is no wastewater generation from the process. 13.7 KL/once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Condensate from evaporator will be reused to meet the cooling water demand. 2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.

6.2.6 NOISE MONITORING

Ambient noise levels have been monitored at 8 locations which include 3 locations within 2 km radius of the project as well as 5 locations within project site during day time (6 AM to 10 PM) and night time (10 PM to 6 AM) as per Environment Protection Act GSR 1063(E) Schedule III at Industrial, Commercial, Residential and Silence Zone to set the baseline.

In addition, during operational phase noise monitoring will be done at project location on six monthly bases through NABL/MoEF&CC approved lab.

6.2.7 SOIL SAMPLING

Soil has been monitored from 8 locations within the study area to set the baseline of soil quality and two locations (one from project and one from nearby agricultural land) to study the microbial species present in the soil.

In addition, during operational phase monitoring of all soil parameters will be done at project location on six monthly bases through NABL/MoEF&CC approved lab.

6.2.8 OCCUPATIONAL HEALTH & SAFETY MONITORING

Occupational health and safety monitoring programs verify the effectiveness of prevention and control strategies. The selected indicators are representative of the most significant occupational, health and safety hazards and the implementation of prevention and control strategies. The performance and achievements of the OHSMS responsible for all management of all environment, Health & Safety aspects are re-assessed on annual basis. The occupational health and safety monitoring program includes:

- Feel Organic Products will carry out inspection and testing of all safety features and hazard control measures for plant operation. This includes regular inspection and testing of all safety features and hazard control measures focusing on engineering and personal protective features, work procedures, place of work, installations, equipment and tools used. The inspection verify that issued personal protective equipment (PPE) continues to provide adequate protection and will be worn as required.
- All instruments to be installed will be regularly tested and calibrated and the respective records will be maintained.
- Surveillance of the working environment will be carried out.
- Surveillance of worker's health: When extraordinary protective measures will be required, workers will be provided appropriate and relevant health surveillance prior to first exposure and at regular intervals thereafter. M's Feel Organic Products will provide appropriate and relevant occupational health & safety measures to workers at the time of appointment and at regular intervals thereafter.

6.2.9 INDUSTRIAL SAFETY TRAINING

Various trainings to employees on safety, health and environmental aspects and technology and ergonomic issues will be provided time to time or as per requirements. Emergency exercises including fire drills will be documented adequately.

6.2.10 HOUSE KEEPING

Separate area for the storage of raw materials is designated, so that the working area will be kept clean. Proper maintenance and cleaning of the equipment's will be done as per requirement. Solid waste generated will be kept in specific area earmarked. Regular cleaning will be done on

working platforms, equipment's and machinery and connecting pathways and plant premises will be recommended for proper housekeeping, effectiveness in working and preventing health hazard and breakthrough of diseases.

6.2.10.1 ACCIDENTS & DISEASES MONITORING

These systems enable workers to report immediately to their immediate supervisor in any situation, which they believe can led to serious danger to life or health. The systems and the employer further enable and encourage workers to report to management.

- Occupational injuries;
- Suspected cases of occupational disease; and
- Dangerous occurrences and incidents.

All reported occupational accidents, occupational diseases, dangerous occurrences and incidents together with near misses will be duly investigated with the assistance of a person knowledgeable/competent in occupational safety. The investigation covers the following:

- Establish what happened;
- Determine the cause of what happened;
- Identify measures necessary to prevent a recurrence.

6.2.11 PERIODIC PREVENTIVE MAINTENANCE

A detailed maintenance schedule will be in place for all equipment. Maintenance will be done strictly as per schedule and guidelines furnished by equipment manufacturer. All pollution control, monitoring and safety equipment will be periodically checked and calibrated.

6.3 BUDGET AND PROCUREMENT SCHEDULE

Environment Management Cell, on regular basis, inspects the necessity and availability of the materials, technologies, services and maintenance works. The Cell makes appropriate budget for the purpose. Regular record review for any change in financial requirement of environment management will be done and appropriate budgetary provisions will be made. Along with other budgets, environmental management budget will be prepared and revised regularly as per requirement. The budget includes provisions for:

- Environmental Monitoring Program
- Emergency Purchase of necessary materials, equipment, tools, services, etc.
- Landscape development
- Social and Environmental Welfare and Awareness programs training including CER
- Annual Environmental Audit.

Table 6.2: Cost of Environmental Monitoring Program

S. No.	Particulars	Parameters	Frequency	Methods of sampling	Approx. Recurring cost per annum (in lakhs)
1.	Ambient Air Monitoring	PM _{2.5} , PM ₁₀ , SO ₂ , CO & NO ₂	Quarterly, Project location	IS-5182 Part-14	1
2.	Stack Emission Monitoring	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , CO, HC	Quarterly, DG sets, furnace stacks	IS-11255 Part-1	0.5
3.	Treated Effluent Monitoring	pH, BOD, COD, Oil, Grease & Total Suspended solids	Quarterly, Inlet & Outlet of STP	IS-3025 Part-1	1
4.	Noise Level Monitoring	24 Hrs. Noise Level	Every Six Months, Project location	IS-9989-1981	0.5
5.	Water Quality Monitoring	Drinking Water Specifications as per IS 10500	Quarterly, project location	IS-3025 Part-1	1
6.	Soil Monitoring	pH, Conductivity, Moisture Content, Organic Matter, Texture, Bulk Density	Every Six Months, project location	IS: 2720	1
Total					5 Lakhs

6.4 SUMMARY

The environment monitoring plan enables environmental management system with early sign of need for additional action and modification of ongoing actions for environment management.

improvement and conservation. The environmental monitoring points will be decided considering the environmental impacts likely to occur due to the construction of project as the main scope of monitoring program is to track, timely and regularly, the change in environmental conditions and to take timely action for protection of environment. Monitoring of environmental samples will be done as per the guidelines provided by MoEF&CC/CPCB/HPSPCB. Separate records for water, wastewater, solid waste, air emission and soil will be prepared and preserved regularly. Along with other budgets, environmental management budget will be prepared and revised regularly as per requirement.

CHAPTER 7.0 ADDITIONAL STUDIES

7.1 GENERAL

The outline of the pre-project environmental status and the impact assessment of proposed project along with proper mitigation measures have been duly addressed in the previous Chapters. This Chapter briefly encompasses the additional aspects that were also dealt upon while conducting EIA study for the establishment of proposed project.

OBJECTIVES OF RISK ASSESSMENT:

Industrial accident results in great personal & financial loss. Managing these accidental risks in today's environment is the concern of every industry including Chemical also, because either real or perceived incidents can quickly jeopardize the financial viability of a business. Many facilities involve various manufacturing processes that have the potential for accidents which may be catastrophic to the plant, work force, and environment or public.

The main objective of the risk assessment study is to propose a comprehensive but simple approach to carry out risk analysis and conducting feasibility studies for industries and planning & management of industrial prototype hazard analysis in Indian context.

7.2 PUBLIC CONSULTATION

Public hearing is a very significant part of the process of public participation envisaged under guidelines issued by MoEF&CC, Government of India. It facilitates involvement of all the stake holders of the project which is essential for ensuring smooth running of the proposed project and benefitting all section of society in the process of economic development of the region. Public hearing for establishment of the unit will be conducted by Himachal Pradesh State Pollution Control Board (HPSPCB). The proceedings of the same will be incorporated in the final EIA report.

7.3 ENVIRONMENTAL RISK ASSESSMENT & DISASTER MANAGEMENT PLAN

M/s Feel Organic Products is proposing to construct a unit for manufacturing of formaldehyde 100 KLD.

The risk assessment involves the following:

- Hazard Identification
- Vulnerability Analysis
- Risk Analysis
- Emergency Plan

7.3.1 Hazard Identification

The project is construction of a unit for manufacturing of formaldehyde. There may be following types of hazards:

7.3.1.1 Natural Hazard

1. Earthquake
2. Flooding: Due to heavy rainfall

7.3.1.2 Manmade Hazard

- Fire & Explosion
 - Explosive material
 - Chemicals
 - Short circuiting
 - Chemical
 - Chemical storage
 - Oil storage
 - Leakage from process
- Electrical
 - Electrical room
 - Non insulated wires
- Mechanical/Accident
 - Raw material handling
 - Equipment's area

- Transportation
- Thermal
 - Thermic Fluid Heater

7.3.1.3 Vulnerability Analysis

The vulnerable analysis is done on all the hazards as below:

Table 7.1 Vulnerable Analysis

Hazard Identification	Severity (1-5)	Likelihood (1-5)	Severity x likelihood (1-25) (Hazards scoring 1-12 are less serious hazards & 13-25 are very serious hazards & need prior attention)	During installation	During operation
Natural Hazard					
Earthquake	5	2	10	For immediate areas of installation	For the complete formaldehyde manufacturing unit
Flood	5	1	5	For immediate areas of installation	For the complete formaldehyde manufacturing unit
Manmade Hazard					
Fire & explosion	5	3	15	For all working areas	For the complete formaldehyde manufacturing unit
Electrical	3	2	6	For all working areas	For all working areas
Mechanical	4	3	12	Cranes &	For all the

				Machineries	machinery used in process DG set room
Thermal	4	2	8	Overall area	DG set & thermic Fluid Heater room
Chemical	4	4	16	Storage area of chemicals	Storage area of chemicals. Process area

7.3.1.4 Risk Analysis

The probability of harm or likelihood of harmful occurrence and its severity. Environmental risk is a measure of the potential threats to the environment, life and property. Risk also depends on number of people exposed to hazard.

Risk analysis provides severity of harm from particular type of hazard.

i. Earthquake

The area under study falls in Zone-V, according to the Indian Standard Seismic Zoning Map. Suitable seismic coefficients in horizontal and vertical directions respectively, have been adopted while designing the structure.

ii. Flooding

The project site is located in Chanour Kdad which is a seasonal khad and remains dried throughout the year and has not faced a flood like situation in the last 25 years. However, flooding can occur due to excess of rain, so proper drainage will be maintained.

iii. Fire & Explosion

Fire is mainly caused due to carelessness. Since it is the establishment of formaldehyde manufacturing industry, fire can occur due to exposure of chemicals used in the process to electrical spark or vapor from chemical storage tanks.

iv. Electrical

The electrical current can pass to the floor & metals due to inadequate insulation or accidently.

v. **Mechanical**

The mechanical fault can cause the risk & hazard. Mechanical hazards are created by powered operation of equipments or tools.

vi. **Radiation**

Due to use of wireless equipments there may be electromagnetic radiation.

vii. **Thermal**

Thermal heat can be generated from the process machinery, D.G. sets, boiler and the vehicles in the area. Thermal hazards are objects or substances that transfer energy as heat.

viii. **Chemical**

All the chemical used in process have risk of leakage during handling, storage and transferring.

7.3.2 On-Site Emergency Plan

An onsite emergency is caused by an accident or hazard that takes place within the plant area and the effects are confined to the plant area.

The onsite emergency plan consists of following key elements:

- Planning as per hazard analysis
- Preventive measures
- Emergency response procedure
- Recovery procedure

7.3.2.1 Planning

Mapping of hazard vulnerable area:

- There shall be a team of members known as ERT-Emergency Response Team who will take care of any disaster at site.
- The ERT comprises of following members:
 - Site controller (Administrator of complex)
 - Incident controller (Asstt. Administrator)
 - Personal Manager

- Communication Officer
- Fire Officer
- Security Officer
- Engineering Incharge
- Fire pump attendant
- First Aid Team

7.3.3 Preventive Measures

7.3.3.1 Earthquake

The project will be situated at Seismic Zone-V area. Special attention will be given to the structural design of foundation, elements of masonry, timber, plain concrete, reinforced concrete, pre-stressed concrete and structural steel. All applicable guidelines have been followed in this regard to ensure safety of the building.

7.3.3.2 Flooding

Proper designing of drainage system for domestic as well as storm water will done.

7.3.3.3 Fire and Life Safety

Safety Precautions

1. Smoking will be prohibited.
2. Vehicle access will be strictly controlled.
3. Ventilation will be sufficient to cope with the maximum expected vapor levels in building.
4. Storage tank vents to atmosphere is sized for fire heated emergency vapor release.
5. Electrical equipment will be explosion-proof to meet national electrical code requirements.
6. Dry chemical extinguishers will be accessible for small fires. An adequate supply of handled and wheeled types is available.
7. Hydrants will be strategically placed with adequate hoses.

8. Small spills will be remediated with sand, earth, or other non-combustible absorbent material, and the area then flushed with water. Larger spills will be diluted with water and diked for later disposal.

Precaution in case of Fire

In proposed industry, all practicable measures will be taken to prevent outbreak of fire and its spreads, both internally and externally, to provide and maintain:

- Safe means of escape for all person in the event of a fire, and
- The necessary equipment and facilities for extinguishing fire.

Effective measures will be taken to ensure that all the workers are familiar with the means of escape in case of fire and have been adequately trained in the routine to be followed in such areas:

Firefighting Personal Protective Equipment

Due consideration is being given to hazards from chemical and heat exposure. Therefore, fire-fighters wear full face, positive pressure, self-contained breathing on an airline. Chemicals protection is provided with impervious clothing, gloves and footwear. Suitable materials include polyvinyl plastic, neoprene or rubber.

7.3.3.4 Raw Material Requirement (for production of Formaldehyde):

Raw material required for the manufacturing of Formaldehyde (i.e. Methanol) directly purchased from original importers from local market along with the possibility from other network in Delhi and nearby states.

Table 7.2: Raw Material Requirement

S. No.	Particular	Quantity	Source of the Raw Material & Mode of Transportation
1	Methanol	46 KLD	Local nearby Market
2	Water	82 KLD	Borewell
3	Silver Granular	120 Kg	Local nearby Market
4	HSD Fuel (for Boiler)	350 Tonnes/annum	Sourced from local market & transported via road network

Chemical Handling

- Workers wash their hands thoroughly after handling of chemicals.
- Chemicals will be used only in a well-ventilated area.
- Spark-proof tools and explosion proof equipment will be used.
- Avoid contact with eyes, skin and clothing.
- Containers will be kept tightly closed.
- Avoid contact with heat, sparks and flame.
- Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, sparks or open flames.
- Operator training as well as written operating instructions, safety rules and check lists will be provided.

Protective Protection:

Source of Exposure

Human exposure to chemicals can occur via absorption, contact with the eyes, inhalation or ingestion.

First Aid Measures

1. In case of chemicals come in contact with the skin, remove contaminated clothing. Wash with soap and water for 15 minutes. Seek medical attention if irritation occurs.
2. In case of chemicals contact with the eyes, flush immediately with gently running water for a minimum of 15 minutes, ensuring all surfaces and crevices are flushed by lifting lower and upper lids. Obtain medical attention.
3. In case of inhalation of chemical's vapours, remove the individual to fresh air, but only if it is safe to do so. Asphyxiation from vapours may require artificial respiration. Due to the responsibility of delayed onset of more serious illness, it is important to obtain medical attention.
4. Ingestion of chemicals is life threatening. Onset of symptoms may be delayed for 18 to 24 hours after ingestion. Do not induce vomiting. Transport to medical attention. The individual should remain under close medical care and observation for several days.

Chemical Storage

- Chemicals are kept away from heat, sparks and flame. Keep away from sources of ignition. Store in a tightly closed container.
- Chemicals have been stored in a cool, dry, well-ventilated area away from incompatible substances. Specific storage is given as per chemicals storage requirement.
- Storage & handling area is readily accessible with safety showers, fire extinguishers and other fire-fighting equipment, water hydrants with spray nozzle and other emergency equipment such as chemical proof suits and respiratory apparatus.
- The flammable materials have been stored in a separate safety storage room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place.
- Spills/Leaks: Spills will be absorbed with inert material (e.g. vermiculite, sand or earth), then will be placed in suitable container. All sources of ignition are removed and a spark-proof tool are used. Ventilation has been provided and a vapour suppressing foam is used to reduce vapours.

7.3.3.5 Details of finished products:

Table 7.3 Details of Finished Products

S. No.	Product	Quantity (KLD)	Storage	Physical state
1	Formaldehyde (37%)	100	MS TANK (lined with FRP)	Liquid

7.3.3.6 Hazardous Substances & Chemicals

Some of the raw materials, solvents, fuels and products are classified as hazardous substances. Based on the physical, thermal, chemical and biological properties available from the Material Safety Data Sheets (MSDS) of the various substances handled in the proposed project, the hazardous substances are identified. To prevent and control risk and damage, all the raw materials shall be stored in leak proof MS SS tanks at a secured and contained location with proper safety measures, MSDS is displayed at all the prominent sites.

7.3.4 Mechanical

Mechanical hazards are created by powered operation of equipments or tools.

Mechanical hazards can occur at:

1. Process machinery
2. DG set room
3. Vehicular Movement

Following preventive measures are being taken:

1. Periodic replacement of critical components of machine.
2. Proper training to operators of machines.
3. Safe distance demarcating on heavy machines like cranes (during construction)
4. Sign of danger at the hazard places.

7.3.5 Thermal

Thermal hazards are objects or substances that transfer energy as heat.

Formaldehyde manufacturing unit can have following points of thermal hazard:

- Open flame
- Thermic Fluid Heater
- Hot machines equipments

The thermal hazard can cause burn of skin; following protective measures can be taken:

1. The open flame area like canteen has restricted entry.
2. Thermic fluid heater section is properly insulated and safe distance & guard has been installed.
3. D.G set room & Thermic fluid heater section, etc. has restricted entry.
4. Operators in the thermal hazard area has been provided with protective gears like gloves, goggles etc.
5. For emergency first aid room is well maintained.

7.3.6 Emergency Response Procedure

Even after all the preventive measures for any emergency following infrastructure has been provided:

1. There is an Emergency Control Room.
2. Assembly area is demarked for industry.

3. Communication system has been installed which includes intercom and public addressing system.
4. Fire alarm has been installed at vulnerable place.
5. The safe zones (at the time of emergency) have been displayed at different locations.
6. First Aid facility has been made available at control room.

In case of emergency following actions shall be taken;

1. The emergency shall be declared in case of following:
 - i. Fire alarm buzzing (Fire hazard)
 - ii. Vibration/Earthquake feeling (Earthquake)
 - iii. Water logging above 30cm (Flood)
 - iv. Any unusual smell of gas or suffocating feeling (Chemical Leakage)
 - v. Security alarm from main gate. (Security risk/Terrorism)
2. Onsite declaration of emergency, communication shall be made to residents for any type emergency.
3. All the resident of the affected area shall be moved to safe zone.
4. The control measures shall be done as per the emergency action plan for each type of hazard.
5. All the members of disaster management cell shall take charge of their respective duties.
6. Outside help like fire tender, police ambulance etc. shall be called by site controller or incident controller.

Table 7.4: List of hazardous chemicals along with their toxicity levels as per MSIHC rules

S. No.	Chemicals	TLV	Toxicity level			Flammable limit					Chemicals
			LD50	LD50	LC50	LEL	UEL	FP° C	BP° C	Class	Class
			Oral mg/kg	Derma 1 mg/kg	Mg/l						
1.	Formaldehyde (37 %)	0.3/1 ppm	100	270	203	6	36.5	50° C	9.6° C	B	Flammable , toxic, hazardous
2.	Methanol	200 ppm	5628	15800	64000 ppm/ 4hr	6	36.5	12° C	64.5° C	A	Highly flammable
3.	Silver Catalyst	0.1mg/m ³	N.A.	N.A.	N.A.	N.A.	N.A.	-38° C	2210° C	-	Acute Toxic

The Toxicity level of hazardous chemicals as per Manufacture, storage and import of Hazardous Chemical (Amendment) Rules, 2000 (MSIHC) is shown as below in **Table 7.5** and **Table 7.6**:

Table 7.5: Toxicity index as per MISHC rules 2000

S. No.	Toxicity	Oral ToxicityLD 50(mg/kg)	Dermal ToxicityLD50 (mg/kg)	Inhalation ToxicityLD 50(mg/kg)
1.	Extremely	<5	<40	<0.5
2.	Highly	>5-50	>40-200	>0.5-2.0
3.	Toxic	>50-200	>200-1000	>2.0-10

Table 7.6: Possible Hazardous Locations Onsite

S. No.	Hazardous Area	Likely Accident
1.	Boiler Area	Explosion
2.	Methanol and Formaldehyde storage area	Fire & toxic exposure
3.	Electrical rooms	Fire and electrocution
4.	Transformer area	Fire and electrocution
5.	Cable tunnel	Fire and electrocution
6.	Fuel storage area (HSD)	Fire hazard
8.	Chimney	Air pollution

7.3.6.1 Disaster Control Management System

Disaster management group plays an important role in controlling emergency in a systematic manner. Schematic representation Emergency control management system for M/s Feel Organic Products is shown below:

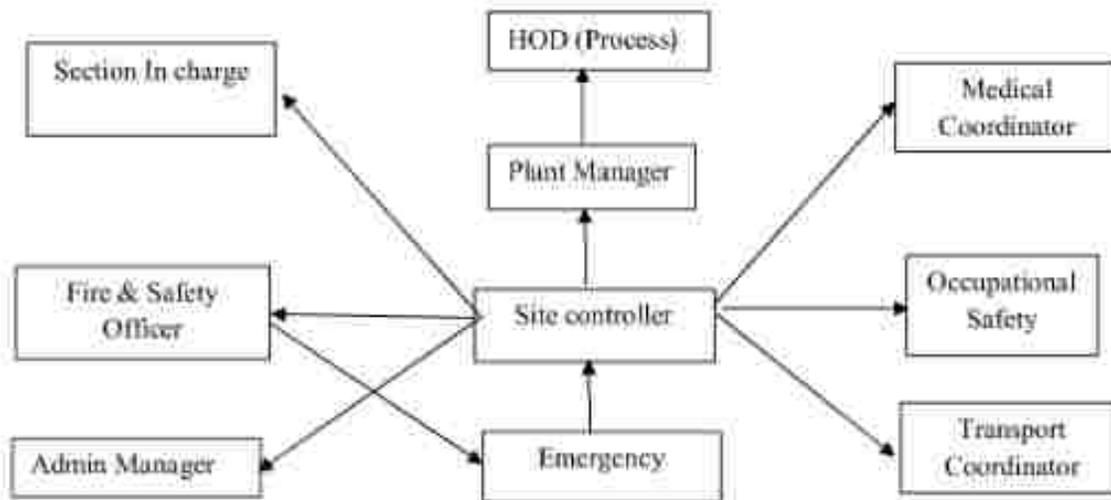


Figure 7.1: Onsite DMP - Disaster Control / Management System

7.3.7 Recovery Procedure

The recovery procedure will depend on the type of emergency. Recovery procedure shall be followed by engineering section to restore the essential services.

The PLI (Public Liability Insurance) will be done as a part of off on site emergency plan.

7.3.8 OFF SITE MANAGEMENT PLAN

If an accident takes place in an industry/ unit & its impacts are felt outside its premises, the situation is called an "Offsite Emergency". To meet such Emergencies, an Off-site Emergency Plan is required to be prepared.

Cause of off-site emergency

In a chemical industry, the chemical storage room, chemical handling area & transportation of the chemicals may cause off- site emergency to occur.

The project involves use of Methanol which is the hazardous chemical out of those being used in the process.

VULNERABILITY ANALYSIS

The vulnerable analysis is done for all the hazards that may cause offsite emergency as given

below:

Activity	Hazard	Severity (1-3)	Likelihood (1-3)	Severity x likelihood (1-6) (1 - Hazard With Least Concern & 9 - Hazard With Highest Concern)	Vulnerability
Chemical Transportation	Spillage/ leakage	2	1	3	Approximately 50 m But dangerous if enters any water body, as it may
	Fire/ Explosion	3	1	3	Approximately 250 m
	Accident	2	1	2	Approximately 20 m
Chemical Storage & Handling	Spillage	2	1	2	Within the storage room.
	Fire/ Explosion	3	1	3	Approximately 250 m
	Accident	2	1	2	Storage area of chemicals. Process Area Nearby Areas

PREVENTIVE MEASURES

During Transportation

Following measures shall be adopted to ensure safe transportation:

- The transportation of the raw material, chemicals & products shall be done in Leak Proof MS Tanks while transporting through trucks.
- Special refer trucks shall be employed for transportation from the port to the site.
- Cushion shall be provided to the materials to prevent chemical container breakage.
- Safety data sheets shall be kept & Labeling shall be done on the tanks used for transportation of the chemicals.
- A sheet listing the materials being transported shall be available in the vehicle and the



emergency phone numbers shall also be listed.

- Workers/ driver shall be trained for MSDS & handling of these chemicals.
- Proper First Aid facility shall be provided within the transportation vehicle in case of any accidental release.
- The shipping paper of vehicles used for transportation of hazardous chemicals should be proper & vehicles shall not be overloaded.

7.3.8.1 During Storage & Handling

- Based on the physical, thermal, chemical and biological properties available from the material safety data sheets (MSDS) of the various substances handled in the proposed project, the hazardous substances are identified. Out of the chemicals used, MDI is toxic and falls under Group 2 of the list notified under M.S.I. of Hazardous Chemical Rules (1989).
- To prevent and control risk and damage, all the raw material are stored in leak proof MS/SS tanks at a secured and contained location with proper safety measures. MSDS is displayed at all the prominent sites
- MDI is being stored in drums under refrigerated condition (-5 to -15°C)
- Handling is being done as per NIOSH guidelines
- There is no common drainage lines or water bodies near the chemical storage room to avoid contamination of water upto long distances.

7.3.8.2 Emergency Response Procedure

Under the 'Manufacture, Storage and Import of Hazardous Chemicals Rules' preparation of 'Off-site Emergency Plan' is covered in Rule No.14. The duty of preparing and keeping up to date the 'Off-site Emergency Plan' as per this rule is placed on the District Emergency Authority. Also, occupiers are charged with the responsibility of providing the above authority with such information, relating to the industrial activity under their control, as they may require for preparing the off-site emergency plan.

As per the rules, the main component of the Off-Site Emergency Plan is coordination with the District Authority. The District Authority (i.e. District Collector, Factory Inspector etc.) in conjunction with the company & nearby industries under mutual aid scheme and relevant



emergency services should have an off-site emergency plan considering the following:

- Incidents at the site including fires and/or explosions would likely cause concern among local population. Although, the unit does not fall in residential area & does not have any residential premises in the vicinity, the people will be advised to stay away from the area, and relevant actions shall be followed.
- In addition to company's own Emergency control center (Incident Controller Phone No: EXT: 444), the following "local" external agencies will also be involved in the formulation of procedures for off-site incidents and in response to any incident;

Other external agencies that will also be involved in response to any incident are:

- Traffic Police;
- Fire services available with nearby industries;
- Civil Authority;
- Factory Inspector;
- State Pollution Control Board; etc.
- Rapport liaising system with the above mentioned agencies shall be developed for better coordination to deal with any emergency.

The following aspects shall be addressed in any detailed response to an off-site incident:

Organization: details of command structure, coordination arrangement, implementation procedures, emergency control centers. The organizational chart to deal with the emergencies (onsite & off site) is given ahead.

Communication: identification of personnel involved, communication center, lists of telephone numbers (as given above) etc.

Specialist Emergency Equipment; details of availability & location of heavy lifting gear bulldozers, specialized firefighting equipment;

Specialist Technical Knowledge; details of organization or individuals whom it may be necessary to call e.g. for specialized chemical knowledge, impact knowledge etc.;

Mutual Aid Scheme: details of companies in this scheme and available facilities with them & their phone nos.;

Meteorological Information Sources; arrangements for obtaining details of weather conditions prevailing and weather forecast on regular basis;

Humanitarian Arrangements; details of provisions for transport, evacuation routes and centers, food, treatment of injured etc.;

Public Information; arrangements for dealing with the media, informing relatives of employees and local population;

Incident Assessment; arrangements for collecting information on incident causes and reviewing the efficiency and effectiveness of all aspects of the emergency plan;

Efficient off-site incident planning also involves interaction on regular basis among various organizations. To ensure that every procedure put in place will run efficiently and effectively, exercise (mock drills) involving all the relevant organizations will be carried out. These will be monitored and assessed with procedures updated to reflect knowledge gained.

ROLES & RESPONSIBILITIES OF EXTERNAL AGENCIES

The roles of the various parties that may be involved in the implementation of an off-site plan are described below:

A) ROLE OF THE POLICE

- Protecting life and property and controlling traffic movements.
- Controlling bystanders, evacuating the public, identifying the dead and dealing with casualties and informing relatives of dead or injured.

B) ROLE OF THE FIRE AUTHORITIES

- The control of a fire is normally the responsibility of the senior fire brigade officer who would take over the handling of the fire from the site incident controller on arrival at the site.
- Fire authorities having major hazard works in their area should have familiarized themselves with the location on site of all stores of flammable materials, water and foam supply points and fire-fighting equipment.

C) ROLE OF THE HEALTH AUTHORITIES

- Health authorities, including doctors, surgeons, hospitals, ambulances and so on, have a vital part to play following a major accident and they should form an integral part of any emergency plan.



D) ROLES OF THE GOVERNMENT SAFETY AUTHORITY

- In the event of an accident, local arrangements regarding the role of the factory inspector will apply.
- In the aftermath, factory inspectors may wish to ensure that the affected areas are rehabilitated safely.

Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996 prescribes for the constitution of the State Crisis Group as apex body at the State Level to deal with major chemical accidents and to provide expert guidance for handling major chemical accidents and for the constitution of District and Local Crisis Groups.

A. Functions of the State Crisis Group

- i. Review all district off-site emergency plans in the State with a view to examine its adequacy in accordance with the Manufacture, Storage and Import of Hazardous Chemical, Rules and forward a report to the Central Crisis Group once in three months;
- ii. Assist the State Government in the planning, preparedness and mitigation of major chemical accidents at a site in the State;
- iii. Continuously monitor the post-accident situation arising out of a major chemical accident in the State and forward a report to the Central Crisis Group;
- iv. Review the progress report submitted by the District Crisis Groups;

B. Functions of the District Crisis Group

- i. Assist the preparation of the district off-site emergency plan;
- ii. Review all the on-site emergency plans prepared by the occupier of Major Accident Hazards installation for the preparation of the district off-site emergency plan;
- iii. Assist the district administration in the management of chemical accidents at a site lying within the district;
- iv. Ensure continuous information flow from the district to the Centre and State Crisis Group regarding accident situation and mitigation efforts;
- v. Forward a report of the chemical accident to the State Crisis Group; and Conduct mock-drill of a chemical accident at a site each year.



C. Functions of the Local Crisis Group

- i. Prepare local emergency plan;
- ii. Ensure dovetailing of the local emergency plan with the district off-site emergency plan;
- iii. Train personnel involved in chemical accident management;
- iv. Conduct at least one full scale mock-drill of a chemical accident at a site every six months and forward a report to the District Crisis Group; and
- v. Respond to all public inquiries on the subject.

Recovery Procedure

The recovery procedure will depend on the type of emergency. Recovery procedure shall be followed by engineering section to restore the essential services.

EMERGENCY CONTROL TEAM

Key Personnel

The key Personnel involved in Emergency (Onsite & Offsite) are given below:

1. Emergency Controller - Plant Head
2. Incident Controller - Poly Shift in charge
3. Security Supervisor
4. HOD - Utility & EHS
5. Safety Officer
6. Fire fighter
7. Evacuation members [Emergency Response Team (ERT) Members]
8. First Aid provider
9. Rescue members

7.3.9 OFF SITE EMERGENCY PLANNING

OCCUPATIONAL HEALTH & SAFETY

Action plan for the implementation of OHS standards as per OSHAS shall be followed as given below:

- Occupational health surveillance programme will be done regularly after six monthly & and their records will be maintained.

- At project site in case of emergency First Aid facility will be provided. A room shall be provided separately with provision of bed.
- Health check-up camps will be organized regular basis at company dispensary / nearby locations for nearby peoples to evaluate exposure of the workers to chemicals during pre-placement and periodical medical monitoring.
- Prior to working with chemicals, workers will be trained regarding proper handling & storage.
- To educated/ train the workers for MSDS & handling of these chemicals.
- Proper medical facility arrangements will be provided in case of any accidental release.
- Label Precautions and First Aid facility will be provided.
- Emergency plan will be prepared and mock drill of the on-site emergency will be conducted.
- Employers and employees will be made aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses.
- Inspection of the industrial activity will be done at least once in year and annually status report on the compliance with the Rules is being submitted.
- A safety officer / environmental officer will be recruited and lead all the safety issues related to man, machine & materials.
- Exterior refuge or safe areas include parking lots, open fields or streets which is located away from the site of the emergency and which provides sufficient space to accommodate the employees.

Personal Protective Equipment

The level of risk of exposure to particular chemical will dictate the appropriate level of personal protective equipment (PPE) required, provide wearing side shielded safety spectacles and appropriate gloves, footwear, face shields, respiratory protection, fire-resistant clothing, or chemical suits.

- **Respirators:** A complete respiratory protection program has been instituted. It includes evaluations of workers' abilities to perform tasks while wearing CPC, Regular training of personnel, Fit testing, Periodic environmental monitoring, Regular maintenance, inspection, and cleaning.



- **Clothing:** Workers wear appropriate protective clothing to prevent skin exposure.
- **Skin Protection:** Workers wear solvent resistant gloves and clothing.
- **Eye Protection:** Workers wear splash proof chemical goggles and face shield when working with liquid, unless full face piece respiratory protection is worn.

Eyewash facility and a safety shower: Common work places are equipped with Eyewash facility and a safety shower.

Material Handling Hazards and Controls:

S. No.	Name of material stored	Quantity (max.)	Operating press/temp	Hazard rating systems	Type of hazard or risks involved	Persons affected
1	Formaldehyde	1×100 KLD	NTP	TLV-0.3 Ppm(1ppm) NFPA ratings: Health-3 Flammability -2 Reactivity-0 Flash point- 50°C	-Flammable -Very toxic by inhalation -Very toxic in contact with skin -Very toxic if swallowed -Causes burns -Limited evidence of carcinogenic effect -Risk of serious damage to eyes -May cause sensitization by skin	Operators Maintenance Technicians
Control measures: - Dyke provision to storage tank. - Safety board's displayed in the tank area. - Good ventilation must be provided. - Use of proper PPEs (like SCBA), full body protection suite						
2	Methanol	46 KLD	NTP	TLV-200 PPM (8 hr TWA) STEL-250 PPM NFPA Ratings: Health-1 Flammability	-Highly flammable -Toxic by inhalation -Toxic when contact with skin -Toxic if swallowed	Operators Maintenance Technicians
Control measures:						



- Keep away from sources of ignition
- Safety board's displayed in the tank area
- Effective ventilation must be provided.
- For accidental contact if you feel unwell, seek medical advice immediately
- Handling of methanol with safety gloves and protective clothing
- Use of proper PPEs (like SCBA), full body protection suite

Worker Health Checkup Plan

Feel Organic Products is committed to take care of the health of its employees. Company is conducting pre-employment and post-employment medical tests for its employees besides various educative and awareness programs on health and safety. A full time medical assistance centre is always available to its employees to carry out any first aids.

Pre-Employment Tests: Any employee who joins Feel Organic Products, goes under company prescribed pre-employment medical examination tests from MBBS qualified doctor. The medical fitness reports are required to be submitted on or before joining the organization. If some new employees report for his/her joining without medical examination and fitness report, he/she will not be allowed to join until medical examination and fitness report is produced to HR department. Such incident will also be reported to HR Head.

Annual/Bi-annual Medical Test: Annual/Bi-annual medical tests will be conducted in the months of January and July respectively. All those employees who are exposed to hazardous raw materials/processes, are examined twice a year. Presently, following departments are involved in hazardous process and covered for medical examination:

- i. Poly process
- ii. Spinning Process (Spinning, Burnout and Taken Up)
- iii. Quality Control-Chemical
- iv. Quality Control-Textiles
- v. Mechanical
- vi. Electrical
- vii. Instrumentation
- viii. Packing

Apart from the employees of above mentioned departments, employees of other departments are also covered for medical examination if they are also exposed to hazardous process due to any



reason. The cost of pre-employment and during employment medical examination is borne by company.

Exposure of workers to Raw Materials and Safety Measures:

All our concerned employees are given shop floor and classroom awareness training on hazardous raw materials that are being used. The MSDS data of raw materials is also shared with them for their knowledge and awareness. This detailed data is also made available in medical centre for everybody's information.

Following is the list of Medical Tests/Occupational Health Surveillance program for our employees:

List of Medical Tests

Proposed Practice				Proposed Practice
S.No.	Pre-Employment Medical Tests	Post-Employment Medical Tests		Post-Employment Medical Tests
		Annual Medical Tests (January-February every year)	Bi-Annual Medical Tests (July-August)	
1.	Physical Examination: 1. Chest examination 2. Weight 3. Height 4. Pulse 5. B.P.	Physical Examination: 1. Chest examination 2. Weight 3. Height 4. Pulse 5. B.P.	Physical Examination: 1. Chest examination 2. Weight 3. Height 4. Pulse 5. B.P.	Continue
2.	Urine Routine Examination - Physical examination - Macroscopic	Urine Routine Examination - Physical examination - Macroscopic	NA	Continue



	examination	examination		
3	Stool Routine Examination - Macroscopic examination - Microscopic examination	NA	NA	Continue
4	Hematology - Hemoglobin - TLC - DLC - Polymorphs - Lymphocytes - Eosinophils - Monocytes - ESR (Wintrobe)	Hematology - Hemoglobin - TLC - DLC - Polymorphs - Lymphocytes - Eosinophils - Monocytes - ESR (Wintrobe)	NA	Continue
5	Liver Function Test (LFT) for those workers only directly exposed to chemicals	Liver Function Test (LFT) for those workers only directly exposed to chemicals	NA	Continue (For all the workers)
6	Chest X-ray P.A. view	Chest X-ray P.A. view	NA	Continue
7	Vision test for near & far	Vision test for near & far	Vision test for near & far	Continue
8	Blood Sugar	Blood Sugar	NA	Continue
9	ECG	ECG	NA	Continue
10	Blood Group	Blood Group	NA	Continue
11	Color Blindness Test	Color Blindness Test	Color Blindness Test	Continue

Safety, Health and Environmental (SHE) Management Plan



The company has a written policy for the Safety, Health and Environment Management. Through this policy, the company management commits itself to the following objectives:

- Meet all the relevant laws, regulations and international agreements.
- Conduct its activities safely, protecting the health of all employees and the products users.
- Reduce the adverse environmental impacts to a practicable minimum at an acceptable cost to the company and society.
- Encourage continuous improvement in safety, health and environment performance.

7.4 REHABILITATION AND RESETTLEMENT (R&R)

M/s Feel Organic Products is proposing to construct the unit for manufacturing of formaldehyde at capacity of 100 KLD. The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde manufacturing unit. Copy of Provisional Allotment letter is attached along as **Annexure-1**. Land Documents including Possession letter and Agreement to Lease are enclosed as **Annexure 2(b) & 2(c)**. The project falls in notified Industrial Area as per the notification No. Ind A(F)8-1/2019. Copy of same is attached as **Annexure-3**. The land is vacant to plant the formaldehyde manufacturing unit. Hence, no R&R involved.

7.5 TRAFFIC STUDY

7.5.1 METHODOLOGY ADOPTED

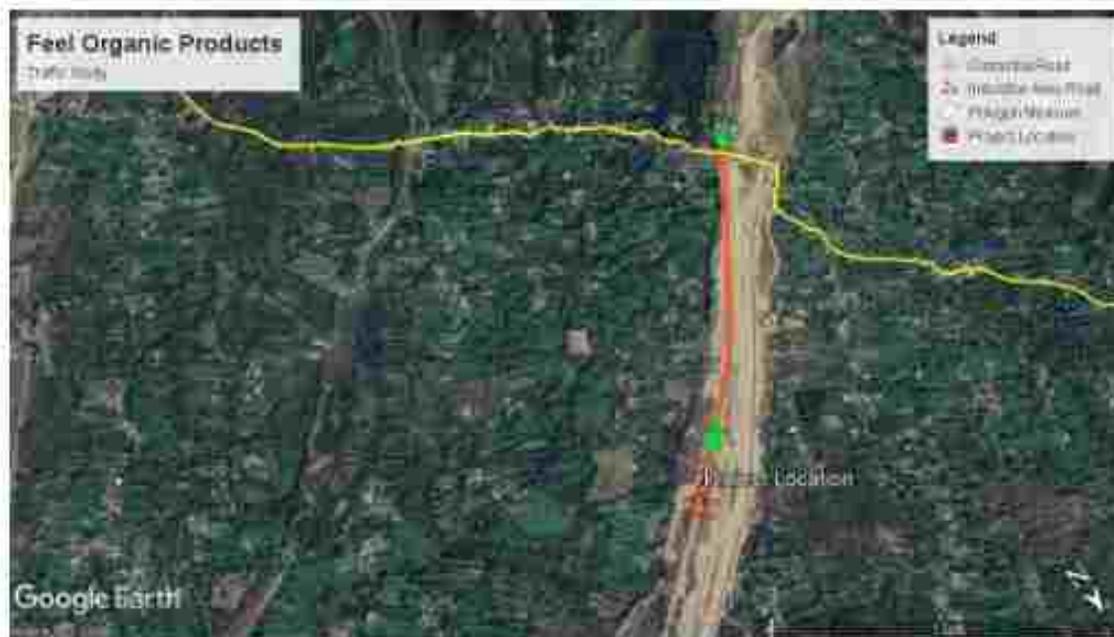
Traffic analysis is basically the process of intercepting and examining the number of vehicles on the road and deducing the pattern of traffic movement. Manual counting was done so as to count the vehicles in the form of cycle, scooter, car, bus, truck, jeep etc. The safe and time efficient movement of the people and goods is dependent on Traffic flow, which is directly, connected to the traffic characteristics. For better understanding of the present status of traffic flow at the junction, traffic survey is conducted. Thereafter, value of Passenger Car Units (PCU's) is calculated for different vehicular types and accordingly value of LOS is calculated for existing scenario. In order to calculate the traffic load during operational phase of project, additional traffic is assumed based on projects that are being established/expanded. Subsequently, modified PCUs are calculated and LOS is being checked whether it is sufficient to cater the load during operational phase.



7.5.2 TRAFFIC STUDY EXISTING & DURING OPERATIONAL PHASE

The project is located at a distance of 1 km from Dadasiba Road which is further connected to National Highway-503 (NH-503) at a distance of 8.30 km from the project site. Traffic data was collected for 24 hrs. by visual observation and counting of vehicles on 13.10.2022 at Adjacent Industrial Area road in front of the site (Location A) and at Dadasiba Road (Location B). Google Earth Image showing location of project and its existing approach road along with locations wherein the traffic study was conducted is shown below in Fig. 7.2.

Fig. 7.2: Google Earth Image showing existing approach road along with location on which traffic study was conducted



Traffic data was collected continuously for 24 hrs. by visual observation and counting of vehicles. Team having skilled persons were deployed simultaneously at Location A & B for counting the traffic load. Photographs depicting traffic study is shown below in Fig. 7.2.

At the end of each hour, fresh counting and recording was undertaken. Traffic count data for 24 hrs. on different two locations are given below in Table 7.7(a) & 7.7(b).

Table 7.7(a): Traffic survey on existing road at Location A (i.e. at Industrial Area Road Adjacent to the Site) on 13.10.2022

Type of Vehicles	Total no. of Vehicles	Equivalency factor	Equivalent PCU/day ⁺
Motor Cycle/Scooter/Cycle	1120	0.5	560
Car/ Pick-up van/Auto rickshaw	1448	1	1448
Agriculture tractor/LCV	135	1.5	202.5
Cycle-Rickshaw	6	2	12
Truck/Bus/Hand-cart	520	3	1560
Horse driven Vehicle	2	4.0	8
Truck-Trailer/Agriculture trailer/ Slow vehicles	55	4.5	247.5
Bullock cart	0	8	0
Total	3286		4038

Table 7.7(b): Traffic survey on existing road at Location B (i.e. At Dadasiba) on 13.10.2022

Type of Vehicles	Total no. of Vehicles	Equivalency factor	Equivalent PCU/day ⁺
Motor Cycle/Scooter/Cycle	1605	0.5	802.5
Car/ Pick-up van/Auto rickshaw	2862	1	2862
Agriculture tractor/LCV	204	1.5	306
Cycle-Rickshaw	12	2	24
Truck/Bus/Hand-cart	1489	3	4467
Horse driven Vehicle	17	4.0	68
Truck-Trailer/Agriculture trailer/ Slow vehicles	85	4.5	382.5
Bullock cart	7	8	56
Total	6281		8968

Table 7.8: Existing Traffic Scenario & LOS at different locations

Locations	V (Volume in PCU/day)	C (Capacity in PCU/day)*	Existing V/C ratio	LOS
	Per day count			
Location-A (At Industrial Area Road, Adjacent to the Site)	4038	21,600	0.19	A
Location-B (At Dadasiba Road)	8968	28,800	0.31	B

*IRC 64: Guidelines for Capacity of Roads in Rural area by Indian Roads Congress.

Conclusion for the existing traffic load:

- The V/C ratio is found to be between 0.0-0.2 for location A which means that the performance of road is Excellent.
- The V/C ratio at location B is between 0.2-0.4 which means that the performance of road is very good.

Table 7.9: Modified Traffic Scenario & LOS at different locations (during operational phase)

Locations	V (Volume in PCU/day)	C (Capacity in PCU/day)*	V/C ratio	LOS
A	4038+50 = 4088	21,600	0.19	A
B	8968+50 = 9018	28,800	0.31	B

* IRC 64: Guidelines for Capacity of Roads in Rural area by Indian Roads Congress

Conclusion for the traffic load:

- The V/C ratio is found to be between 0.0-0.2 for location A which means that the performance of road will be Excellent.
- The V/C ratio is found to be between 0.2-0.4 for location B which means that the performance of road will be very good.

CHAPTER 8.0 PROJECT BENEFITS

8.1 INTRODUCTION

The development of industrial projects plays a key role in the economic growth of any country. Formaldehyde (HCHO) is the simplest and a commercially important aldehyde. It is a colorless gas at room temperature and is soluble in water, alcohol and other polar solvents. Formaldehyde is being used in the number of industries for various purposes such as for the manufacturing of building materials – like pressed wood products (mostly as an adhesive resin), fiber board, plywood, etc. Additional uses in household products include additive for permanent –press, an ingredient in glues, and as a preservative in medical laboratories – as embalming fluid and as a sterilizer. An aqueous solution of formaldehyde can be useful as a disinfectant as it kills most bacteria and fungi (including their spores). It is used as an additive in vaccine manufacturing to inactivate toxins and pathogens.

Formaldehyde manufacturing unit shall overhaul the entire region and community by thrusting employment, infrastructure, industrialization, environment and water resources.

The benefits of the project may be analyzed by a STEEL Analysis of the Project - analyzing in greater detail the various aspects of the project which impact the participants and community at large. STEEL Analysis stands for and details - Social, Technological, Environmental, Economic and Legal benefits of any activity.



8.2 EMPLOYMENT POTENTIAL

8.2.1 DIRECT EMPLOYMENT

Employment scenario of the study area is largely dependent on the agriculture and Industrialization of the area. The establishment of proposed project has employment generation potential by way of recruiting local people directly for different activities of the project.

The operations of unit would entail the employment of around 37 personnel including highly skilled, skilled and unskilled human resources. Employment would be generated for residents of surrounding villages and towns for numerous skilled and unskilled individuals, activities would include guards, loaders, labour and plant operators. Employment would be generated for educated and highly skilled persons including Chemical engineers, Lab Chemists, Machine operators, Accountants, Purchase and Billing Executives. Thus, direct employment shall be generated across a wide selection of activities.

8.2.2 INDIRECT EMPLOYMENT

Indirect employment would be generated through multiple avenues including supply chain management and raw material suppliers. However, a major source of indirect employment would be for drivers of transport systems along with helpers ferrying the raw materials and generated products. The transportation aspect of the project holds potential for large employment opportunities in terms of drivers, helpers and repair-mechanics. Other forms of indirect employment would include technician for service and maintenance of plant components. Since, the infrastructure for maintenance of the specialized plant and machinery may not be readily available near site, adequate maintenance facilities for day-to-day and minor plant maintenance including a well-equipped workshop and trained technicians shall be developed for the project.

8.3 IMPROVEMENT IN INFRASTRUCTURE (PHYSICAL & SOCIAL)

M/s Feel Organic Products intended to provide the following infrastructure in the study area of 10 km radius:

- a) **Road Transport:** Road maintenance will be done due to project from time to time.
- b) **Market for the project:** The Indian formaldehyde is projected to grow at a CAGR of 6% during 2021-2030 on account of growing focus towards roofing mat application and the

surging demand for wood based articles in India. The Project is envisaged to meet the demand supply gap in the domestic market, due to increase in growth of Formaldehyde for meeting the increased demand of PLYWOOD and SUN MICA Industries.

- c) **Market for Consumer Goods:** With the implementation of the project, local consumer goods will grow, thus creating more income opportunities to the local people. The project will lead to more positive income and consequently, the multiplier effect is expected to lead to an overall increase in average consumption of the people in study area.
- d) **Increasing other business opportunities for local people:** There will be scope of hiring materials from local market and business for the transportation agencies for transportation of raw materials and finished goods. Few ancillary units may likely to develop to provide spares and repairs.
- e) **Education:** The local people interest towards education will increase due to the heightened expectation of getting jobs, especially from non-agricultural sources such as the industry and interlinked businesses in the vicinity of unit. The project is expected to increase such aspirations by bringing opportunities of some direct and indirect employment for the local people. The general awareness towards the importance of education is expected to increase as a result of establishment of project. The project will have positive impact on the level of education of the people.

8.4 CORPORATE ENVIRONMENT RESPONSIBILITY (CER)

Mr. Devinder Kumar Dhir (Partner) of M/s Feel Organic Products will be responsible for implementation of CER activities. The total estimated cost of project is Rs. 441.25 lakhs. Thus, Rs. 4 lakhs (approx. 1% of project cost) will be spent on CER activities in consultation with concerning ULBs/ PRIs (Urban Local Bodies/Panchayati Raj Institutions) through Department of Environment, Science & Technology, Govt. HP. Thus, the following activities will be proposed to be covered under CER:

Table 8.1: CER activities

S. No.	Activities	Amount
1.	Installation of Plastic waste shredders machine	Rs. 4 lakhs

Further, the issues raised during public hearing will be undertaken under CER.

8.5 OTHER TANGIBLE BENEFITS

1. After construction of unit, employment opportunities will lead to a rise in the income and improve standard of living. It will provide direct and indirect employment to local people.
2. Formaldehyde is a strong-smelling, colorless chemical very high in demand & is a building block in the synthesis of many other compounds of specialized and industrial significance. An aqueous solution of formaldehyde can be useful as a disinfectant as it kills most bacteria and fungi (including their spores). It is used as an additive in vaccine manufacturing to inactivate toxins and pathogens. There will be economic benefit due to selling of products all over India & export of the material.
3. Project will further encourage industrial growth of this sector specifically in formulation units in the region.
4. The company will cater to the needs of the domestic market.
5. The company will have more market growth of its own brand names in various States.
6. Green belt development will help to improve the air environment and aesthetics of the area.
7. The industry shall adopt all the necessary steps to protect the environment.
8. Addition of revenue to the state by direct & indirect taxes.

CHAPTER 9.0

ENVIRONMENTAL COST BENEFIT ANALYSIS

9.1 INTRODUCTION

As per EIA Notification dated 14th September, 2006 and its amendments, chapter on "Environmental Cost Benefit Analysis" is applicable only if the same is recommended at the Scoping Stage.

As per the ToR points issued by MoEF&CC vide File No. IA -J-11011/461/2021-IA -II(I) dated 15th March 2023, the Environmental Cost Benefit analysis is not required.

CHAPTER 10.0

ENVIRONMENTAL MANAGEMENT PLAN

10.1 GENERAL

Environment Management Plan (EMP) is a site specific plan developed to ensure that the project is implemented in an environmentally sustainable manner where all stakeholders including the project proponents, contractors and subcontractors, including consultants, understand the potential environmental risks arising from the proposed project and take appropriate actions to properly manage that risk. Adequate environment management measures need to be incorporated during the entire planning, installation and operating stages of the project to minimize any adverse environmental impact and assure sustainable development of the area.

10.2 PURPOSE OF ENVIRONMENTAL MANAGEMENT PLAN

Environment management plan is prepared with a view to facilitate effective environment management of the project, in general and implementation of the mitigation measures in particular. EMP provides a delivery mechanism to address potential adverse impacts and to introduce standards of good practice to be adopted.

For each stage of the program, the EMP lists all the requirements to ensure effective mitigation of every potential biophysical and socio-economic impact identified in the EIA.

- To treat and dispose-off all the pollutants viz. liquid, gaseous and solid waste so as to meet statutory requirements and regulations (Relevant Pollution Control Acts) with appropriate technology.
- To support and implement work to achieve environmental standards and to improve the methods of environmental management.
- To promote green-belt development.
- To encourage good working conditions for employees.
- To reduce fire and accident hazards.
- Budgeting and allocation of funds for environment management system.
- To adopt cleaner production technology and waste minimization program.



10.2.1 Air Pollution Management

- Stack with adequate height will be provided with Boiler and DG Set.
- It will be ensured that the emission of PM, SO_x, NO_x and CO shall be confirmed within the norms prescribed by CPCB.
- All necessary safety measures shall be implemented. All other action plans as well as clean-up procedures for combating emergency situations like leakage shall be in-place. Necessary records shall be maintained for work place monitoring done on regular basis. Regular review and necessary proceedings shall be ensured by proponent for timely correction & improvement in the safety system of the unit
- All storage, handling & transfer shall be done with properly designed facilities
- Appropriate storage shed shall be provided with leak proof walls and concrete
- Regular water sprinkling shall be carried out in and around the plant site
- Green belt shall be developed to control the air pollution.

Following measures shall be adopted to mitigate the fugitive emissions:

- The major air pollutants sources are Emission from Process, Boiler of capacity of 0.8 TPH & D.G. set of capacity 200 kVA. For mitigation of impacts of air pollution, stack height of 15m above ground level & diameter of 0.25 m shall be provided for Boiler, stack height of 16m shall be provided with process & stack height of 3 m above ground level shall be provided for D.G set.
- Adequate greenbelt shall be developed for the mitigation of noise & air pollution from the plant as per CPCB guidelines.
- Proper ventilation shall be maintained.
- Ambient air quality will be regularly monitored to ensure that ambient air quality standards and suggested limits will met at all the time.

10.2.2 Water and Wastewater Management

The following steps would be taken to prevent and reduce the water pollution in the area:

- To treat the effluent generated from industrial process, Evaporator of capacity 10 KLD shall be installed.
- To measure the quantity of inlet and outlet effluent appropriate size flow meter will be

installed and will be periodically monitored.

- Adequate quantity of land has been ear marked for the development of Green belt within the premises to reduce the emission beyond the plant boundary.
- Laboratory with all required analytical instruments like pH meter, analytical balance, Colorimeter etc. are proposed for routine analysis of various parameters to ensure the suitability and adequacy of treatment. The wastewater parameters including heavy metals, pH, BOD, COD, TSS, TDS, DO etc. shall be analyzed and record will be maintained.
- All these data shall be compared with the standard parameters set by PCB.
- All the chemicals will be stored and handled safely based on the requirement of material safety data sheet (MSDS).
- Preventive maintenance program will be developed and implemented.

If required, inlet and outlet shall be provided with online monitoring facility for important parameters or as suggested by the CPCB/ HPPCB.

10.3 ENVIRONMENT MANAGEMENT POLICY & ENVIRONMENT COMMITTEE

Company is very much oblivious of its responsibility in protecting the Environment. Thus, various mitigation measures as given in the report shall be taken-up and effort will be made to nullify the effect of project on Environment, if any. Any action or effort remains incomplete, if it is not monitored properly at regular intervals and corrective measures taken, wherever necessary. Regular monitoring has thus been provided. Company has a well-defined policy to keep the environment clean. The management has decided that all effective steps shall be taken to prevent deterioration of the existing environment. Environment Management Committee will be constituted for the purpose consisting of following persons as given in Fig. 10.1.

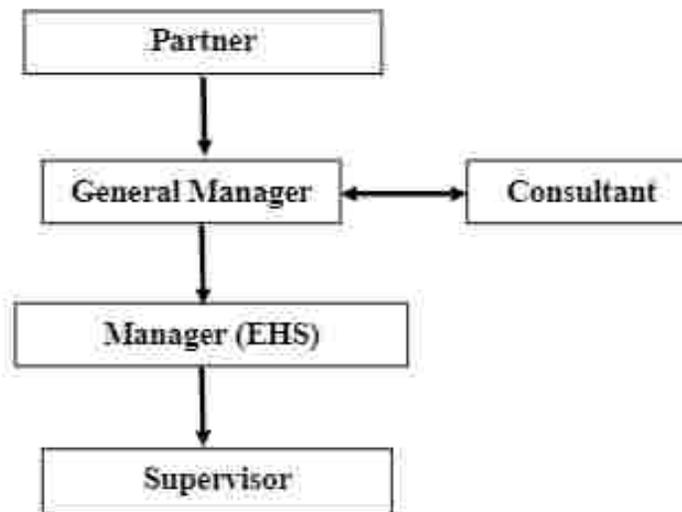


Fig. 10.1: Environment Management Cell of the Company

The purpose for formation of the Environment Committee is to:

- Violations if any will be brought to notice of the Top Management. It will also be intimated to concerned regulatory authorities and corrective measures will be undertaken.
- Conduct reviews of our operations to monitor environmental performance.
- Comply with all relevant environmental laws and regulations to minimize risks to health, safety and environment.
- Work with local government, regulatory authorities and communities to ensure safe handling, use and disposal of all materials, resources and products.

The main aims under the said Policy are to:

- To pursue and follow Feel Organic Product's Vision, Values and Motto at all levels within organization.
- Committed to prevent occupational injury & ill health prevent pollution and enhance customer satisfaction and energy performance with continual improvement in compliance to applicable Legal & Other requirements and quality of the products through application of Quality, Health & safety through consultation and participation of workers & their representatives, Environment and Energy Management System.
- To continuously review Quality, eliminate hazards & reduce Health & Safety risks, Environment & Energy Objectives and improve procedures for effective Waste

Management, Control of Emissions, reduction in incidences of illness & injuries and Energy Conservation.

- To impart training to enhance knowledge, skill and competencies of all human resources.
- To create lasting partnerships with customers and other stake holders by providing consistent quality products and effective services adopting safe, environment friendly and energy efficient operations.
- To ensure that the policy is communicated, understood and available within the organization, all stakeholders and public. It provides the framework for setting up the objectives and targets and is also reviewed periodically for suitability and effectiveness.

10.4. ENVIRONMENTAL MANAGEMENT

10.4.1 AIR ENVIRONMENT DURING OPERATIONAL PHASE

The major pollutants from proposed activity are PM₁₀ & PM_{2.5}, Sulphur Dioxide and Oxides of Nitrogen.

- There will also be provision of adequate ventilation system in process plant and hazardous chemical storage area.
- A regular preventive maintenance will be planned to replace or rectify all gaskets, joints etc.
- The unit will also maintain green belt within the project premises to control the fugitive emission from spreading into surrounding environment.

10.4.2 FUGITIVE EMISSION MANAGEMENT DURING OPERATIONAL PHASE

The following measures will be adopted to control the fugitive emissions:

- Dust generated from vehicular traffic during operation phase will be suppressed by providing adequate water spray systems.
- All vehicles and their exhausts will be well maintained and will be regularly monitored for emission generated from the vehicle exhaust;
- Provide wheel washers for vehicles to remove particulate matter that would be carried offsite by vehicles that would decrease deposition of particulate matter on area roads and subsequent entrainment from those roads.
- Green belt development all along the project boundary

10.4.3 Noise Environment

The design features provided to ensure low noise levels are given below:

- The machineries will be well-lubricated and provided with enclosures as far as possible to reduce noise transmission. Vibration isolators will be provided to reduce vibration and noise wherever possible
- The personnel safety such as earmuffs, earplugs and industrial helmets which act as a noise reducer will be provided to workers.
- Central control room(s) provided for operation and supervision of plant and equipment will be air-conditioned, glass fiber insulated frames, which will help in reducing noise levels. Necessary enclosures will also be provided on the working platforms/areas to reduce the noise levels;
- The silencers and mufflers of the individual machines will be regularly checked
- Green belt around the plant area will reduce the noise level further.
- Occupational Health & Safety (OHSAS) System for evaluation of exposure of noise pollution on the associated staff and comparing it with permissible exposure and subsequently taking corrective actions will be developed.

10.4.4 WATER ENVIRONMENT DURING OPERATION

The treated water from the septic tank shall be used in green belt and condensate from Evaporator shall be reuse to meet cooling water demand to minimize the use of water

10.4.5 ECOLOGY AND BIODIVERSITY DURING OPERATION

Following activities needs to be paid attention:

- Strict instructions to the workers and contactors need to be given on ban on cutting of any faunal species and cutting of vegetation.
- Care should be taken not to disturb the habitats.
- Proper management of waste material, no disposal of any waste into water body or open space.



Recommendations:

Terrestrial Ecology

- The native/local species should be used for green belt development.
- Introduction of exotic plant species should be strictly avoided.

Aquatic Ecology

- It is suggested that effluent generation from the various unit shall be evaporated by installing an Evaporator. Condensate shall be reused to meet the cooling water demand.

10.4.6 GREEN BELT DEVELOPMENT PLAN

Creation of green belt development using local species along the approach road, inside the project premises will help for the aesthetic development of the area with sound ecological management.

Criteria for Selection of Species

The choice of vegetative species for planting is based on studies of the natural vegetation in the area and on the environmental conditions.

- Plant species, which show higher adaptability to local climatic and edaphic conditions.
- Plants which show vigorous growth, and higher fodder value.
- Preferably indigenous, endemic and rare species.
- Plants that serve as nesting, feeding and breeding sites for fauna.
- Plants that enhance the aesthetics of the surrounding areas.
- Plants species having property of soil binding.
- Plant species with different good canopy and preferably evergreen.
- Tolerant to specific conditions or capacity to endure water stress and climatic extremes after initial establishment.

Economically important plant species

Green belts are used to form a surface capable of sorbing and forming sinks for odorous gases. Leaves with their vast area in a tree crown, sorbs pollutants on their surface, thus effectively reduce their concentrations in the ambient air and source emissions.

While making choice of plant species for green belts, weightage has to be given to the natural factor of bio-climate. Odour can be reduced by developing green belt.

Plants which counteract odour are:

- Bushes with mild but active fragrance.
- *Acacia farnesiana* (Mexican plant). It is a type of bush with yellow colored fragrant flowers. It does not have rich canopy but very effective for counteracting smell. Its limitation is seasonality and thorny nature.
- *Melaleuca* species: It has sweet fragrance and thin canopy in India.
- Pine, Cedar, Junipers: They have excellent canopy and protection. Its limitation is site specificity.
- *Eucalyptus*: It can be used as very good belt and can also be used as per odour source. Its limitation is site specificity and height in the urban neighborhood.
- Hedges, Herbs (Tulsi, Turmeric etc.) can also be used for counteracting odour.
- *Cymbopogon citratus* (Lemongrass): It is cultivated as medicinal and culinary. Lemongrass is considered as a herb, and it has a unique scent that resembles that of lemons. It is known about Lemongrass tea that is beneficial to fight against free radicals and thus further help reduce the inflammation in the body.
- *Chrysopogon zizantoides* (Vetiver): This plant is a king of perfumes for inactivating other odours. It affects the nervous system and relieves fatigue. It is used as key species in aromatherapy.

Plants which tolerate pollution

- *Nerium oleander* (Kaner): This plant may or may not have a thick canopy but has excellent results with vehicular pollution and experimented at National Botanical Research Institute, Lucknow.
- *Acacia auriculiformis* etc.
- Other than these, plants which are used to form green belt include *Bambusa vulgaris* (Bamboo), *Cassia fistula* (Amaltas), *Azadirachta indica* (Neem) and *Syzygium cumini* (Jamun) etc.

10.4.7 OCCUPATIONAL HEALTH AND SAFETY

All precautionary methods will be adopted by the company to reduce the risk of exposure of employees to occupational safety and health hazards. Pre & post medical check-ups will be done of all the employees. Employees will be regularly examined and the medical records will be maintained for each employee. Pulmonary function test and periodical medical checkup shall be done once in every year. For the safety of workers, personnel protective appliances like hand gloves, goggles, aprons, ear muffers, nose mask etc. will be provided. Nose mask will be provided at places, where there is possibility of dust generation. In high noise generation areas ear muffers will be provided for the workmen. Proper ventilation system will be provided as per requirement.

10.4.8 FIRE FIGHTING

The fire protection / detection system envisaged in the project is given below:

- Sand buckets
- Fire extinguishers

The system will consist of a central monitoring station and the main Fire Alarm Panel (FAP) located in unit control room. All necessary instruction and warning plates will be displayed.

10.5 BUDGETARY PROVISION FOR EMP IMPLEMENTATION

Table 10.1: Expenditure on typical environmental measures during Construction Phase

S. No.	Environmental protection measures	Capital cost (Rs. in lakhs)	Recurring cost (Rs. in lakhs/ year)
1.	Air Pollution Control	5.0	1.0
2.	Industrial Water Pollution Control (Evaporator)	35.0	2.0
3.	Domestic Water Pollution Control (Septic Tank & Distribution pipeline)	7.5	0.50
4.	Green Belt Development	5.0	1.0
5.	Waste Management (HW Storage and Disposal)	2.0	0.75
6.	Rain Water Recharging	10.0	2.0
7.	Miscellaneous	5.0	0.75
Total		Rs. 69.5 Lakhs	Rs. 8.0 Lakhs

Table 10.2: Expenditure on typical environmental measures during Operation Phase

S. No.	Environmental protection measures	Recurring cost (Rs. in lakhs/ year)
1.	Air Pollution Control	1.0
2.	Industrial Water Pollution Control (Evaporator)	2.0
3.	Domestic Water Pollution Control (Septic Tank & Distribution pipeline)	0.50
4.	Green Belt Development	1.0
5.	Waste Management (HW Storage and Disposal)	0.75
6.	Rain Water Recharging	2.0
7.	Miscellaneous	0.75
Total		Rs. 8.0 Lakhs

CHAPTER 11.0 SUMMARY & CONCLUSION

11.1 INTRODUCTION

M's Feel Organic Products is planning to set up a Formaldehyde manufacturing unit with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). The total plot area of the proposed unit is 4000 sq. m (4,783.96 sq. yards or 0.98 acres. The land has already been allotted to M's Feel Organic Products to set up a Formaldehyde manufacturing unit. Copy of Provisional Allotment letter is attached along as **Annexure-1**. Land Documents including Possession letter and Agreement to Lease are enclosed as **Annexure 2(b) & 2(c)**. The project falls in notified Industrial Area as per the notification No. Ind.A(F)S-1/2019. Copy of same is attached as **Annexure-3**.

As per the EIA Notification of Ministry of Environment, Forest & Climate Change (MoEF&CC) dated 14th September, 2006 and amendments thereof, the proposed project falls under Category- 'A', Schedule 5(f) Synthetic Organic Chemicals Industry, as the project is located within 10 km. from the boundary of notified Pong Dam Wildlife Sanctuary. Thus, the application for Environmental Clearance is being submitted to EAC, MoEF&CC.

The application for issue of Terms of Reference (TOR's) was submitted online on 4th March, 2023 to EAC, MoEF&CC. Auto ToR were issued by MoEF&CC vide File No. IA -J-11011/97/2023-IA -II(I) dated 15th March, 2023. Copy of the same is enclosed with the EIA report. The draft EIA report is being prepared incorporating the TOR.

11.2 PROJECT DESCRIPTION

S. No.	Parameters	Description
1.	Identification of the project	Formaldehyde manufacturing unit with production capacity of 100 KLD falls under Category- 'A', Schedule 5(f) Synthetic Organic Chemicals Industry as per EIA Notification dated 14 th September, 2006 and its subsequent amendments.
2.	Project Proponent	Mr. Devinder Kumar Dhir (Partner)

		M/s Feel Organic Products E-mail: feelorganicproducts@gmail.com															
3.	Brief description of nature of the project	Formaldehyde manufacturing unit with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra, Himachal Pradesh by M/s Feel Organic Products. The total plot area of the proposed unit is 4000 sq. m (4,783.96 sq. yards or 0.98 acres and 33.35% of plot area i.e. 1334.18 sq.m. has been reserved for green area within the industry.															
4.	Salient Features of the Project Proposed																
4.1	Overall plant capacity	Proposed Quantity: 100 KLD.															
4.2	Area Details	Plot area: 4000 sq. m. (4,783.96 sq. yards or 0.98 acres)															
4.3	Location	Project boundary coordinates of all corners are as follows: <table border="1" data-bbox="715 1122 1401 1339"> <thead> <tr> <th>Corner</th> <th>Latitudes</th> <th>Longitudes</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>31°54'6.69"N</td> <td>76° 7'32.68"E</td> </tr> <tr> <td>2.</td> <td>31°54'4.87"N</td> <td>76° 7'34.40"E</td> </tr> <tr> <td>3.</td> <td>31°54'6.07"N</td> <td>76° 7'36.05"E</td> </tr> <tr> <td>4.</td> <td>31°54'7.82"N</td> <td>76° 7'34.18"E</td> </tr> </tbody> </table> <p>Google Earth Image showing project location & its surroundings within 500 m are attached along as Drawing 4. Project site and its study area falls in the Survey of India, Toposheet No. H43E1 is attached along as Drawing 7.</p>	Corner	Latitudes	Longitudes	1.	31°54'6.69"N	76° 7'32.68"E	2.	31°54'4.87"N	76° 7'34.40"E	3.	31°54'6.07"N	76° 7'36.05"E	4.	31°54'7.82"N	76° 7'34.18"E
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4.	31°54'7.82"N	76° 7'34.18"E															
4.4	Water requirement	Source: Ground water (Borewell). Groundwater will be extracted only after getting permission from the concerned authority. The total water demand for the proposed project will be 86 KLD, out of which fresh water requirement will be 82 KLD which will be met through borewell															

		till the development work of water supply scheme for industrial area Chanour is completed. Permission of water supply has been granted from Distt. Industries Centre, Kangra vide letter no. Ind/Kgr/IA/Chanour/P-3/3607. Copy of same is attached as Annexure-5 .
4.5	Wastewater	<p>➤ Industrial Effluent</p> <p>Total 23 KLD of effluent will be generated during operational phase of industry, out of which 13.7 KL will be generated once in three months from cooling tower, boiler and plant washing and 7.3 KLD from RO reject. Effluent @13.7 KL/once in three months will be stored in storage tank of capacity 15 KLD and RO reject of 7.3 KLD will be evaporated in the evaporator @ 10 KLD to achieve ZLD (Zero liquid discharge)</p> <p>Domestic Effluent</p> <p>2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.</p>
4.6	Man Power	Total work force of around 37 persons distributed in 3 shifts including technical, skilled, semi-skilled, administrative, etc.
4.7	Power requirement	Total power requirement will be 250 Kw which will be supplied by Himachal Pradesh State Electricity Board Limited (HPSEB) for which permission has been granted vide letter no. Ind/Kgr/IA/Chanour/P-3/2609 dated 20.01.2023. Copy of approval from HPSEBL is attached as Annexure-6 . DG set of capacity 200 kVA each will be provided as power back up.
4.8	Alternative site	No alternate site is considered for the proposed

		project as the project shall set up on the purchased land.
4.9	Land form, Land use and Land ownership	The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde manufacturing unit. The project falls in notified Industrial Area.

11.3 BASELINE ENVIRONMENTAL STATUS

11.3.1 MONITORING PERIOD

The monitoring of environmental parameters has been conducted for the period October, 2022 to December, 2022 at project location and 7 other locations within 10 km study area. The monitoring has been carried out in accordance with the guidelines issued by the Ministry of Environment, Forest & Climate Change, CPCB and HPPCB.

11.3.2 AMBIENT AIR QUALITY DATA

PM_{2.5}, PM₁₀, SO₂ and NO₂ levels (Criteria Pollutants), O₃ as well as NH₃ were monitored at 8 locations in the 10 km study area by M/s Eco Paryavaran Laboratories & Consultants Pvt. Ltd. Monitoring stations were selected keeping in view of the dominant wind direction. On an average, the observed levels are as follows: PM₁₀ from 33 µg/m³ to 51 µg/m³ around the project location and 46 µg/m³ at the project site, PM_{2.5} varies from 17 µg/m³ to 28 µg/m³ around the project location and 24 µg/m³ at the project location, SO₂ from 7 µg/m³ to 8 µg/m³ around the project location and 7 µg/m³ at the project site and NO₂ from 15 µg/m³ to 23 µg/m³. The results when compared with National Ambient Air Quality Standards (NAAQS) of Central Pollution Control Board (CPCB) for "Industrial/ Residential/ Rural and Other Areas", it was observed that all the values of PM₁₀, PM_{2.5}, SO₂, NO₂, CO and PAH were within the prescribed limits.

11.3.3 AMBIENT NOISE QUALITY DATA

Ambient noise levels were measured at 5 locations within the project location and 3 locations outside the project site within the 2 km radius of project. Noise levels varied from 43.2 dB(A) and 48.5 dB(A) during the day time and were 35.8 dB(A) and 38.1 dB(A) during night time in the study area. The obtained noise levels are well within prescribed limits for industrial area.

11.3.4 WATER QUALITY DATA

Groundwater monitoring was done at 8 locations at project and within study area. The ground water test results indicate that water is good in quality and safe for drinking purpose. In the study area, since the samples have been collected from different sites at isolated places, the level of concentration and different elements vary quite considerably which may be due to small aquifers. However, the levels of the various components are within acceptable/ permissible norms for drinking water.

11.3.5 SOIL QUALITY DATA

The soil samples were collected from project location and at 7 other locations within study area. The soil analysis results in the study area indicates that soil is neutral in nature and Sandy loam texture with medium class of fertility in the study area.

11.3.6 LAND USE/LAND COVER

The study area comprises of crop land of about 52.10 sq.km. (16.60%). Fallow land of about 22.52 sq.km. (7.17%). Forest land of approximately 164.59 sq.km. (52.43%). Lake of 62.70 sq.km. (19.97%). River of about 0.71 sq.km. (0.23%). River bed of 5.82 sq.km. (1.85%). Scrub land of about 5.19 sq.km. (1.65%) and settlement in the study area cover an area of 0.31 sq.km (0.10%).

11.3.7 SOCIO-ECONOMIC STATUS

The sociological aspects of the project area have been studied that includes human settlements, demographic, socio economic aspects among others. The demographic and socio-economic details are described as follows:

- Kangra District has a population of 15,10,075 of which male and female were 7,50,591 and 7,59,484 respectively.
- The average literacy Rate of the district is 85.67%. Total male literacy rate is 91.49 % whereas total female literacy rate is 80.02%.
- Sex Ratio (Per 1000) of Kangra district is 1012.

11.3.8 ECOLOGY AND BIODIVERSITY

The project falls in notified Industrial Area as per the notification No. Ind.A(F)8-1/2019. Copy of same is attached as **Annexure-3**. Pong Dam Lake Wildlife Sanctuary- approx. 2.60

km, N. The distance from Eco sensitive zone is approx. 1.68km from the project site.

The faunal and floral diversity observed during the field survey does not claim considerable attention as most of the species observed are common throughout the region.

The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde manufacturing unit. Copy of Provisional Allotment letter is attached along as **Annexure-1**. Land Documents including Possession letter and Agreement to Lease are enclosed as **Annexure 2(b) & 2(c)**.

11.4 ANTICIPATION OF ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

11.4.1 AIR ENVIRONMENT

The pollutants from the project will be from Boiler stack and DG set. DG will be used as source of power supply and will be used in case of power failure only. HSD/ LDO oil will be used as fuel in Boiler and DG set. Adequate stack height & acoustic enclose will be provided to Boiler and DG set.

11.4.2 NOISE ENVIRONMENT

The noise levels will attenuate to the background values beyond the plant boundary and the levels are not expected to rise beyond 75 dB(A) in the study area. The damage risk criteria as enforced by OSHA and CPCB to reduce hearing loss, stipulates the noise levels up to 85 dB(A) as acceptable limits for 8 hour working shift per day.

11.4.3 WATER ENVIRONMENT

11.4.3.1 Domestic Effluent

Approx. 2 KLD of sewage will be generated which will be treated in septic tank.

11.4.3.2 Industrial effluent

The industrial effluent will be treated in evaporator of capacity 10 KLD; which will further be used in process, boiling feed and cooling water make-up.

11.4.4 SOCIO-ECONOMIC

The proposed project will employ around 37 persons from the local region, to ensure maximum benefit to the local qualified un-employed youth of the nearby area on operation of the project.

Thus, there are many youths in the district who can be trained through capacity building for contributing towards the GDP improvement of the district as well as state of Himachal Pradesh.

Further, as literacy rate of district Kangra district is 85.67%. The availability of educated and qualified youth in the local region of the project location is promising

It is an effort to access or estimate, in advance, the social consequences that are likely to follow from specific policy actions and specific government action as resultant of proposed unit. Summarized socio economic benefits are as under:

- With coming up of the proposed project, the employment opportunities (direct as well as indirect) will increase and local people will be employed on priority basis as per their skills. Training will also be provided to the local people.
- People will get direct opportunity in the unit. Not only the direct employment but also the indirect employment will be created from industry related various activities.
- The indirect employment will also be created from transportation, from mushrooming of services, shops and retails etc.
- After getting employment, socio-economic status of people will be increased.
- The chemical requirement will be primarily related to the project through the local market. Thus it will encourage the trade in the local market and in turn will help in the development of the area.
- Local people will be employed hence, it will not cause any stress on the community infrastructure, or any social stress, due to changing patterns of social interaction.
- Increased income security will contribute to the empowerment of the most vulnerable sections of the society.
- It is a long term project; therefore, it will bring avenues for long term jobs.
- Group insurance, free medical facilities, ESI and EPF will be provided to the employees.
- PPE's will be provided to the workers for safety.
- Indirectly, the proposed project will help the government by paying different taxes (sales tax, excise duty, etc.) from time to time, which is a part of revenue and thus, will help in development of the region.

11.4.5 ECOLOGY AND BIODIVERSITY

As the project is being established in notified industrial area thus, there is no indigenous flora and fauna to be impacted, disturbed or diminished because of the upcoming project. The area also does not possess the capacity to support such ecologically important species and their conservation. The impact of the project activities thus is understood to be negligible on the biological environment. Further, it is advisable to increase the green area through plantation in the available land so that the local faunal and floral biodiversity may increase.

11.4.6 SOLID WASTE

11.4.6.1 Domestic waste

Approximately, 10 kg/day (25 persons × 0.2 kg/person/day + 12 persons × 0.4 kg/person/day) of domestic waste will be generated. The solid waste will be disposed off as per Solid Waste Management Rules, 2016 and amendments thereof. The color coded closed bins for biodegradable and non-biodegradable waste shall be placed in each section. The biodegradable waste bin will be treated in compost pits. The waste from non-biodegradable waste bin shall be given to recyclers.

11.4.6.2 Hazardous Waste Management

The plant will generate following Hazardous waste as given below. The Hazardous waste will be collected, stored and disposed as per Hazardous Waste Management Rules, 2016 and amendments thereof.

S. No.	Name of Waste	Category	Quantity	Mode of Disposal
1.	Used Oil	5.1	0.1 KL/annum	To authorized recycler
2.	Sludge from evaporator	35.3	44 tones/annum	To TSDF

11.5 GREENERY DEVELOPMENT

Green area of 1334.18 sq.m. (33.35%) will be provided inside the plant premises. Locally available types of trees which are resistant to pollutants will be planted. Tree plantation around the plant helps to arrest the effects of particulate matter and gaseous pollutants in the area besides playing a major role in environmental conservation efforts. The green belt would;

- Mitigate gaseous emissions
- Have sufficient capability to arrest accidental release
- Effective in wastewater reuse
- Maintain the ecological balance
- Control odour
- Control noise pollution to a considerable extent
- Prevent soil erosion
- Improve the Aesthetics

All the species suggested are pollution tolerant, besides having an aesthetic appeal.

11.6 ENVIRONMENTAL MONITORING PROGRAM

The environment monitoring plan enables environmental management system with early sign of need for environment management, improvement and conservation. The environmental monitoring points will be decided considering the environmental impacts likely to occur due to the operation of proposed unit. Timely action for protection of environment Monitoring of environmental samples will be done as per the guidelines provided by MoEF&CC/CPCB. Separate records for wastewater, treated wastewater as well as sludge from evaporator generated will be prepared and updated regularly. Along with other budgets, Budget for environmental monitoring will be prepared and revised regularly as per requirement. The estimated cost for Environmental Monitoring has been kept as Rs. 5.0 Lakhs during construction as well as operation phase.

11.7 RISK MITIGATION MEASURES

Risk assessment and hazard management study has been done prior to establishment of unit which has covered the risk assessment as well as identification of hazards.

11.8 PUBLIC CONSULATION

Public hearing for establishment of the unit will be conducted by Himachal Pradesh Pollution Control Board (HPPCB). The proceedings of the same will be incorporated in the final EIA report.

11.9 PROJECT BENEFITS

The proposed project will attribute to following social, economic and financial benefits:

- Formaldehyde used in various other purposes such as plywood and sunmica laminated sheets manufacturers, who make adhesives like Urea Formaldehyde, Phenol Formaldehyde, Malamine Formaldehyde. It will be benefited by industries of varies sizes and capacities, with key focus on MSME Industries, across sectors including car manufacture, explosives, plastic, resins, chemicals and other artificial materials. It is also used in sanitary products like paper towels, napkins and tissues.
- Direct and indirect employment to skilled and semi-skilled people.
- Labour force from nearby area

11.10 CORPORATE ENVIRONMENT RESPONSIBILITY

Mr. Devinder Kumar Dhir (Partner) of M/s Feel Organic Products will be responsible for implementation of CER activities. The total estimated cost of project is Rs. 441.25 lakhs. Thus, Rs. 4 lakhs (approx. 1% of project cost) will be spent on CER activities in consultation with concerning ULBs/ PRIs (Urban Local Bodies/Panchayati Raj Institutions) through Department of Environment, Science & Technology, Govt. HP. Thus, the following activities will be proposed to be covered under CER:

Table 11.1: CER activities

S. No.	Activities	Amount
1.	Installation of Plastic waste shredders machine	Rs. 4 lakhs

Further, the issues raised during public hearing will be undertaken under CER.

11.11 ENVIRONMENTAL MANAGEMENT PLAN

In order to minimize environmental pollution due to the small and medium-scale industries, cleaner production technologies and formation of waste minimization circles are being encouraged in India. All recommendations given in the EIA report including that of occupational health, risk mitigation and safety will be complied. A group of qualified and efficient engineers with technicians will be deputed for maintenance, up-keeping and monitoring the pollution control equipment, to keep them in working at the best of their efficiencies. The estimated capital cost for Environmental Management Plan has been kept as

Rs. 69.5 Lakhs during construction phase and Rs. 8.0 lakhs during operation phase. Guidelines issued by the Central Pollution Control Board (CPCB) on greenbelt development will be followed. Environmental awareness programs for the employees will be conducted. EMD will also ensure cleanliness inside the plant.

11.12 CONCLUSION

Environmental Impact Assessment study reveals that M/s Feel Organic Products will successfully implement a well – designed Environmental Management Plan and it will comply with Environmental Norms/ Guidelines issued by HPSPCB/ CPCB/ MoEF&CC.

The region shall also be benefited from the project as there will be direct employment of people in the unit. Preference will be given to the people of the state possessing requisite skills and qualification criteria. Also, there will be lot of scope for indirect employment of the people of the state in and around the project like in transportation sector. In view of the above, establishment of the unit by M/s Feel Organic Products, will be technically feasible and financially viable.

CHAPTER 12.0

DISCLOSURE OF CONSULTANT ENGAGED

12.1 INTRODUCTION ABOUT CONSULTANT

Eco Group is a reputed business house working in the field of environment in North India since 1999 with Vision & Mission of "Preventing pollution with Purpose-Bringing profit and goodwill in equal measure". The group aims that the customers achieve effective compliance with legislation including a better public image and earn from waste. The group comprises of Eco Laboratories & Consultants Pvt. Ltd. - engaged in consultancy & analytical services; Eco Paryavaran Engineers & Consultants Pvt. Ltd. - engaged in providing engineering solutions and Environment Matters – undertaking capacity building programs in the field of environment.



MAJOR MILESTONES

- **1999:** Eco Engineers established
- **2001:** Er. Sandeep Garg (CEO) appointed as National Director, Institute of Environmental Sciences & Technology (IEST), USA
- **2003:** First one to be registered as Environmental Consultant with Himachal Pollution Control Board (HPCB)
- **2004:** Establishment of Environmental Testing Lab
- **2007:** Approval from Punjab Pollution Control Board (PPCB)
- **2009:** Approval from Ministry of Environment, Forests and Climate Change (MoEF&CC)

- **2010:** Accredited by NABL
- **2013:** Designated as a State Lab by Himachal Pradesh Government
- **2017:** Affiliated from Skill Council for Green Jobs, National Skill Development Council, GoI
- **2018:** Accredited EIA Consultant from NABET, Quality Council of India.
- **2019:** Approval from Jammu and Kashmir State Pollution Control Board (J&KSPCB)
- **2021:** 10 Sectors covered NABET accreditation.

Eco Paryavaran Laboratories & Consultants Pvt. Ltd. - LABORATORY SERVICES DIVISION is known for excellence in monitoring and analysis of environmental, building material and microbiological parameters. Some of the key analytical services provided are Ambient Air Sampling and Analysis; Stack Monitoring – Process stack, DG Stack etc.; Noise and Lux Monitoring; Indoor & work zone monitoring; Water and Wastewater analysis; Soil & Sludge Testing; Testing of Cement – all grades; Testing of Concrete – Cubes, beams, cores, Paver blocks; Testing of Aggregates – Coarse and fine; Testing of Bricks – Burnt Clay, Fly ash; Soil Testing – Both physical and Chemical; Steel Testing – Tensile, Yield, Elongation, Bend and Rebend testing; Swab testing and Indoor air quality etc. **ENVIRONMENT SERVICES DIVISION** undertakes various activities as - Environmental Impact Assessment/Environmental Clearances; Environmental Audits; Pollution Control Systems Engineering & Design Services; Performance Evaluation of Pollution Control Systems; Benchmarking and Environment due diligence, CGWA/PWRDA/HGWA NOC, Action Plan on Plastic Waste Management, EHS Audits, Consent to Establish, Consent to Operate (CTO), HW Authorization, BMW authorization, Feasibility Reports for various pollution control Boards including Punjab, Haryana, Himachal, Chandigarh, J&K, UP, Uttarakhand, Delhi etc.

Eco Group operates from an independent 10,000 square feet built-up area on three levels each in Mohali, Punjab (India). A dedicated team of thirty engineers, scientists along with the support staff qualified in areas as environment, civil, electrical, mechanical, chemical engineering, biotechnology, chemistry and microbiology oversees the various activities.



Special Facility of Eco Group for Environmental Testing & Management

Onsite Environmental Testing

Mobile Testing Laboratory



Noise Dose Monitoring in Work Zone Environment

Noise Dosimeter – SVANTEK SV104IS, Intrinsically Safe



Flue Gas Emissions from Stack/ Source/ Duct

Flue Gas Analyzer – MRU, Optima 7



Calibration of Online CEMS (Emission/ Effluent)

Calibration for Particulate Matter (Emissions) & pH, BOD, COD, TSS (Effluents)



Aerosol Dust in Ambient/ Indoor/ Work zone Environment

(TSI Side Pak™ AM520i Real Time Aerosol Sampler for PM₁₀, PM_{2.5}, PM_{1.5}, PM_{1.0} and PM_{0.5} - DPM), Intrinsically Safe



Milk Powder Emission Loss Monitoring in Dairy Industry

Quantification of Milk Powder Emission Loss form Milk Dryers/ Fugitive Emissions/ General Leakage



VOCs & Toxic Gases in Ambient/ Indoor/ Work zone Environment

Real Time VOC/Toxic Gas Meter (PID) - TIGER Pho Check, Ion Science, UK, Intrinsically Safe



Validation of Indoor Environment in Hospitals/ Operation Theaters

As per ISO 14664 standard, services are delivered as Air Change/ Ventilation Rate, Air Velocity at filtration unit, Pressure Differential, Validation of HEPA Filters by DOP/ POA testing, Temp. and Humidity



Noise & Vibration Monitoring

Sound level meters and octave bands



Carbon Monoxide (CO) in Ambient/ Indoor/ Work zone Environment

Real Time NDIR CO Monitor - Horiba APMA-370



Industrial Hygiene & Occupational Health and Safety Study in Workzone Environment

Industrial Hygiene, Ventilation Rate, Heat Stress, Health and Safety Study as per OSHA/ NIOSH/ Indian Factories Act, 1948



Biohazard Testing

Air Quality Testing for Bacteria, Yeast & Mould Count



Eco Paryavaran Engineers and Consultants Private Limited is a 9001: 2015 organization, that provides engineering and turnkey solutions for pollution control and recycling including- Sewage Treatment Plants Effluent Treatment Plants (both skid mounted and civil); Ultra Filtration-RO Combination Systems for Effluent recycling; Wastewater Treatment Equipments & Components- Aeration Systems; Disinfection systems-Ozone-UV based; Sludge Handling Systems-Filter Press/Bags; Air Pollution Control Systems; Noise Attenuation; Solid Waste Management Systems.



Package Type Skid Mounted Unit



UF-RO plant

Environment Matters undertakes various Education & Awareness Campaigns in Schools and Universities; plantation drives; Training of People from Economically Weaker Sections; Capacity-building of qualified professionals from universities, Generating Reliable Data Pitching for Sustainable Development. Glimpses of activities are shown below:



Sensitized more than 1,00,000 people through Social Media. Facebook: env.matters; Twitter: EcoGroupMohali; LinkedIn: Environment Matters; Instagram: environmentmatters34; Youtube: Eco Group

ASSOCIATIONS WITH ACADEMIA

• PUNJAB ENGINEERING COLLEGE (PEC), CHANDIGARH

- ✓ *Name of Project: MoU for Testing and R & D in our laboratories*
- ✓ *Date of Project: 11th July 2017*

• THAPAR UNIVERSITY, PATIALA

- ✓ *Name of Project: R & D Support for Bio N; Industrial Training Programme for M.Tech. Students*
- ✓ *Date of Project: March 2012*

• IIT, MANDI, HIMACHAL PRADESH

- ✓ *Name of Project: MoU for R & D projects under IMPRINT Scheme of MHRD, GoI*
- ✓ *Date of Project: 8th July 2016*

12.2 KEY RECOGNITIONS/ACCREDITATIONS OF CONSULTANT

- QCI NABET accreditation vide Certificate No. NABET/EIA/2223/SA 0183 dated 9th Jan, 2023.
- Lab Approved by NABL in the field of Testing vide Certificate No. TC-7477 dated 28.04.2022.
- Ministry of Environment, Forest & Climate Change, Govt. of India approval under Environmental Protection Act 1986 vide notification dated 26.02.2018.
- ISO 9000:2015, ISO 14001:2015 and ISO 45001:2018 certified.



**QUALITY COUNCIL
OF INDIA**
Creating Excellence for India



**National Accreditation Board
for Education and Training**



Certificate of Accreditation

Eco Paryavaran Laboratories and Consultants Pvt Ltd
E 207, Phase VIII B, Sector 74, Industrial Area, SAS Nagar, Mohali

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

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals- opencast only	1	1(a) (i)	A
2	Metallurgical industries (ferrous only)- both primary & secondary	8	3(a)	A
3	Cement Plants	9	3(b)	A
4	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (A)	A
5	Distilleries	22	5 (B)	A
6	Sugar industry	25	5(B)	B
7	Industrial estates/ parks/ complexes/zones, export processing Zones(EPZs), Special Economic Zones(SEZs), Biotech Parks, Leather Complexes	31	7(c)	A
8	Coastal Effluent Treatment Plants	36	7(h)	B
9	Building and construction projects	38	8(a)	B
10	Townships and Area development projects	39	8 (a)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated November 04, 2022 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/INV/ACO/22/2624 dated Jan 9, 2023. The accreditation needs to be renewed before the expiry date by Eco Paryavaran Laboratories and Consultants Pvt Ltd following due process of assessment.

NABET


Sr. Director, NABET
Dated: Jan 9, 2023

Certificate No.
NABET/EIA/2223/SA 0183

Valid up to
Dec 17, 2023

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



National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

**ECO PARYAVARAN LABORATORIES & CONSULTANTS
PRIVATE LIMITED**

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

ECO GROUP, ECO BHAWAN, E-207, INDUSTRIAL AREA, PHASE VIII (SECTOR 74), MOHALI, SAS
NAGAR, PUNJAB, INDIA

in the field of

TESTING

Certificate Number: TC-7477

Issue Date: 28/04/2022

Valid Until:

31/05/2023

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nablindia.org)

Name of Legal Identity: Eco Paryavaran Laboratories & Consultants Private Limited

Signed for and on behalf of NABL



N. Venkateswaran
Chief Executive Officer



MOEF&CC ACCREDITATION CERTIFICATE

संश्लेषण के लिए प्रमाणपत्र

संश्लेषण के लिए प्रमाणपत्र



EXTRAORDINARY
PART II—SECTION 3—Sub-section (1)
PART II—Section 3—Sub-section (1)
अन्यथा
EXTRAORDINARY
PART II—SECTION 3—Sub-section (1)
PART II—Section 3—Sub-section (1)
अन्यथा
EXTRAORDINARY
PART II—SECTION 3—Sub-section (1)
PART II—Section 3—Sub-section (1)

व. सं. १०१ अतिरिक्त, अग्र, संश्लेषण के लिए प्रमाणपत्र, २०१९
नं. १०१ अतिरिक्त, अग्र, संश्लेषण के लिए प्रमाणपत्र, २०१९

अन्यथा, अतिरिक्त, अग्र, संश्लेषण के लिए प्रमाणपत्र, २०१९

अतिरिक्त

अतिरिक्त, २० अक्टूबर, २०१९

NOTIFICATION

New Delhi, the 20th February, 2019

S.O. 1011.—In exercise of the powers conferred by clause (b) of sub-section (1) of section 3 and section 11 of the Environment (Protection) Act, 1986 (86 of 1986) and with rule 31 of the Environment (Protection) Rules, 1986, the Central Government hereby notifies the following further amendments in the notification of the Government of India in the Ministry of Environment and Forests, number S.O. 217422 dated the 18th July, 2007, namely:—

In the Table appended to the said notification:—

(i) for serial number 1, 17, 24, 26, 34, 41, 42, 43, 47, 53, 54 and 55 the entries relating therein, the following serial numbers and entries shall be substituted, namely:—

S.No.	Name of the Laboratory	Name of the Govt. Analyst	Recognition till after firm and valid up to
(i)	(ii)	(iii)	(iv)
7	M/s. Hesse Consultancy Pvt. Ltd., D-66, Sector 51, Noida-201 301, U.P. Pradesh	(i) Mr. Gagan Nath Mishra (ii) Mr. Nishu Deywani (iii) Mr. Sanku Varma	20/02/2019 " 23/02/2021
17	M/s. Hesse Laboratories Limited	(i) Mr. Anshul Agarwal	20/02/2019

S.No.	Name of the Laboratory	Name of the Govt. Analyst	Recognition till after firm and valid up to
24	M/s. Newton Consultancy & Laboratories Pvt. Ltd., 2 nd S.M. Tower, D.H. Motor Road, Naru Opp. Main Dham Mandir, Okhla-201002, U.P. Pradesh	(i) Mr. Vinayak Dev Bhat (ii) Dr. Sumit Kumar Jain (iii) Mr. Pankaj Gupta (iv) Mr. Anil Kumar Singh (v) Mr. Anshul Sharma	" 23/02/2019 " 23/02/2020
26	M/s. Hesse Laboratories & Research Pvt. Ltd., 402, Panchsheel Plaza, Opp. Bazar Tugheer, Lucknow-Kanpur Road, Para-411015, Madhya Pradesh	(i) Mr. Vikram Kumar Kati (ii) Mr. Sangeet Kumar Mishra (iii) Mr. Manoj Kumar Goyal	24/02/2019 " 23/02/2021
30	M/s. Laxmi Chem. Industries, "Laxmi House", H-14-C, Veerpathy Nagar, Hyderabad-500018, Telangana	(i) Mr. Ganeshji Nagarajappa Bhat (ii) Mr. Chandra Anandhi (iii) Mr. Vignesh Pillai	26/02/2019 " 23/02/2021
39	M/s. Tech Test House, (A Unit of Tech Institute of Science & Technology Pvt. Ltd.) G-12/A, HITEC Industrial Area, Shantinagar, Agra-202002, Rajasthan	(i) Mrs. Kavita Mathur (ii) Mr. Rishi Shah Mahareshya (iii) Mr. Rajesh Maheshwari	26/02/2019 " 23/02/2021
41	M/s. Emerald Research & Test Labs Pvt. Ltd., 180-76, Sector E, Aligarh, Lucknow-202012, U.P. Pradesh	(i) Dr. Manoj Kumar Agarwal (ii) Mr. Vikas Kumar Gupta (iii) Mr. Anil Singh	26/02/2019 " 23/02/2021
42	M/s. Hesse Engineering Services, 25/25/25, Club Road, Solapur-413015, Karnataka	(i) Mr. M. Srinivas Raja (ii) Mr. M.H. Durga Prasad (iii) Mr. A.D. Vishwanath Arav Mathis	26/02/2019 " 23/02/2021
51	M/s. Advanced Environmental Testing and Research Lab Pvt. Ltd. 60/1, English Vihar, Near ITO, City Council, Greater Kailash-1, New Delhi-110048, Delhi	(i) Mr. Rajesh Kumar (ii) Dr. Deepak Kumar Uttarakhand (iii) Mr. Anand Kumar Sharma	26/02/2019 " 23/02/2020
54	M/s. Geo Labs, Plot No. 1, 2 nd Floor, In: Sahas Complex, Hava Ganga Colony, L.B. Nagar, Hyderabad-500042, Telangana	(i) Mr. K. Srinivasa Rao (ii) Mr. Ganesh Kumar Gupta (iii) Mr. P. Manohar	26/02/2019 " 23/02/2021
57	M/s. Geotek Civil Pvt., Green Empire, Akshaypattar, Bahadur Nagar, Near Yash Condo, Above Axis Bank Ltd, Gird Mah Road, Vaddalwa-500021, Gujarat	(i) Mr. Pradyumn (ii) Mr. Ravi Kumar (iii) Mr. Shreshth Jaiswal	26/02/2019 " 23/02/2021
58	M/s. Hesse Laboratories & Consultants Pvt. Ltd., G-209, Industrial Area, Phase-VIII E, Sector-7C, Mohali-160071, Punjab	(i) Mr. Sandeep Singh (ii) Mr. Vinod Kumar (iii) Mr. Anshul Sharma	26/02/2019 " 23/02/2021
59	M/s. Hesse Services Consultancy Pvt. Ltd., No. 18, 80 th Street, Ashok Nagar, Chhatrapati Shivaji, Tamil Nadu	(i) Dr. J.R. Hince (ii) Dr. Rajkumar Somani (iii) Mr. K.K. Natarajan	26/02/2019 " 21/02/2021
65	M/s. Hesse Analytical Laboratories, Plot No. 085, New MIDC Industrial Estate, Sri Nagar, Shree 4MIDC, Tamil Nadu	(i) Mr. D. Balakrishnan (ii) Mr. S. Sivaram (iii) Mr. R.K. Arivuchandran	26/02/2019 " 23/02/2021



Certificate of Registration

This is to Certify that
Quality Management System of

ECO PARYAVARAN LABORATORIES & CONSULTANTS PRIVATE LIMITED

B-207, INDUSTRIAL AREA, PHASE VIII B (SECTOR-74), MOHALI-160071,
PUNJAB, INDIA

has been assessed and found to conform to the requirements of

ISO 9001:2015

for the following scope :

TESTING SERVICES IN BIOLOGICAL, CHEMICAL AND MECHANICAL
CATEGORIES & EIA CONSULTANTS FOR PREPARING EIA/EMP REPORTS.

Certificate No	22HQJK03	Issuance Date	21/04/2022
Initial Registration Date	21/04/2022	Date of Expiry	20/04/2025
1st Surve. Due	21/03/2023	2nd Surve. Due	21/03/2024

Director



ACCREDITED
Management Systems
Certification Body
MSCB-119



AQC MIDDLE EAST LLC

Head Office - Office for AE, Central Plaza, Sharjah Media City, Sharjah, U.A.E. email: aqc@aqc.com
Key Location - 3rd Floor - 2, Sheikh Zayed Road, Dubai, UAE. Phone: +971 4 360 1111

Validity of this certificate is subject to successful completion of surveillance audits on all scopes of the certificate. Surveillances audits are scheduled on a regular basis and shall be reported to the client.
Certificate Validity: This certificate is valid only if compliance with the Management System requirements is maintained as per agreed terms of the contract. Compliance to the provisions of ISO 9001:2015 and shall be assessed during the surveillance audits.



Certificate of Registration

This is to Certify that
Environmental Management System of

**ECO PARYAVARAN LABORATORIES &
CONSULTANTS PRIVATE LIMITED**

E-207, INDUSTRIAL AREA, PHASE VIII B (SECTOR-74), MOHALI-160071,
PUNJAB, INDIA

has been assessed and found to conform to the requirements of

ISO 14001:2015

for the following scope :

TESTING SERVICES IN BIOLOGICAL, CHEMICAL AND MECHANICAL
CATEGORIES & EIA CONSULTANTS FOR PREPARING EIA/EMP REPORTS

Certificate No.	: 22HJ876	Issuance Date	: 21/04/2022
Initial Registration Date	: 21/04/2022	Date of Expiry	: 20/04/2025
1st Surve. Due	: 21/03/2023	2nd Surve. Due	: 21/03/2024

Director



ACCREDITED
Management System
Certification Body
MCCS-18



AQC MIDDLE EAST LLC

Head Office: Office No. 92, Grand Plaza, Sheikh Zayed City, Sheikh, CAE, 11567, www.aqc.com

Reg. Location: (HQ) Sector - 2, Mohali, Distt. Punjab, 201001, India

Validity of the Certificate is subject to successful completion of a surveillance audit on or before the last three anniversary of issue subject to the condition that certificate holder is required to attend

Certification Body: (For the details of capability of certificate holder to support customers from scope of www.aqc.com in their home countries, please go to www.aqc.com)

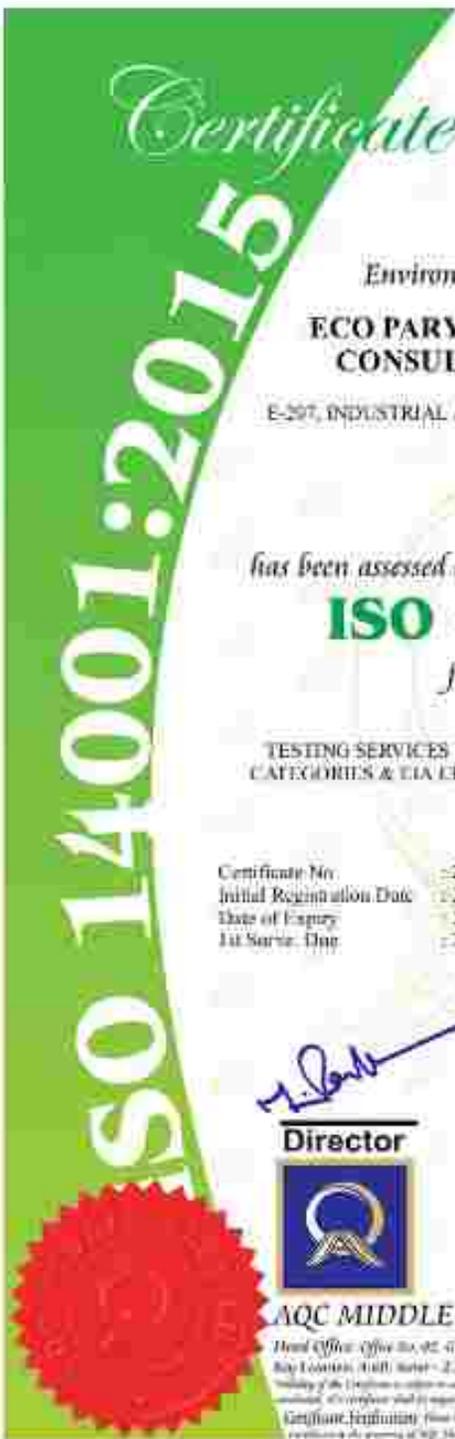




Fig. 12.1: Accreditation Certificate



No. Ind/DIC/Kgr/LA. Chanour/Plot No.3/4337
 Office of the General Manager,
 District Industries Centre, Dharamshala

Dated: Dharamshala 19.02.2022

To,

✓ Sh. Sandeep Ghri (Partner)
 (M/s FEEL ORGANIC PRODUCTS)
 Ward No.7, Main Bazar, Kangra,
 Near Police Station,
 Tehsil Distt. Kangra (HP).

Subject:- Provisional allotment of plot/land in Industrial Area, Chanour District Kangra H.P.

Sir,

This is with reference to your application dated Nil for the allotment of **4000 Sq.m. land/plot in the industrial Area, Chanour Tehsil Dadasiba District Kangra, H.P.**

In compliance to approval of allotment of 4000 Sq.m land in Industrial Area, Chanour in your favour by allotment committee in its meeting held at Directorate of Industries Shimla on 17.11.2021 and then considering the revised development plan of Industrial Area, Chanour submitted by Executive Engineer HPSIDC vide letter no.1890-92 dated 5.01.2022 and also considering your demand Plot No. 3 land area measuring 4000 Sq. Mt. (undeveloped land) in industrial Area Chanour Phase-II, Teh. Dadasiba Distt. Kangra HP is hereby allotted provisionally in favour of M/s **FEEL ORGANIC PRODUCTS** for setting up of Formaldehyde unit.

The provisional allotment of the plot/land is however subject to following terms & conditions:-

1. That the premium of the plot will be charged @ Rs. 1000/- per Sq.mtr. in case of any variation in the area subsequently, the premium will be revised accordingly. The allottee shall be liable to pay additional amount on account of premium of land in case the cost of land is enhanced as a result of any land reference made to a court of law under the provisions contained in the Land Acquisition Act-1894 or any other orders passed by the appellate or reviewing Authority against the decision of such Court.

R. Ghri

2. The Allottee will have to deposit 12% premium of land i.e. Rs. -Nil- within 30 days of allotment and 88% balance premium i.e. Rs. 34,20,000/- will be paid in eight annual instalments payable on 1st month of allotment every year. No interest will be charged on the balance instalments. However, simple interest will be charged on delayed payment @ 9% P.A or as applicable from time to time as per the provisions of Incentive Rules. In case the approved industrial enterprise of allottee commences commercial production within three years of handing over the possession it would be eligible to avail incentive of concessional rate equivalent to 60% premium of fixed at the time of provisional allotment. And in case allottee after commencement of production offers to clear balance payment of premium in lump sum, a rebate of 10% on balance premium of land will be given.
3. That the allottee has applied for the allotment of 4000 Sq.m. land/plot and provisional allotment of 4000 Sq.m. is hereby made, which is less/excess than of the size applied for. In case the allottee refuses to take over the possession of this provisionally allotted land/plot on this ground in writing within 30 days of issue of allotment letter, the earnest money applicable as per policy guidelines deposited by the allottee will be refunded without interest (incorporate only if applicable).
4. That in case the allottee fails to deposit 12% premium of land and execute the agreement to lease (Proforma appended herewith) within 30 days of allotment then this provisional allotment will stand automatically withdrawn. An amount as applicable will be deducted from the earnest money as processing fee and the balance earnest money deposited by the allottee will be refunded without interest.
5. That the possession of plot "as is where basis is" will be handed over to the allottee after receipt of 12% premium of land and execution of agreement of lease.
6. That in case the allottee surrenders the possession of the land/plot provisionally allotted within a period of two years from the date of issuance of this letter then this provisional allotment would be deemed to have been cancelled and 10% of the premium paid or Rs. 10,000 whichever is higher will be deducted and the balance amount of premium deposited by the allottee would be refunded without any interest.

7. That the provisional allotment is valid for a period of two years from the date of handing over of the possession of plot/land. The allottee has to commence production within this period. The Director/Commissioner Industries, HP may, however extend the period of the provisional allotment for one year at a time on merits of each case, subject to the total period (including the original period of 2 years) not exceeding 5 years from the date of handing over of possession. Such cases for grant of each extension will only be considered if the premium due to the Department till the time of making the application for extension in time period has been fully paid and there is no default in the payments due to the Department. Extension fee equivalent to 10%, 15% and 20% of the total premium assessed at the time of provisional allotment of the plot will be charged for extension sought for the 1st, 2nd and 3rd year respectively, which will not be refundable/adjustable in the premium of the plot.
8. That the allotment of plot/land will be valid for 95 years on lease hold basis in case the allottee commences commercial production within the validity period of provisional allotment. In case the allottee is refused extension in time for setting up of the enterprise as stated supra or otherwise violates any provision of **Rules Regarding Grant of Incentives, Concessions and Facilities for Investment Promotion in Himachal Pradesh-2019** or any condition of allotment or terms of registration/approval of project & Udyam Registration, the allotment will be cancelled and the premium and extension fee, if any paid by the allottee will be forfeited. The possession shall be resumed by the Department after giving notice to vacate the plot and surrender the possession free from all encumbrances peacefully within 2 months failing which the provisions of the HP Public Premises & Land (Eviction and Rent Recovery) Act, 1971 and other legal remedies will be invoked to resume the plot.
9. That the Department reserves the right to change the allotment of any plot/land or to change the size of plot/land before the execution of regular lease deed.
10. That the Maintenance Charges @ Rs. 4/- per Square meter per annum or as decided by Industrial Area Development Agency (IADA) from time to time/other charges as decided by IADA and lease rent @ Rs. 1/- per annum will be realized from the date of taking over the possession. You will also have to pay Rs. 20/- Per toilet P.M. towards sewerage charges.

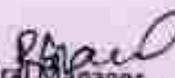
Risaul

11. That the allotment, change of activity/item of manufacture, constitution, transfer of lease hold rights and other related/incidental matters thereto will be regulated by the provisions made under Rules Regarding Grant of Incentives, Concessions and Facilities for Investment Promotion in Himachal Pradesh-2019 or Rules in forces at the time of granting such permission/processing such request.
12. That the allottee will employ at all level at least 80% (or as prescribed from time to time) of the total manpower, whether on regular/contractual/sub-contractual/daily basis/or any other mode from amongst bonafide Himachalis.
13. That the allottee will obtain prior approval of the competent authority as provided under the Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005 to extract and use ground water. Further in order to conserve water and improve the ground water situation, rainwater harvesting system and recharging structure must be provided in the factory premises.
14. 1% cess on the actual cost of construction shall be deposited by the allottee under the building and other construction Workers Welfare Cess Act 1996.
15. The allottee has to bear the actual expenditure incurred towards cutting/repairing of the road for water and sewerage connection and also deposit money demanded for sewerage and water connection, as fixed by the Government/IADA/Maintenance Agency/local Municipal Authority from time to time.
16. The allottee shall not without sanction or permission in writing of the Department or any other authority prescribed by the Department erect any building or make any alteration or addition to such building on the plot and comply with drainage and other bye-laws of the municipal or other authority for the time being in force.
17. The allottee will utilize the entire allotted area of the plot for setting/running up of industrial enterprise. In case the land so allotted is found surplus of the actual requirement at any stage. Department reserves the right to resume such unutilized land.
18. The allottee will not use the industrial plot or building constructed thereon or part thereof for carrying out any activity other than the activity approved/acknowledged by the department.
19. The High/Low Tension Wires/lines, if any, passing over the land/plot shall be got removed/shifted, if so required, by the allottee at his own level & cost and Department will not be found in any manner regarding shifting of such lines.

20. The allottee shall not cut/damage/destroy trees, if any standing in the said plot/land without written approval of the Competent Authority.
21. Electric Connection for setting up/running the industrial enterprise will be obtained by the allottee at its own level/cost.
22. The aforesaid conditions of allotment shall be deemed to have been incorporated in agreement to lease and lease deed to be executed with the allottee and shall form a part thereof.
23. In case of any dispute the decision of the Director/Commissioner Industries shall be final & binding upon both the parties.
24. The allottee will pay the assessed cost of structure if any, existing on the allotted plot.
25. That the allottee will pay GST on lease amount /premium of plot if applicable.
26. That you will furnish an undertaking to the concerned General Manager with regards to construction of factory shed as per map approved within time frames of 45 days.

In case you are ready to accept this provisional allotment of land/plot on the above terms and conditions, you are requested to deposit Rs. -Nil- against 12% premium of land (if not deposited yet) and also execute the agreement to lease within 30 days from the issue of this letter positively, failing which allotment of plot/land will stand automatically withdrawn as stated in condition No. 4 supra.

Yours faithfully,


General Manager,
Distt. Industries Centre
Kangra at Dharamshala

4338-39
Endst. No:-Ind/ Kgr/IA/Chanour/Plot No.3/ Ph.-II

Dated: 19/02/20

Copy for information forwarded to :-

1. The Director of Industries, Himachal Pradesh, Shimla-171001 in favour of information please.
2. The Executive Engineer HPSIDC Ltd. SWCA Service Building Sansarpur Terrace (HP)


General Manager,
District Industries Centre
Kangra at Dharamshala





OFFICE OF THE ASSISTANT ENGINEER, HIMACHAL PRADESH
STATE INDUSTRIAL DEVELOPMENT CORPORATION LTD.

SUB-DIVISION SANSARPUR TERRACE, TEHSIL JASWAN DISTT.KANGRA(H.P.)
TEL. & FAX NO. 01970-256-436 E-MAIL:- hpsidcdshala@gmail.com

POSSESSION LETTER

With reference to General Manager District Industries Centre Kangra at Dharamshala, Distt. Kangra (HP) letter No. Ind/kgr/IA/Chanour/Pt-3-461 dated 28.04.2022, the possession of Plot no.3 measuring 4000.00 Sq. Mtrs. in area at Industrial Area Chanour, Distt. Kangra (H.P) is hereby handed over to Sh. Sandeep Ohri, ward No. 7, Main Bazar Kangra, Tehsil and Distt. Kangra(H.P).(Partner of M/s Feel Organic Products.) today on dated 28.05.2022.

Handed over by:-


Junior Engineer,
HPSIDC Limited
I.A. Sansarpur Terrace
Tehsil Jaswan Distt.Kangra(H.P).

Taken over by :-


Sh. Sandeep Ohri, Ward No. 7,
Main Bazar Kangra,
Tehsil & Distt.Kangra(H.P).
(Partner of M/s Feel Organic Products).

Ref. No. AE/HPSIDC/SPT/103-84-85 Dated:- 28/05/2022

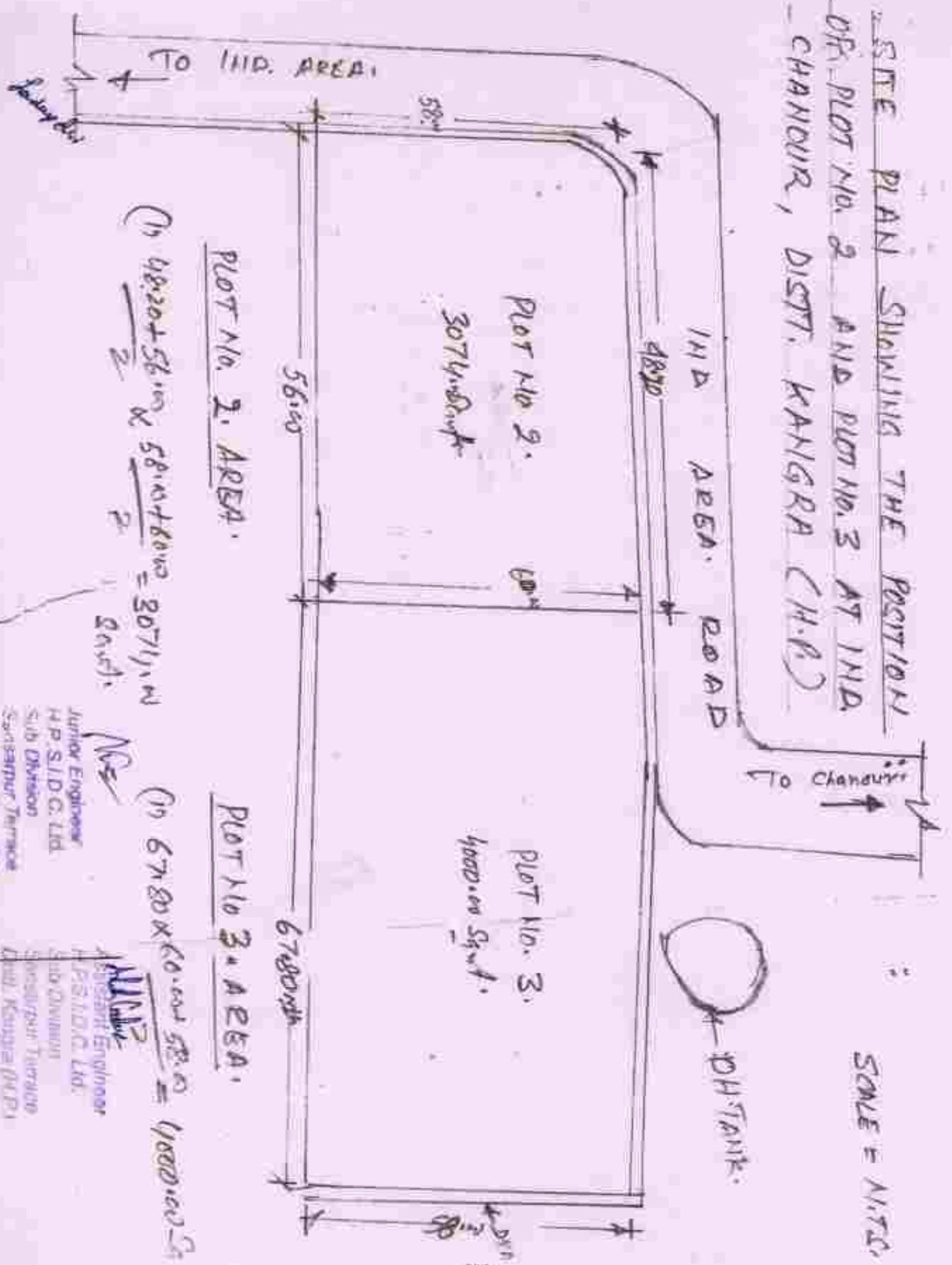
✓ Sh. Sandeep Ohri, ward No. 7, Main Bazar Kangra, Tehsil and Distt. Kangra(H.P).(Partner of Feel Organic Products.) for information and necessary action please.

2.The General Manager, District Industries Centre, Kangra at Dharamshala Distt.Kangra (H.P). w.r.t. office letters no. Ind./Kgr/IA/Chanour/Pt-3-461 dated 28.04.2022 for information please.


Assistant Engineer
HPSIDC Limited
Sub-Div.Sansarpur Terrace
Distt. Kangra (H.P.)

SITE PLAN SHOWING THE POSITION OF PLOT NO. 2 AND PLOT NO. 3 AT IND. CHANOUR, DISTT. KANGRA (H.P.)

SCALE = 1/100



$$(1) \frac{48.20 + 56.00}{2} \times \frac{58.04 + 80.00}{2} = 3071.11 \text{ Sq.m.}$$

Junior Engineer
 H.P. S.I.D.C. Ltd.
 Sub Division
 Sansarpur Terraco
 Distt. Kangra (H.P.)

$$(2) 67.80 \times \frac{40.00 + 58.00}{2} = 4000.00 \text{ Sq.}$$

Assistant Engineer
 H.P. S.I.D.C. Ltd.
 Sub Division
 Sansarpur Terraco
 Distt. Kangra (H.P.)



हिमाचल प्रदेश HIMACHAL PRADESH

08AA 475330

AGREEMENT TO LEASE

This agreement to lease is made on this 28 th day of April 2022 between the
 Governor of Himachal Pradesh through the Dy. Director of Industries, Single Window Clearance
 Agency _____ /General Manager, District Industries Centre Dharamshala /Member
 Secretary, Single Window Clearance Agency _____ (hereinafter called the

Department) of the - First Part and M/s

Feel Organic products Dist No. 3 1A Chaman
Schne (Delme) USA: (Kagre Ltd)
Partnership concern having its registered office at Kagre

Industrial Enterprise which shall include its successor, assignees and legal heirs/representatives)
 of the Second Part.

Sandeep Dhillon

R.M. Singh
 General Manager
 District Industries Centre
 Dharamshala (H.P.)

17109 ... 22/10/92
feed organic product
R.R.C.M. Tunda



Ritjann

Sunday shu

Whereas the proposal of Industrial Enterprise for setting up of Micro/Small/Medium/Large Scale Enterprise for the manufacture of Formaldehyde Unit stands acknowledged by the Department by approval of project number _____ dated _____ or/and approved by the State Level Single Window Clearance & Monitoring Authority (SLSWCA/MA) as conveyed by Director of Industries/Commissioner Industries, H.P. vide letter No. 4338 dated 19/2/22 (in case the project proposal is for setting up of Medium & Large Scale Enterprise.)

Whereas the Industrial Enterprise had applied to the Department for allotment of 4000 Sq.mtr. land /plot in the Industrial Area Chanam Tehsil Dehra District Kangra for establishment of the said Enterprise and the Department has agreed to the request as made and allotted plot No. 3 /land measuring 4000 Sq.mtrs in the Industrial Area / Village Chanam, Tehsil Dehra District Kangra on terms & conditions stipulated in the provisional allotment letter No. 4338 dated 19/2/22 and as per provisions contained in the "Rules Regarding Grant of incentives, concessions and facilities to the Industrial Units in H.P.-2019" as amended from time to time (hereinafter referred to as (Incentives Rules-2019).

And whereas the Industrial Enterprise has deposited a sum of Rs 4,80,000/- as 12% of the total premium of land/plot to the Department.

Now this agreement witness as under subject to exceptions, covenants terms and conditions hereinafter contained, that is to say:-

Sandeep Sharma

Rohand
General Manager
District Industries Centre
Dharamshala (H.P.)

1. That the Industrial Enterprise hereby agrees to accept and abide with the terms & conditions of the provisional allotment stipulated in the provisional allotment letter No. 4338 dated 19/2/82 and acknowledges that these terms & conditions stand incorporated in this agreement to lease and form part thereof. The Industrial Enterprise hereby agrees that the terms & conditions of the provisional allotment shall also form a part of the lease deed to be executed with the Industrial Enterprise.
2. That a regular lease deed will be entered into between the Department and the Industrial Enterprise after the fulfillment/submission of the following conditions/documents by the Industrial Enterprise:-
 - i) Proof of obtaining all necessary approvals/registration of the different Department/Agencies of the State Government and Central Government as applicable to the enterprise.
 - ii) Proof of obtaining the sanction of the loan for the approved enterprise from the financial institution(s), if any.
 - iii) In case the Industrial Enterprise is self-financed, proof of placement of firm orders of at least 50% of the estimated cost of plant and machinery and incurred at least 50% expenditure on building as per the project report.
3. The allottee will pay GST on lease /bid amount/Shed as per rules of Govt. of India

The registration and other charges concerned therewith shall be borne by the allottee/ Industrial Enterprise.

In witness whereof the Industrial Enterprise is a Small has affixed its seal on the agreement:

WITNESSES:

[Signature]

1. Davinder Kataria
D.P.
2. M₁ Smartha Bai Sanitija
Plot No 2 1A Chamu
Tehsil Dehra D.B. Kangra
3. G₀ Wansol Arjun Gali
Kangra (H.P.)

Signed by:

[Signature]
General Manager
For and on behalf of ~~Director~~ Industries Centre
Dharamshala (H.P.)

[Signature]
for and on behalf of 2nd Part
Sandeep Chhⁿ Datta
M₁ Fertil Organic
Plot No 3 1A Chamu
Tehsil Dehra
D.B. Kangra
G₀ Ward No 7 Main Bazaar
New Police Station

Government of Himachal Pradesh
Department of Industries

No. Ind.A(F)8-1/2019

Dated Shimla-02, the

5th March, 2019.

NOTIFICATION

On the recommendations of the Standing Committee, the Governor, Himachal Pradesh is pleased to declare the following land in Muhal/Mauza Chanour & Behar, Mauza Chanour in Tehsil Dudar, District Kangra as 'Industrial Area' in the interest of industrialization in the State, with immediate effect:-

Name of Distt. & Industrial Area.	Name of Revenue Village/Muhal	Area	Khasra No.
Kangra, Industrial Area Chanour	Chanour	11-45-92 Hect.	308/647/367
	Behar	12-38-90 Hect.	134/647/165
Total		23-84-82 Hect.	

By Order

Manoj Kumar, IAS
Addl. Chief Secretary (Inds.) to the
Government of Himachal Pradesh

5th March, 2019

Endst. As above.
Copy forwarded to:-

Dated Shimla-02, the

1. All the Administrative Secretaries to the Government of H.P.
2. The Director of Industries, Himachal Pradesh, Shimla-01.
3. All the Deputy Commissioners in Himachal Pradesh.
4. The Managing Director, HPSIDC, Shimla-01.

(Abid Hussain Kadiq, IAS)
Special Secretary (Inds.) to the
Govt. of Himachal Pradesh.
Phone No. 0177-2621902



हिमाचल प्रदेश HIMACHAL PRADESH

539685

AGREEMENT FOR ADMISSION OF PARTNERS IN PARTNERSHIP DEED

THIS AGREEMENT, is executed on 2nd day of December, 2021 at Kangra, Himachal Pradesh, between: -

- 1) Mr. Sandeep Ohri S/o Raghu Nandan Ohri aged 55 years, S/o Late Sh. Raghu Nandan, R/o Near Police Station Colony, Ward N 7 Main Bazar Kangra, Kangra (T), Kangra, and Himachal Pradesh-176001, Adhar card Number 272441851262 and PAN No AACPO4149A of the First Part.
- 2) Mr. Devinder Kumar Dhir S/o Late Sh. Prem Nath Dhir aged 56 years, R/o H.No. 642, Sector-11, Panchkula Haryana-134109. Adhar card Number - 653722057059 and PAN No ABLPD0028K of the Second Part.
- 3) Mr. Jatin Kalra S/O Sh.Devinder Kalra, aged 22 years, R/o Ward no.8, Arjun Dass Gali, VPO Kangra, Himachal Pradesh-176001. Adhar card Number - 650046056601 and PAN No GDIPK3941R of the Third Part.
- 4) Mr. Sanjeev Kumar Sharma S/O Sh.Pran Nath Bharti, aged 56 years, R/o 412, Seth Vihar CGHS, Plot no.4, Sector 18 A, Dwarka, New Delhi 110078. Adhar card Number - 868480381178 and PAN No ALPS9622G of the fourth Part.

And that this supplementary Partnership Deed supercedes the Partnership deed of the Firm registered on 23rd August 2021, with the reforms and amendments as proposed by the Partners in the original Partnership deed.

All the parties are adult and are of sound mind. Hereinafter each of them called 'PARTNER'.

Whereas the parties of First & Second part, are carrying on the business of Manufacturing of Formaldehyde & other related products under the name of **M/s Feel Organic Products** having Corporate Office at VPO Sadarpur, Near Medical College, Tehsil Nagrota Bhagwan, District Kangra, Kangra, Himachal Pradesh- 174821 w.e.f. 23.08.2021 as per the partnership deed registered on 23 August 2021 and the location of the plant is at Industrial Area, Chonour Khad, Distt Kangra, Himachal Pradesh-177113 subject to the terms and as per the mutual decision of all the existing partners, add two new partners.

Sandeep Ohri

Devinder Kumar Dhir

Jatin Kalra

Sanjeev Kumar Sharma
 Registrar
 District Kangra
 Distt. Kangra



हिमाचल प्रदेश HIMACHAL PRADESH

539684

1. Mr. Jatin Kalra S/O Sh.Devinder Kalra, aged 22 years, R/o Ward no.8, Arjun Dass Call, VPO Kangra, Himachal Pradesh-176001. Adhar card Number - 650046056601 and PAN No. GDIKK8941R.
2. Mr. Sanjeev Kumar Sharma S/O Sh.Pran Nath Bharti, aged 56 years, R/o 412, Seth Vihar CGHS, Plot No.4, Sector 18 A, Dwarka, New Delhi 110078. Adhar card Number - 868480381178 and PAN No ALZPS9622G.

LINCEPTION:

- (i) That the name of the Partnership Firm shall be **M/s Feel Organic Products** or such other name as mutually decided by the parties to this deed.
- (ii) That the business of the Partnership firm shall be carried on at **Registered Office at VPO Sadarpur, Near Medical College, Tehsil Nagrota Bhagwan, District Kangra, Kangra, Himachal Pradesh- 174021** and the location of the current plant is at **Industrial Area, Chonour Khad, Distt Kangra, Himachal Pradesh-177113.**

2. OBJECTIVE:

- (i) That the Partnership firm 'FEEL ORGANIC PRODUCTS', shall be engaged in the Manufacturing and trading/sale of Formaldehyde and derivatives thereof.

3. COMPOSITION AND PERCENTAGE PARTNERSHIP :

1. That the capital investment, profits and losses of the firm shall be shared by the parties to this deed in the following proportions as per their capital investment: -

(i) Sandeep Ohri	25.5% in Profit and Loss
(ii) Devinder Kumar Dhir	24.5% in Profit and Loss
(iii) Jatin Kalra	25.5% in Profit and Loss
(iv) Sanjeev Kumar Sharma	24.5% in Profit and Loss

Sandeep Ohri

Devinder Kumar Dhir

Jatin Kalra

Sanjeev Kumar Sharma

Sub-Registrar
Tehsil Kangra
Distt. Kangra (H.P.)

1. ASSIGNMENT, DUTIES and Responsibilities:

- (i) That the Partners jointly agree to faithfully and diligently perform, undertake, and discharge the responsibilities, in their individual capacity to carry on the business of the Firm for mutual benefits.
- (ii) That the Partners shall deputee responsible representatives to ensure transparent working, efficiency and quality work.

2. FIXED AND WORKING CAPITAL:

- i That the Partners are aware that the Total Investment required to install / establish the Plant for manufacturing of Formaldehyde in Kangra Distt, Himachal Pradesh, shall be about 12 Crores, to be managed from the Promoters' resources, Banks and other borrowings;
- i That, the Partners agree to open a new Current Account in the name of the Firm, with Joint Mode of operation (by minimum three Partners)
- i That, the Partners agree to deposit a seed Capital of Rs.5 Lakh each, to maintain a Minimum balance of Rs.20 Lakh in the Current Account, at all times.
- i That the Partners agree to deposit their share of Investible funds, over and above the seed Capital in Advance each month (not later than one week prior to the due date of payment/s) as per the anticipated financial requirements, proportionately.
- (iii) That the PARTNERS agree to contribute to the Promoters' (Partners') Capital in proportion to their Share, for the Capital investment including the cost of Land and building, Acquisition costs, Business Inception costs, Installation of Plant and Machinery, and also the Working Capital for all operational expenses as required, from their individual resources.
- (iv) That, in case of any sudden/ immediate occurrence of expenses which may be borne by any of the Partners as per the prevailing individual capacity, the rest of the Partners shall mandatorily deposit their proportionate share of Capital latest within a fortnight of occurrence of such expense/investment.
- (v) That a weekly/fortnightly statement of Expenses/Investment accrued/due, shall be prepared and shared with all the Partners. And that each Partner shall ensure to pay/settle their share of expenses/investment, (to the Firm and/or to the other Partner/s as applicable) immediately, and NOT LATER than one week of intimation.
- (vi) That the Secured or Unsecured Loans/ Cash Credit Limits/ Overdraft facilities shall be obtained by the Firm, as and when required and That the Partners agree to assume the accountability to repay/settle the liabilities, including but not limited to the payment of loan-linked Instalments, Interests, procurement costs, penalties etc. arising out of such procurement of Funds, in proportion to their defined Partnership Share.
- (vii) That the PARTNERS agree to maintain their respective Partnership Share, by

Sudesh Singh

[Signature]

[Signature]

15/12/22
Sudesh Singh
Kangra Distt.



Himachal Government Judicial Paper

Ensuring to invest/spend proportionately to their respective share of Partnership. Maintaining investment share in proportion, is a precursor to maintain and establish the right to the Percentage-Share of Partnership, as defined in the present Agreement.

- (viii) Prior to the PRODUCTION Phase. Any delay in payment by any of the Partner shall lead to levying of a Late-interest @ 2 % (Two Percent) per month, calculated for the number of days from the date of occurrence to the date of payment. This interest shall be payable to the Partners facilitating the Gap-funding for the deficit caused due to the late-payment by the defaulting Partner(s). The amount of such interest shall be deducted from the seed Capital of the defaulting Partner and be paid to the facilitating Partner by the end of the month. The defaulting Partner would be required to replenish his seed Capital by the following month.
- (ix) That From the Date of start of PRODUCTION, Any Partner failing to maintain their respective Partnership Share in a Quarter, will be entitled to lowering of his/their (defaulter's) Profit percentage (proportionate to the gap/dip of investment) in the following Financial Quarter temporarily. This would be in addition to the Late-interest imposed on the defaulting Partner @ 2% (Two percent) Late-interest per month, calculated for the no. of days of delay. In such a case, the Gap-funding shall be facilitated by any/all of the rest of Partners, and the profit share of the defaulting Partner, along with the Late-interest amount, shall be proportionately paid to the contributing Partner. The Profit Sharing Percentage will resume to normalcy from the Next Quarter if the defaulting Partner tops up /jacks up, his investment to match his Partnership Share as defined in the present Agreement.
- (x) That, Any Partner's who funds more than their proportionate Partnership share, in a Quarter (Gap-Funding), shall be entitled to higher Profit Share in the following Financial Quarter, in proportion to the higher Percentage Investment made by him/them.

3. SALARY AND PROFIT DISTRIBUTION TO THE PARTNERS :

- (i) That, No PARTNER will draw any amount in the form of Remuneration, Salaries, Interest on Capital etc. for the entire gestation period i.e. From the Date of this Agreement upto after completion of atleast three Billing cycles (Three months' Billing) post the start of Production.
- (ii) That, if the Profitability meets or exceed the Business projections, an equal amount as monthly Salary shall be drawn by all the Partners each month. The amount of Salary shall be decided by all the Partners in consent and mutual agreement. And the same may be revised, hiked or reduced by the Partners in consent and mutual agreement, from time to time.
- (iii) The aggregate total amount payable as Salaries to the Partners shall not exceed 25% of the total net Profit of the Firm.
- (iv) From the third year of Production, and on achieving positive healthy progression, the Salaries for the Partners shall be increased equally and to the extent of aggregate Salary amount of all Partners upto 40% of the Net

Sunder Singh

Devi

Sharma

[Signature]

Distt. Kangra (H...)

Himachal Government Judicial Paper

Profit of the Firm.

- 3 The Balance % of Profit share shall be recycled and added to the Firm's Capital. This arrangement shall continue till seven years of Production Or till the full payment/settlement of all Long term and Short term, Secured and Unsecured Loans, Borrowings and Liabilities, whatever is earlier.
- 4 (v) That, once the entire Liabilities (Secured Loans/ unsecured Loans) of the Firm have been paid/settled in full, the Partners, with mutual consent and agreement, shall be allowed to withdraw their respective Profit share to the extent of 100% . after the closure of each Financial Year, and filing of annual returns.
- 5 (vi) That, the Partners may, with mutual consent and agreement, decide to set aside any percentage of their Profit share proportionate to their Partnership share to be added to the Firm's Capital for Expansion/Addition of Capacity, and /or diversification into different/ New Business lines, as per the consent and approval of all the Partners to the Agreement.



4. GENERAL CONDITIONS :

- (i) That the PARTNERS agree to repay the Loans/debts and their interests thereof, in equal proportions if the Loans/debts are raised by the Firm, against the assets of the Firm.
- (ii) That each PARTNER shall be deemed to own an equal share of the Land and buildings, movable and immovable Assets procured, raised, purchased, leased, built, and installed for the said business.
- (iii) That the Partners shall be deemed to jointly own the assets, appreciations, interests, Goodwill and profits of the Firm in equal proportion and also be jointly accountable to share liabilities, penalties and losses in equal proportion.
- (iv) That each PARTNER shall be deemed to be accountable to an equal share of liabilities, losses, depreciations, interests, penalties, lawsuits and decisions thereof.
- (v) That an initial Promoters' capital as per the Business Plan by the PARTNERS shall be jointly deposited by the Partners in proportion of their Partnership share, and all the expenses including Inception costs shall be incurred from the said Bank Account for the accounting purpose. Further it is agreed that the said Bank Account Balance shall be replenished in a regular time interval, say weekly or fortnightly, as per need. And each PARTNER shall responsibly deposit their share of investment, in the said Account timely and well in advance.
- (vi) That in case of any unforeseen eventuality in future, or compelled or unexpected incapacity due to any compelling circumstances, if any of the Partners is no more available, the Partnership will continue with the same terms with the concerned Partner or their Family. And that the Family of such Partner shall be entitled the opportunity to provide the replacement of such Partner from their immediate family. And the suitable amendment in the Partnership

Spandip Singh

[Signature]

[Signature]

[Signature]
Sub-Registrar
Tehsil Kangra
Distt. Kangra (H.P.)

Himachal Government Judicial Paper

Deed will be made to accommodate the new Partner on the prevailing terms and conditions. In case, a replacement is not provided by such Partner/Family, the Partnership will continue through existing management arrangement and/or adding/appointing a new suitable Manager/employee at the cost of such Partner/Family. The Shares of each Partner will continue in line with this Agreement. However, if the family of the existed Partner may choose to opt out, they may sell their Share/s to the rest of the Partners against suitable and reasonable proceeds against their Partnership Share.

- (vi) In the unforeseen and unexpected event of business dilution due to any reasons, the Movable and immovable Assets including but not limited to the Land and Buildings, Plant and Machinery, Stock inventories, Receivable, Bank Account balances, Cash in Hand, and Goodwill shall be liquidated and equally distributed to the Partners, net of all liabilities including but not limited to the Debtors, Loans, Interests, Penalties, Depreciations, Losses, Lawsuits and Provisions thereof.
- (vii) The profits from the venture can be proportionately distributed amongst the Partners in equal proportion, net of prevailing liabilities but only after achieving breakeven.

5. CONFIDENTIALITY :-

That the Partners, undertake to maintain confidentiality of the Project including but not limited to Work strategies, technical aspects, Customer base, Pricing and distribution Policies etc. *

6. APPLICABILITY :

- (i) That the Partnership shall be deemed to have commenced its business w.e.f. 23.08.2021 for the purpose of carrying on the business of manufacturing and trading of above said products or such other business or businesses as mutually decided by the parties to this deed.
- (ii) That the Partnership shall be 'AT WILL' unless determined by the process of law.
- (iii) That the capital of the firm shall be as per book of accounts.
- (iv) That the firm can take loan from and advance loan to the parties to this deed and even from/to the outsiders with or without interest or at a rate to be mutually decided by the parties to this deed and the firm can also take deposits from 3rd parties/financial institutions etc. and pay interest to them as mutually agreed to by the parties to this deed.
- (v) That the firm shall maintain regular books of account recording therein all the daily transaction of the business. Every partner shall have right to access to the books of account at all reasonable hour and taking copies of such extracts there from as may like. The account books shall be closed at the end of every financial year i.e. 31st of March every year.
- (vi) That the firm shall not be liable for the individual debts or liabilities of any partner and in case the firm is made to make the payments of any such individual debt or liability of any partner then the firm shall be entitled to reimbursement and compensation of such amount, from the share of such partner on whose behalf and for whose debt the payment was made.

Smitraj Singh

D.P.R.

R. Singh

R. Singh

Sub Registrar
Tehsil Kangra
Distt. Kangra (H.P.)

No 0405169

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Himachal Government Judicial Paper



- (vii) That for day to day management of the firm all the parties to this deed shall be empowered to do all act and things as may be necessary and expedient in carrying on the business of the firm.
- (viii) That the bank account/accounts shall be maintained in the name of the firm and the parties to this deed shall be entitled to operate such account jointly
- (ix) The authorized partner(s) or any other person authorized by partners may avail the financial, monetary and any other products and services offered by scheduled banks, Corporate Internet Banking, Corporate Care Services (phone banking channels and e-mail), and do all such acts, deeds and things necessary, and to execute all such documents as are necessary, in connection therewith, and to operate the said account in the name of the firm, using the aforesaid facilities, and to accept and adhere to all the terms and conditions as are necessary and comply with all other formalities as prescribed by above said scheduled banks in this regard and agree to such changes and modifications in the said terms and conditions as may be suggested by bank from time to time and to execute such deeds, documents and other writings as may be necessary or required for this purpose.
- (x) That no partner shall alienate or transfer his share or interest in the firm to any stranger or outsider except with the permission of the continuing partners.
- (xi) The Capital of the partners shall carry an interest payable to any of the partners at the maximum rate of 12% per annum prescribed under the Income tax Act. Such interest may be calculated and credited to the account of each partner at the close of Accounting year, but only after achievement of Break even.
- (xii) That all the partners of this deed shall devote necessary attention to the partnership firm and shall be true and faithful and shall not do and suffer anything to be done that may be detrimental to the interest of the business of the partnership.

7. AMENDMENT AND MODIFICATIONS :

- (i) That the partners may add, alter, change or amend any of the provisions of this deed by mutual consent as and when the partners may decide from time to time.

8. DISPUTE REDRESSAL:

- (i) That in the case of any dispute or difference among the partners the matter shall be referred to the arbitration of Himanshu Tank Chartered accountant S/o Sh. S.R. Tank R/O Dharamshala Road Cherru Distt Kangra H.P. under the Indian Arbitration Act 1940 whose decision shall be binding on the parties and their legal heirs

Any other matter, for which no provision is made under this deed, shall be governed by the Indian Partnership Act, 1932.

[Handwritten signatures and names]

Sub-Registrar
Tehsil Kangra
Distt. Kangra (H.P.)

IN WITNESS WHEREOF THE PARTIES AFOREMENTIONED HAVE SIGNED THIS DEED IN THE PRESENCE OF WITNESSES ON THE DAY AND YEAR FIRST ABOVE MENTIONED.



Witnesses

Partners

- Amk*
1. Amal Kumar
810 Old Sir
No. Ladkha
70, Street Dikhan
ADAR NO - 4738
3392 7833 2
 2. *Pls*
Pardeep Kumar
810 Amal Sir
No. Kaled - 2
W/Bagh Dikhan
Kane ADAR
NO - 0138 7345 7681

Sandeep Dhir
(Sandeep Dhir)

Devinder Kumar Dhir
(Devinder Kumar Dhir)

Julia Kalia
(Julia Kalia)

Sanjeev Kumar Sharma
(Sanjeev Kumar Sharma)

Witnesses

S/S

Sunder Lal Singh
Ladkha, Kaled
W/Bagh Kana
ADAR NO - 7189
4040 4040



Sub-Registrar
Tehsil Kangra
Distt. Kangra (H.P.)



SANDEEP OHRI(Individual)

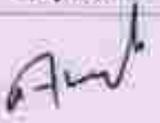


Party No.	Party Name and Address	Finger Print	Signature
1	SANDEEP OHRI RESIDENT OF NEAR POLICE STATION COLONY WARD NO7 MAIN BAZAR KANGRA TEH AND DISTT KANGRA HP Kangra Kangra Himachal Pradesh PAN No.:		
2	DEVINDER KUMAR DHIR RESIDENT OF HOUSE NO 642, SECTOR-11, PANCHKULA HARYANA- 134109 Himachal Pradesh PAN No.:		
3	JATIN KALRA RESIDENT OF WARD NO8, ARJUN DASS GALI KANGRA TEH AND DISTT KANGRA HP Kangra Kangra Himachal Pradesh PAN No.:		
4	SANJEEV KUMAR SHARMA RESIDENT OF 412, SETH VIHAR CGHS, PLOT NO 4, SECTOR 18 A, DWARKA, NEW DELHI 110078 Himachal Pradesh PAN No.:		

Witness:

Sr.NO	Witness Name and Address	Signature
1	PARDEEP KUMAR Nagrota Bagwan, Kangra, Himachal Pradesh	

Sub-Registrar
 Tehsil Kangra
 Distt. Kangra (H.P.)

Sr.NO	Witness Name and Address	Signature
2	Amit Kumar Shahpur, Kangra, Himachal Pradesh.	

Identifier:

Sr.NO	Identifier Name and Address	Signature
1	Surinder Pal Singh Lambardar Ujjian Kangra Kangra, Kangra, Himachal Pradesh PAN No.:	



Sub-Registrar
Tehsil Kangra
Distt. Kangra (H.P.)

CERTIFICATE OF REGISTRATION

(As per the provisions of Registration Act, 1908)

The contents of Document read over and explained to the parties who understood all the contents/conditions and admit the execution to be correct. The parties and witnesses have been identified by **(Surinder Pal Singh Lambardar Ujjian Kangra, Aadhaar Card *****4040)**. Hence, the document is here by REGISTERED.

[Handwritten Signature]
Sub-Registrar
Signature of Registering Officer
Distt. Kangra (H.P.)



Deed Endorsement

Token No :- 20220000011433

District Name :

Kangra

This document is presented for registration by Sh./Smt. **SANDEEP OHRI** s/w/d/o/w/o **RAGHU NANDAN OHRI** before me today on **01-02-2022** Day of **Tuesday** at **10:53:39 AM**


Signature of Presenter


Sub-Registrar
Tehsil Kangra
Distt. Kangra
Signature of Registering Officer

Document Details

Book No:4 Registration No. : 11/2022 Registration Date : 01-02-2022 Description of Deed : 46 - Partnership or Co-partnership Deed for every capital (Deed Sub Title - Partnership or Co-partnership Deed for every capital) Deed Execution Date : 31-01-2022
Stamp Duty :- Rs. 200/-, Registration Fee :- Rs. 100/-, Pasting fee :- Rs. 10/-,

Deed Pasting Detail

No. of Deed Pages: 8
Additional Book Volume No. : 132
From page : 35 To page : 42

Annexure Pasting Detail

No. of Annexure Pages: 6
Supplementary Book Volume No. : 1
From page : 61 To page : 66

Duty and Fee Details

Stamp Duty
Amount: Rs. 200/-
Payment Mode: Stamp Paper
Issued by: Stamp Vendor
Vide No.: 3739
Date: 02-12-2021



Registration Fee/Pasting Fee
Amount: Rs. 100/-
Payment Mode: CASH
Issued by: SRO Office
Vide No.:
Date: 01-02-2022

Amount: Rs. 10/-
Payment Mode: CASH
Issued by: SRO Office
Vide No.:
Date: 01-02-2022


Sub-Registrar
Tehsil Kangra
Distt. Kangra
Signature of Registering Officer

No. Ind/Kgr/IA/Chanour/P-3/ 3607
Office of the General Manager,
Distt. Industries Centre, Kangra at Dharamshala

Dated: Dharamshala 20.01.2023

To

✓ M/s Feel Organics Products
Plot No. 3, Industrial Area, Chanour,
Tehsil Dehra District Kangra (HP).

Subject: Regarding approval of water supply.

Sir,

This is with reference to your letter No. Feel Organic Products- Chanour-
KNG/HP-10-2022/112 dated 09.01.2023 on the subject cited above.

In this regard it is informed that development works of water supply
scheme for Industrial Area Chanour is under progress. Hence, water connection as per your
requirement of 86 KLD shall be released on completion of said work.

Yours faithfully,


(Rajesh Kumar)
General Manager,
District Industries Centre,
Kangra at Dharamshala

No. Ind/Kgr/IA/Chanour/P-3/
Office of the General Manager,
Distt. Industries Centre, Kangra at Dharamshala

Dated: Dharamshala

2023

To

Assistant Engineer
H.P.State Electricity Board P() Limited,
Sub-Division Dahi Pukhar, Tehsil Dehra,
Distt. Kangra (HP).

Subject:- Regarding release of power load.

Sir,

On the above cited subject it is submitted that M/s Feel Organic Products has been allotted plot No. 3 at Industrial Area, Chanour for setting up of unit for manufacturing of Formaldehyde. The promoter of the said unit has filed an application for power load of 250 Kw for its operation.

In this regard it is informed that this office has no objection if 250 Kw power load is sanctioned in favour of the applicant.

Yours faithfully,

(Rajesh Kumar)
General Manager,
District Industries Centre,
Kangra at Dharamshala

Endst.No. Ind/Kgr/IA/Chanour/P-3/ 2609

Dated: 20-01-2023

Copy to M/s Feel Organics Products, Plot No.3, Industrial Area,
Chanour for information & necessary action.

General Manager,
District Industries Centre,
Kangra at Dharamshala

Feel Organic Products

(M) +91 9418080008, +91 9311743737

E-mail.: feelorganicproducts@gmail.com

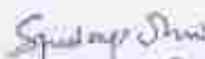
Date: 26.12.2022

AUTHORIZATION LETTER

"RESOLVED that Mr. Devinder Kumar Dhir (Partner) of the company is hereby authorized to apply, file & submit various applications, forms, declarations, papers, affidavits, documents, etc. for obtaining Sanctions, Permissions for Environmental & Pollution Clearances and various other approvals from concerned State & Central Government Departments / Authorities for the proposed Formaldehyde Manufacturing Unit located at Plot No. 3, Industrial Area Chanour Phase-II, Teh. Dadasiba, Distt. Kangra, Himachal Pradesh by M/s. Feel Organic Products.

"RESOLVED FURTHER that Mr. Devinder Kumar Dhir (Partner) is authorized to enter into sign, execute and submit required documents for the purpose mentioned hereinabove. He is further authorized to do all other such acts and agreements necessary for the same". Signatures of all the partners are given below:

For FEEL ORGANIC PRODUCTS


Partner

Mr. Sandeep Ohri (Partner)

For FEEL ORGANIC PRODUCTS


Partner

Mr. Devinder Kumar Dhir (Partner)

For FEEL ORGANIC PRODUCTS


Partner

Mr. Jatin Kalra (Partner)

For FEEL ORGANIC PRODUCTS


Partner

Mr. Sanjeev Kumar Sharma (Partner)

Feel Organic Products

(M) +91 9418080008, +91 9311743737

E-mail : feelorganicproducts@gmail.com

Date: 25.02.2023

UNDERTAKING

I, Devinder Kumar Dhir (Partner) S/o late Sh. Prem Nath Dhir, on behalf of M/s. Feel Organic Products with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra, Himachal Pradesh solemnly affirm that:

1. There is no litigation pending against the unit land.
2. That clearance is not required under The Forest Conservation, Act, 1980.
3. That clearance is not required under The Wildlife Protection Act, 1972.
4. That clearance is not required under The C.R.Z Notification, 1991.

Date: 25.02.2023

Place: Kangra



Devinder Kumar Dhir
(Partner)

TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	EL101022EC019
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiya, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Project Site	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22-Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Particulate Matter(PM10)	µg/m ³	46	48	46	45	49	43	46	49
2	Particulate Matter(PM2.5)	µg/m ³	23	24	23	22	27	21	25	26
3	Sulphur Dioxide (SO2)	µg/m ³	8	7	8	6	8	6	8	9
4	Nitrogen Oxides (as NO2)	µg/m ³	19	18	20	16	19	20	18	20
5	Ammonia (NH3)	µg/m ³	BDL (DL-6)							
6	Ozone (O3)	µg/m ³	BDL (DL-2)	BDL (DL-2)	3.5	3.0	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)
7	Carbon Monoxide (CO)	mg/m ³	0.53	0.55	0.50	0.54	0.43	0.53	0.55	0.49
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	EL101022ECD19
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
End of Report



Umesh Kumar
Authorized Signatory-Chemical

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TEST REPORT

ULR No.	NA	Test Report No.	EL101022EC019/A
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 0T:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Project Site	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22-Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Benzene as C6H6	µg/m3	BDL (DL-5.0)							

- Remarks: Test methods & standards are attached along with the reports
- Other information: This test report is the part of Test Report No. EL101022EC019.
- Abbreviations: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

Umesh Kumar
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S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



ULR No.	NA	Test Report No.	EL101022EC025
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/S061 DT:10.09.2022
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (If any)	NA
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Dadasiba	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	10/10/2022 to 03/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22-Clear sky 27-28.10.22-Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Particulate Matter(PM10)	µg/m ³	45	47	45	44	48	42	45	48
2	Particulate Matter(PM2.5)	µg/m ³	23	25	22	22	25	22	23	26
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	7	8	6	8	6	8	9
4	Nitrogen Oxides (as NO ₂)	µg/m ³	19	18	20	16	18	19	18	20
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.53	0.55	0.50	0.54	0.43	0.52	0.54	0.49
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	EL101022EC025
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Remarks : Test methods & standards are attached along with the reports

Other Information :

Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar
Authorized Signatory-Chemical



TEST REPORT

ULR No.	NA	Test Report No.	EL101022EC025/A
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061, DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Village Dadasiba	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Benzene as C6H6	µg/m3	BDL (DL-5.0)							

Remarks

- Other Information : Test methods & standards are attached along with the reports
Abbreviations : This test report is the part of Test Report No. EL101022EC025.
Terms & Conditions : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


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S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



TC-7477

URL No.	NA	Test Report No.	EI101022ECO26
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory.
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Village Sham Nagar	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22-Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Particulate Matter(PM10)	µg/m ³	46	48	46	45	48	44	47	50
2	Particulate Matter(PM2.5)	µg/m ³	24	25	23	22	28	21	25	27
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	7	7	6	7	6	8	9
4	Nitrogen Oxides (as NO ₂)	µg/m ³	20	19	16	17	19	18	19	18
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)	BDL (DL-2)	2.8	3.0	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)
7	Carbon Monoxide (CO)	mg/m ³	0.51	0.53	0.48	0.52	0.42	0.51	0.53	0.47
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	EL101022EC026
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
End of Report



TEST REPORT

ULR No.	NA	Test Report No.	EL101022EC026/A
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPI/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Village Sharn Nagar	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports

Other Information

: This test report is the part of Test Report No. EL101022EC026.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


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TEST REPORT



ULR No.	NA	Test Report No.	EL101022EC021
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQ5-2009	Customer reference No. (if any)	NA
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Behar	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQ5-2009	Period of Analysis	10/10/2022 to 03/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky. 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Particulate Matter(PM10)	µg/m ³	35	40	38	36	41	38	45	43
2	Particulate Matter(PM2.5)	µg/m ³	18	21	19	18	23	19	23	22
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	8	7	8	7	6	9	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	20	17	19	17	18	17	20	19
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.48	0.51	0.55	0.53	0.49	0.46	0.50	0.45
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	EL101022EC021
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
****End of Report****

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Authorized Signatory-Chemical



TEST REPORT

ULR No.	NA	Test Report No.	EL101022EC021/A
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/S061 01:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQ5-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Village Behar	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQ5-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Benzene as C ₆ H ₆	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports

Other Information

: This test report is the part of Test Report No. EL101022EC021.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

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S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)





TEST REPORT



ULR No.	NA	Test Report No.	EI101022ECO20
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feil Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadariba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Village Chaplah	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Particulate Matter(PM10)	µg/m ³	44	46	44	43	49	42	44	47
2	Particulate Matter(PM2.5)	µg/m ³	22	24	22	21	25	21	24	25
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	7	7	6	7	5	8	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	18	17	19	15	18	18	17	19
5	Amonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.51	0.53	0.48	0.52	0.41	0.50	0.52	0.47
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

Umesh Kumar
Authorized Signatory Chemical



ULR No.	NA	Test Report No.	EL101022EC020
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

- Remarks : Test methods & standards are attached along with the reports
- Other Information :
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
- **End of Report****



TEST REPORT

ULR No.	NA	Test Report No.	EL101022ECO20/A
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (if any)	NA
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Chaplah	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	10/10/2022 to 03/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports

Other Information

: This test report is the part of Test Report No. EL101022ECO20.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


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S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



ULR No.	NA	Test Report No.	EL101022EC023
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Dist. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (If any)	NA
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Bahdal	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	10/10/2022 to 03/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Particulate Matter(PM10)	µg/m ³	45	46	44	43	50	42	49	46
2	Particulate Matter(PM2.5)	µg/m ³	23	24	22	21	26	21	24	25
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	6	7	7	7	5	7	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	20	19	21	17	20	20	19	21
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)	BDL (DL-2)	3.1	3.0	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)
7	Carbon Monoxide (CO)	mg/m ³	0.54	0.52	0.55	0.48	0.41	0.50	0.52	0.56
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

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ULR No.	NA	Test Report No.	EL101022EC023
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
End of Report



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TEST REPORT

ULR No.	NA	Test Report No.	EL101022EC023/A
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/S061 07:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Village Iahdal	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Benzene as C ₆ H ₆	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports

Other Information

: This test report is the part of Test Report No. EL101022EC023.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)





TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	EL101022EC024
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPI/WO/5061 DT:10.09.2022
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (If any)	NA
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Kardni	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	10/10/2022 to 03/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Particulate Matter(PM10)	µg/m ³	46	47	45	44	51	43	50	45
2	Particulate Matter(PM2.5)	µg/m ³	23	24	23	22	28	21	25	24
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	7	7	6	7	5	8	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	18	17	19	15	17	18	17	18
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)	BDL (DL-2)	2.8	3.0	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)
7	Carbon Monoxide (CO)	mg/m ³	0.53	0.50	0.53	0.47	0.40	0.48	0.50	0.55
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

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ULR No.	NA	Test Report No.	EL101022ECC024
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
****End of Report****

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TEST REPORT

ULR No.	NA	Test Report No.	EL101022ECD24/A
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061-07:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (HAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Village Kandol	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Benzene as C6H6	µg/m3	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports

Other Information

: This test report is the part of Test Report No. EL101022ECD24.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



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S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



ULR No.	NA	Test Report No.	EL101022E022
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Village Thor Nichli	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Particulate Matter(PM10)	µg/m ³	39	43	41	40	46	45	47	49
2	Particulate Matter(PM2.5)	µg/m ³	21	23	23	21	24	23	24	28
3	Sulphur Dioxide (SO ₂)	µg/m ³	9	8	9	7	9	9	8	9
4	Nitrogen Oxides (as NO ₂)	µg/m ³	17	15	18	14	18	20	17	19
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)	BDL (DL-2)	3.3	3.1	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)
7	Carbon Monoxide (CO)	mg/m ³	0.49	0.52	0.56	0.54	0.50	0.47	0.51	0.46
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

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ULR No.	NA	Test Report No.	EL101022FC022
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

- Remarks** : Test methods & standards are attached along with the reports.
- Other Information** :
- Abbreviations** : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions** : Please refer terms and conditions on backside of Test Report (Page-1)
- **End of Report****

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TEST REPORT

ULR No.	NA	Test Report No.	EL101022EC022/A
Type of Sample	Ambient Air	Date of Reporting	03/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products, Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 01.10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	06/10/2022, 07/10/2022, 13/10/2022 & 14/10/2022, 20/10/2022, 21/10/2022, 27/10/2022 & 28/10/2022	Date of Receipt of Sample	10/10/2022, 15/10/2022, 22/10/2022 & 29/10/2022
Sampling Location	Village Thor Nichli	Period of Analysis	10/10/2022 to 03/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	06.10.22-Clear sky 07.10.22-Partially cloudy weather 13-14.10.22-Clear sky 20.10.22-Partially cloudy weather 21.10.22- Clear sky 27-28.10.22-Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	06/10/22	07/10/22	13/10/22	14/10/22	20/10/22	21/10/22	27/10/22	28/10/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

Remarks	Test methods & standards are attached along with the reports
Other Information	⊕ This test report is the part of Test Report No. EL101022EC022
Abbreviations	⊕ ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions	⊕ Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Urosh Kumar
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S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO ₂)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO ₂)	80	IS:5182 (Part-6)
5.	Ammonia (NH ₃)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O ₃)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C ₆ H ₆)	05	IS: 5182 (Part-11)



TEST REPORT



ULR No.	NA	Test Report No.	EL051122FC007
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No. 3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (If any)	NA
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Project Site	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	05/11/2022 to 30/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Particulate Matter(PM10)	µg/m ³	45	47	45	44	48	42	45	48
2	Particulate Matter(PM2.5)	µg/m ³	24	26	24	23	28	22	24	27
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	7	8	6	8	6	8	9
4	Nitrogen Oxides (as NO ₂)	µg/m ³	17	16	18	15	17	17	16	18
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	2.8	BDL (DL-2)	3.0
7	Carbon Monoxide (CO)	mg/m ³	0.53	0.55	0.50	0.54	0.43	0.53	0.55	0.49
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	E1051122EC007
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
****End of Report****


Utnesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No.	NA	Test Report No.	EL051122EC007/A
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feet Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/S061 01:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Project Site	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Benzene as C ₆ H ₆	µg/m ³	BDL (DL-5.0)							

- Remarks : Test methods & standards are attached along with the reports
- Other Information : This test report is the part of Test Report No.EL051122EC007.
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar
Authorized Signatory-Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



ULR No.	NA	Test Report No.	E1051122EC008
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiaba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (If any)	NA
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Dadasiaba	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	05/11/2022 to 30/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Particulate Matter(PM10)	µg/m ³	43	45	43	42	47	41	44	46
2	Particulate Matter(PM2.5)	µg/m ³	24	25	23	22	26	21	23	25
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	6	7	6	7	6	8	9
4	Nitrogen Oxides (as NO ₂)	µg/m ³	18	17	19	16	18	18	17	19
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.50	0.53	0.48	0.51	0.41	0.50	0.52	0.47
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

Umesh Kumar
Authorized Signatory-Chemical



ULR No.	NA	Test Report No.	EL051122E008
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
****End of Report****


Umesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No.	NA	Test Report No.	EL051122EC008/A
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Dadasiba	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

- Remarks : Test methods & standards are attached along with the reports.
- Other Information : This test report is the part of Test Report No. EL051122EC008.
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar
Authorized Signatory Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	EL051122EC011
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/S061 0T:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQMS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Sham Nagar	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQMS-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Particulate Matter(PM10)	µg/m ³	42	44	42	41	47	40	42	45
2	Particulate Matter(PM2.5)	µg/m ³	21	24	21	20	26	19	23	24
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	6	7	6	7	5	8	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	18	17	19	15	17	18	17	19
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.50	0.52	0.47	0.50	0.41	0.49	0.51	0.46
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

Unmesh Kumar
Authorized Signatory-Chemical



TC-7477

ULR No.	NA	Test Report No.	E1051122EC011
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

- Remarks** : Test methods & standards are attached along with the reports
- Other Information** :
- Abbreviations** : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions** : Please refer terms and conditions on backside of Test Report (Page-1)
- **End of Report****

Umesh Kumar
Authorized Signatory-Chemical



TEST REPORT

ULR No.	NA	Test Report No.	EL051122EC011/A
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-1 (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Sham Nagar	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-1 (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

- Remarks: Test methods & standards are attached along with the reports
- Other Information: This test report is the part of Test Report No. EL051122EC011.
- Abbreviations: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


Umesh Kumar
Authorized Signatory-Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	EL051122EC005
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Behar	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	03.11.22- Clear sky 04.11.22- Partially cloudy weather 10.11.22- Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Particulate Matter(PM10)	µg/m ³	39	43	41	39	43	41	48	45
2	Particulate Matter(PM2.5)	µg/m ³	20	21	21	20	21	21	26	23
3	Sulphur Dioxide (SO ₂)	µg/m ³	7	8	7	8	7	6	8	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	15	17	20	16	19	17	19	18
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.45	0.47	0.51	0.49	0.46	0.43	0.47	0.42
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	ELO51122EC005
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

- Remarks : Test methods & standards are attached along with the reports
- Other Information :
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
- **End of Report****



Ajmesh Kumar
Authorized Signatory, Chemical

TEST REPORT

ULR No.	NA	Test Report No.	EL051122ECO05/A
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQ5-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Behar	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQ5-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports

Other Information

This test report is the part of Test Report No. EL051122ECO05.

Abbreviations

ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar
Authorized Signatory-Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



ULR No.	NA	Test Report No.	EL051122EC006
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (If any)	NA
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Chapiah	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	05/11/2022 to 30/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Particulate Matter(PM10)	µg/m ³	43	45	43	42	48	41	43	45
2	Particulate Matter(PM2.5)	µg/m ³	22	23	21	20	27	20	23	25
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	7	7	6	7	5	8	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	18	16	18	15	17	18	17	18
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.50	0.52	0.47	0.50	0.41	0.49	0.51	0.46
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

Umesh Kumar
Authorized Signatory-Chemical



ULR No.	NA	Test Report No.	EL051122EC006
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
End of Report



Umesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No.	NA	Test Report No.	ELO51122EC006/A
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Chaplah	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

i-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Benzene as C516	µg/m ³	BDL (DL-5.0)							

- Remarks : Test methods & standards are attached along with the reports
- Other Information : This test report is the part of Test Report No. ELO51122EC006.
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar
Authorized Signatory-Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO ₂)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO ₂)	80	IS:5182 (Part-6)
5.	Ammonia (NH ₃)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O ₃)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No: -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No: -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C ₆ H ₆)	05	IS: 5182 (Part-11)



TEST REPORT



ULR No.	NA	Test Report No.	ELO51122ECO10
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 OT:10.09.2022
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (if any)	NA
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Bahdal	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	05/11/2022 to 30/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Particulate Matter(PM10)	µg/m ³	40	42	40	39	45	38	44	46
2	Particulate Matter(PM2.5)	µg/m ³	21	22	20	19	25	19	24	26
3	Sulphur Dioxide (SO ₂)	µg/m ³	7	6	6	7	7	5	7	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	20	19	21	17	19	20	19	21
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	3.1	BDL (DL-2)	3.3
7	Carbon Monoxide (CO)	mg/m ³	0.51	0.49	0.52	0.45	0.39	0.47	0.49	0.53
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	E1051122EC010
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
****End of Report****

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Authorized Signatory-Chemical



TEST REPORT

ULR No.	NA	Test Report No.	EL051122EC010/A
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadaxiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/S061 DT:10.09.2022
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (if any)	NA
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Bahdal	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	05/11/2022 to 30/11/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

- Remarks : Test methods & standards are attached along with the reports
 Other Information : This test report is the part of Test Report No.EL051122EC010.
 Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
 Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

Umesh Kumar
 Authorized Signatory-Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	ELOS1122EC009
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dodasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 07:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Kandol	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Particulate Matter(PM10)	µg/m ³	45	47	46	44	50	43	49	46
2	Particulate Matter(PM2.5)	µg/m ³	23	24	22	21	28	21	27	24
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	6	7	6	7	5	7	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	20	19	21	17	20	21	19	21
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	3.3 (DL-2)	BDL (DL-2)	3.0 (DL-2)
7	Carbon Monoxide (CO)	mg/m ³	0.53	0.51	0.54	0.47	0.40	0.49	0.51	0.55
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

Umesh Kumar
Authorized Signatory-Chemical



ULR No.	NA	Test Report No.	EL051122EC009
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
End of Report



Umesh Kumar
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TEST REPORT

ULR No.	NA	Test Report No.	EL051122EC009/A
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Kandol	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Benzene as C ₆ H ₆	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports

Other Information

: This test report is the part of Test Report No. EL051122EC009.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar
Authorized Signatory Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



ULR No.	NA	Test Report No.	E1051122ECO12
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Thor Nichli	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather, Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Particulate Matter (PM10)	µg/m ³	35	38	37	36	41	40	43	45
2	Particulate Matter (PM2.5)	µg/m ³	18	19	17	18	21	21	23	26
3	Sulphur Dioxide (SO ₂)	µg/m ³	9	8	9	7	9	7	8	10
4	Nitrogen Oxides (as NO ₂)	µg/m ³	19	17	18	16	20	18	19	17
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	BDL (DL-2)	3.5	BDL (DL-2)	4.0
7	Carbon Monoxide (CO)	mg/m ³	0.45	0.47	0.51	0.49	0.46	0.43	0.46	0.42
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene (BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

Umesh Kumar
Authorized Signatory Chemical



ULR No.	NA	Test Report No.	E1051122EC012
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Remarks : Test methods & standards are attached along with the reports

Other Information :

Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar
Authorized Signatory-Chemical



TEST REPORT

ULR No.	NA	Test Report No.	EL051122ECO12/A
Type of Sample	Ambient Air	Date of Reporting	30/11/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WD/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	03/11/2022, 04/11/2022, 10/11/2022 & 11/11/2022, 17/11/2022, 18/11/2022, 24/11/2022 & 25/11/2022	Date of Receipt of Sample	05/11/2022, 14/11/2022, 19/11/2022 & 26/11/2022
Sampling Location	Village Thor Nichli	Period of Analysis	05/11/2022 to 30/11/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	03.11.22-Clear sky 04.11.22-Partially cloudy weather 10.11.22-Partially Cloudy Weather; Drizzling for approx. 1-2 hours 11.11.22- Clear sky 17-25.11.22- Clear sky
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	03/11/22	04/11/22	10/11/22	11/11/22	17/11/22	18/11/22	24/11/22	25/11/22
1	Benzene as C ₆ H ₆	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports.

Other Information

: This test report is the part of Test Report No. EL051122ECO12.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


Umesh Kumar
Authorized Signatory Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)





TEST REPORT



ULR No.	NA	Test Report No.	E1031221ECC10
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Project Site	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Particulate Matter(PM10)	µg/m ³	44	46	45	43	45	41	44	48
2	Particulate Matter(PM2.5)	µg/m ³	24	26	25	22	25	20	24	27
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	6	7	6	7	5	7	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	19	18	20	17	19	20	18	20
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.50	0.48	0.51	0.45	0.38	0.46	0.47	0.52
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

Unmesh Kumar
Authorized Signatory-Chemical



ULR No.	NA	Test Report No.	EL031222EC010
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Remarks : Test methods & standards are attached along with the reports

Other Information :

Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


Lijesh Kumar
Authorized Signatory Chemical

TEST REPORT

ULR No.	NA	Test Report No.	EL031222ECO10/A
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiha, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Project Site	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports

Other Information

: This test report is the part of Test Report No.EL031222ECO10.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Animesh Kumar
Authorized Signatory Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	E1031222EC009
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Dadasiba	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fog during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Particulate Matter (PM10)	µg/m ³	45	47	45	44	48	43	45	47
2	Particulate Matter (PM2.5)	µg/m ³	24	26	25	24	28	22	26	27
3	Sulphur Dioxide (SO ₂)	µg/m ³	7	6	7	5	7	5	7	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	18	17	19	16	18	19	18	19
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.40	0.42	0.38	0.41	0.33	0.40	0.41	0.37
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene (BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	EL031222EC009
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
****End of Report****


Unesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No.	NA	Test Report No.	EL031222ECO09/A
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPI/WO/S061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQM5/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Dadasiba	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQM5/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	benzene as C6H6	µg/m3	BDL (DL-5.0)							

- Remarks : Test methods & standards are attached along with the reports
- Other Information : This test report is the part of Test Report No.EL031222ECO09.
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar
Authorized Signatory-Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO ₂)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO ₂)	80	IS:5182 (Part-6)
5.	Ammonia (NH ₃)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O ₃)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C ₆ H ₆)	05	IS: 5182 (Part-11)





TEST REPORT



ULR No.	NA	Test Report No.	EL031222ECD06
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/S061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Sharn Nagar	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Particulate Matter(PM10)	µg/m ³	44	45	43	42	48	41	44	47
2	Particulate Matter(PM2.5)	µg/m ³	24	26	23	22	27	21	24	26
3	Sulphur Dioxide (SO ₂)	µg/m ³	7	6	7	6	7	5	7	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	18	17	19	15	18	18	17	19
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.41	0.43	0.46	0.42	0.33	0.41	0.42	0.38
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	ELO31222EC006
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

- Remarks : Test methods & standards are attached along with the reports
- Other Information : :
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
End of Report


Umesh Kumar
Authorized Signatory-Chemical



Eco Paryavaran Laboratories & Consultants Pvt. Ltd.

(Formerly known as Eco Laboratories & Consultants Pvt. Ltd.)

TEST REPORT

ULR No.	NA	Test Report No.	EL031222EC006/A
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiaba, Distt. Kangra, H. P.	Work Order No. & Date	EPI/WO/5061 OT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAACS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Sham Nagar	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAACS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Benzene as CSHG	µg/m ³	BDL (DL-5.0)							

- Remarks : Test methods & standards are attached along with the reports
- Other Information : This test report is the part of Test Report No.EL031222EC006.
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar
Authorized Signatory-Chemical

Page 1 of 1

Formet No.: E/T B.2-4A-05-28.12.2022

ECO BHAWAN

E-207, Industrial Area, Phase VIII-B (Sector-74), Mohali (Punjab) 160071

0172-4616225 | 9781303109 | contact@ecoparyavaran.org | md@ecoparyavaran.org | www.ecoparyavaran.org

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. .03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. .03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)





TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	EL031222ECD11
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasilba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Behar	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Particulate Matter(PM10)	µg/m ³	33	40	38	36	40	38	44	42
2	Particulate Matter(PM2.5)	µg/m ³	17	21	18	18	20	18	24	22
3	Sulphur Dioxide (SO ₂)	µg/m ³	7	8	7	8	7	6	8	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	17	15	18	14	19	21	18	20
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.41	0.44	0.48	0.46	0.42	0.40	0.43	0.37
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



TC-7477

ULR No.	NA	Test Report No.	EL031222EC011
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

- Remarks : Test methods & standards are attached along with the reports
- Other Information :
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
- **End of Report**


Umesh Kumar
Authorized Signatory-Chemical



TEST REPORT

ULR No.	NA	Test Report No.	EL031222ECO11/A
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Behar	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fog during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports

Other Information

: This test report is the part of Test Report No.EL031222ECO11.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


Umesh Kumar
Authorized Signatory Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



ULR No.	NA	Test Report No.	EI.031222EC005
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Chaplah	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Particulate Matter(PM10)	µg/m ³	43	45	47	42	45	41	44	46
2	Particulate Matter(PM2.5)	µg/m ³	22	23	24	21	25	21	23	26
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	7	8	6	8	6	8	9
4	Nitrogen Oxides (as NO ₂)	µg/m ³	18	17	19	15	17	18	17	18
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.41	0.43	0.39	0.42	0.33	0.41	0.42	0.38
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	EL031222ECD05
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
****End of Report****


Omesh Kumar
Authorized Signatory-Chemical



TEST REPORT

ULR No.	NA	Test Report No.	EL031222ECO05/A
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WG/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Chaplah	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Benzene as C ₆ H ₆	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports.

Other Information

: This test report is the part of Test Report No.EL031222ECO05.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



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S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)



TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	ELG31222ECO07
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 07:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Bahdal	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02-12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Particulate Matter(PM10)	µg/m ³	43	45	43	42	48	41	47	50
2	Particulate Matter(PM2.5)	µg/m ³	22	23	22	21	27	20	26	28
3	Sulphur Dioxide (SO ₂)	µg/m ³	7	6	7	7	7	5	7	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	23	20	22	21	18	21	15	19
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.49	0.48	0.50	0.44	0.37	0.45	0.47	0.51
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

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ULR No.	NA	Test Report No.	E1031221EC007
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
****End of Report****


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Authorized Signatory-Chemical

TEST REPORT

ULR No.	NA	Test Report No.	EL031222EC007/A
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feeli Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiya, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 01:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Bahdal	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

I. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Benzene as C6H6	µg/m3	BDL (DL-5.0)							

- Remarks : Test methods & standards are attached along with the reports
- Other Information : This test report is the part of Test Report No.EL031222EC007.
- Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



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S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)





TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	EL031222EC008
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiya, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQM5/36/2012-13) / CPCBNAAQ5-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 03/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Kandol	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS-5182 and CPCB Air Manual Volume-I (NAAQM5/36/2012-13) / CPCBNAAQ5-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Particulate Matter(PM10)	µg/m ³	43	45	43	42	48	41	47	45
2	Particulate Matter(PM2.5)	µg/m ³	22	24	21	20	27	21	26	23
3	Sulphur Dioxide (SO ₂)	µg/m ³	7	6	7	6	7	5	7	8
4	Nitrogen Oxides (as NO ₂)	µg/m ³	20	18	21	17	19	20	19	21
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.50	0.48	0.51	0.45	0.38	0.46	0.47	0.52
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							



ULR No.	NA	Test Report No.	EL031222EC008
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Remarks : Test methods & standards are attached along with the reports
Other Information :
Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)
****End of Report****


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TEST REPORT

ULR No.	NA	Test Report No.	EL031222EC008/A
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiya, Distt. Kangra, H. P.	Work Order No. & Date	EPI/WO/S051 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Kandol	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fog during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Benzene as C6H6	µg/m ³	BDL (DL-5.0)							

Remarks

Test methods & standards are attached along with the reports.

Other Information

: This test report is the part of Test Report No.EL031222EC008.

Abbreviations

: ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable

Terms & Conditions

: Please refer terms and conditions on backside of Test Report (Page:1)

****End of Report****



Omish Kumar
Authorized Signatory-Chemical

S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO),	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)





TEST REPORT



TC-7477

ULR No.	NA	Test Report No.	E1031222EC012
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Customer reference No. (if any)	NA
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Mode of Collection of Sample	Sampling by laboratory
Sampling Location	Village Thor Nichli	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQMS/36/2012-13) / CPCBNAAQS-2009	Period of Analysis	03/12/2022 to 28/12/2022
Testing Location	On Site & Permanent Facility	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky : fogg during late night & early morning

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Particulate Matter(PM10)	µg/m ³	37	41	39	38	44	43	45	48
2	Particulate Matter(PM2.5)	µg/m ³	17	22	20	19	23	22	25	27
3	Sulphur Dioxide (SO ₂)	µg/m ³	8	7	8	6	8	9	7	9
4	Nitrogen Oxides (as NO ₂)	µg/m ³	18	16	19	15	20	17	18	16
5	Ammonia (NH ₃)	µg/m ³	BDL (DL-6)							
6	Ozone (O ₃)	µg/m ³	BDL (DL-2)							
7	Carbon Monoxide (CO)	mg/m ³	0.43	0.46	0.50	0.48	0.44	0.41	0.45	0.41
8	Lead (Pb)	µg/m ³	BDL (DL-0.04)							
9	Arsenic as As	ng/m ³	BDL (DL-1.0)							
10	Nickel as Ni	ng/m ³	BDL (DL-10.0)							
11	Benzo Pyrene(BaP), Particulate Phase	ng/m ³	BDL (DL-1.0)							

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ULR No.	NA	Test Report No.	E1.031222EC012
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

- Remarks** : Test methods & standards are attached along with the reports
- Other Information** :
- Abbreviations** : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
- Terms & Conditions** : Please refer terms and conditions on backside of Test Report (Page-1)
- **End of Report****


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S. No.	Test Parameter	Standards (NAAQS 2009)	Test Method
1.	Particulate Matter (PM10)	100	IS:5182 (Part-23)
2.	Particulate Matter (PM2.5)	60	Lab SOP EL/SOP/AAQ/01, Issue No.03, Jan 01
3.	Sulphur Dioxide (SO2)	80	IS:5182 (Part-2)
4.	Oxides of Nitrogen (NO2)	80	IS:5182 (Part-6)
5.	Ammonia (NH3)	400	Lab SOP EL/SOP/AAQ/02, Issue No.-03, Jan 01
6.	Ozone (O3)	180	IS:5182 (Part-9)
7.	Carbon Monoxide (CO)	04	IS 5182 (Part-10), NDIR Method
8.	Lead (Pb)	1.0	IS:5182 (Part-22)
9.	Arsenic (as As)	06	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
10.	Nickel (as Ni)	20	Lab SOP: EL/SOP/AAQ/04, Issue No. -03, Jan 01
11.	Benzo-a-pyrene (BaP), Particulate Phase Only	01	IS:5182 (Part-12)
12.	Benzene (as C6H6)	05	IS: 5182 (Part-11)





TEST REPORT

ULR No.	NA	Test Report No.	E1031222ECO12/A
Type of Sample	Ambient Air	Date of Reporting	28/12/2022

Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangara, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQM5/36/2012-13) / CPCBNAAQS-2009	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	01/12/2022, 02/12/2022, 08/12/2022, 09/12/2022, 15/12/2022, 16/12/2022, 22/12/2022 & 23/12/2022	Date of Receipt of Sample	03/12/2022, 12/12/2022, 17/12/2022 & 24/12/2022
Sampling Location	Village Thor Nichli	Period of Analysis	03/12/2022 to 28/12/2022
Testing Protocol	IS:5182 and CPCB Air Manual Volume-I (NAAQM5/36/2012-13) / CPCBNAAQS-2009	Environmental Conditions	01.12.22-Clear sky 02.12.22-Partially cloudy weather 08-09.12.22- Clear sky 15.12.22-Clear sky 16-23.12.22- Clear Sky fogg during late night & early morning
Testing Location	On Site & Permanent Facility		

TEST RESULTS

I-Chemical Testing

1. Atmospheric Pollution (Ambient Air)

S. No	Test Parameters	Units	01/12/22	02/12/22	08/12/22	09/12/22	15/12/22	16/12/22	22/12/22	23/12/22
1	Benzene as C6H6	µg/m3	BDL (DL-5.0)							

- Remarks : Test methods & standards are attached along with the reports
 Other Information : This test report is the part of Test Report No. E1031222ECO12.
 Abbreviations : ULR: Unique Lab Report, BDL: Below Detection Limit, NA: Not Applicable
 Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


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TEST REPORT



TC-7477

ULR No. : TC747722000008125F		Test Report No. : EL101022EC027	
Type of Sample : Ambient Noise		Date of Reporting : 11/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 OT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS 9989-1989, RA 2008,	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Refer below [^]	Period of Analysis	10/10/2022 To 10/10/2022
Testing Protocol	IS 9989-1989, RA 2008,		
Testing Location	On Site & Permanent Facility		

RESULTS

I- Chemical Testing

1. Atmospheric Pollution (Ambient Noise Level)

S.No.	Location [^]	Unit	Result	Test Method
1	Corner No.1 (Day Time)	dB(A)	48.5	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
2	Corner No.1 (Night Time)	dB(A)	37.5	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
3	Corner No.2 (Day Time)	dB(A)	47.2	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
4	Corner No.2 (Night Time)	dB(A)	36.9	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
5	Corner No.3 (Day Time)	dB(A)	47.1	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
6	Corner No.3 (Night Time)	dB(A)	36.6	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
7	Corner No.4 (Day Time)	dB(A)	46.8	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
8	Corner No.4 (Night Time)	dB(A)	35.8	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
9	Centre (Day Time)	dB(A)	45.1	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
10	Centre (Night Time)	dB(A)	37.8	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10



Umesh Kumar
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ULR No. : TC747722000008125f

Test Report No. : EL101022EC027

Type of Sample : Ambient Noise

Date of Reporting : 11/10/2022

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

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

Day time shall mean from 6.00 a.m. to 10.00 p.m., Night time shall mean from 10.00 p.m. to 6.00 a.m., Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.
*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale 'A' which is relatable to human hearing

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

Umesh Kumar
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TEST REPORT



TC-7477

ULR No. : TC747722000008126f		Test Report No. : EL101022EC028	
Type of Sample : Ambient Noise		Date of Reporting : 11/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS 9989-1989, RA 2008,	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Refer below ^a	Period of Analysis	10/10/2022 To 10/10/2022
Testing Protocol	IS 9989-1989, RA 2008,		
Testing Location	On Site & Permanent Facility		

RESULTS

I- Chemical Testing

1. Atmospheric Pollution (Ambient Noise Level)

S.No.	Location ^a	Unit	Result	Test Method
1	Govt.Sen.Sec.School Vill. Chanour (Day Time)	dB(A)	43.2	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
2	Govt.Sen.Sec.School Vill. Chanour (Night Time)	dB(A)	38.1	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
3	Radha Swami Satsang Vill. Chanour (Day Time)	dB(A)	44.8	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
4	Radha Swami Satsang Vill. Chanour (Night Time)	dB(A)	37.1	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
5	Shiv Mandir Ram Nagar (Day Time)	dB(A)	43.7	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10
6	Shiv Mandir Ram Nagar (Night Time)	dB(A)	37.3	LAB SOP: EL/SOP/AN/01, Issue No.-04, Nov 10



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ULR No. : TC747722000008126

Test Report No. : EL101022ECD28

Type of Sample : Ambient Noise

Date of Reporting : 11/10/2022

Ambient Noise Quality Standards as per Noise Pollution (Regulation and Control) Rules, 2000

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

Day time shall mean from 6.00 a.m. to 10.00 p.m., Night time shall mean from 10.00 p.m. to 6.00 a.m., Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale 'A' which is referable to human hearing

Remarks : NA

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


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TEST REPORT



TC-7477

ULR No. : TC747722000008154F		Test Report No. : EL101022EC011	
Type of Sample : Soil		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadariba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Project Site*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/03'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	pH	—	7.64	IS-2720 (Part-26) Cl-2,
2	Conductivity	mmhos/cm	0.342	IS-14767
3	Moisture Content	%	8.6	IS-2720 (Part-II) Sec-1
4	Organic Matter	%	1.32	IS: 2720 (Part XXII) Sec-3,
5	Texture	—	Sandy Loam	IS:2720 (Part-4) Cl 2,4,
6	Bulk Density	gm/cc	1.37	IS: 2720 (Part-7)
7	Extractable / Available Sodium as Na	mg/kg	143	Lab SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10
8	Extractable/ Available Potassium as K	mg/kg	59	SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10

Remarks : *N 31° 54' 05", E 76° 07' 33"

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



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TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC011/A	
Type of Sample : Soil		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chandour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	USEPA/600/R-92/12B	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Project Site*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked '5/08/03'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	Water Holding Capacity	%	25	Lab SOP:EL/SOP/SS/35
2	Porosity	%	39	Lab SOP:EL/SOP/SS/36
3	Sand	%	71	IS: 2720 (Part-4) 1985
4	Silt	%	17	IS: 2720 (Part-4) 1985
5	Permeability	cm/hr	1.41	Lab SOP:EL/SOP/SS/37
6	Cation Exchange Capacity	meq/100gm	0.68	Lab SOP:EL/SOP/SS/30
7	Sodium Absorption Ratio	meq/L	1.24	Lab SOP:EL/SOP/SS/31

Remarks :

*N 31° 54' 05", E 76° 07' 33"

This test report is the part of Test Report No.EL101022EC001.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

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****End of Report****



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TEST REPORT



TC-7477

ULR No. : TC747722000008155F		Test Report No. : EL101022EC012	
Type of Sample : Soil.		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/800/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Dadasiba*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/08'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	pH	-	7.49	IS:2720 (Part-26) Cl-2,
2	Conductivity	mmhos/cm	0.272	IS:14767
3	Moisture Content	%	7.5	IS:2720 (Part-II) Sec-1
4	Organic Matter	%	1.42	IS: 2720 (Part XXII) Sec-1,
5	Texture	-	Sandy Loam	IS:2720 (Part-4) Cl 2,4,
6	Bulk Density	gm/cc	1.39	IS: 2720 (Part-7)
7	Extractable / Available Sodium as Na	mg/kg	169	Lab SOP No. EL/SOP/SS/10, Issued No.-03 Nov/10
8	Extractable/ Available Potassium as K	mg/kg	61	SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10

Remarks : *N 31° 55' 48", E 76° 05' 24"

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

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****End of Report****



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TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC012/A	
Type of Sample : Soil.		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feef Organic Products Plot No.-3, Industrial Area, Chandour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061.DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Dadasiba*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Poly Bag Marked "S/08/08"		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	Water Holding Capacity	%	21	Lab SOP:EL/SOP/SS/35
2	Porosity	%	38	Lab SOP:EL/SOP/SS/36
3	Sand	%	69	IS: 2720 (Part-4) 1985
4	Silt	%	10	IS: 2720 (Part-4) 1985
5	Permeability	cm/yr	1.36	Lab SOP:EL/SOP/SS/37
6	Cation Exchange Capacity	meq/100gm	0.67	Lab SOP:EL/SOP/SS/30
7	Sodium Absorption Ratio	meq/L	1.25	Lab SOP:EL/SOP/SS/31

Remarks :

*N 31° 55' 48", E 76° 05' 24"

This test report is the part of Test Report No.EL101022EC012.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

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****End of Report****



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TEST REPORT



ULR No. : TC747722000008160F		Test Report No. : EL101022EC017	
Type of Sample : Soil		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT-10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Sham Nagar Near Mandir*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Poly Bag Marked 'S/08/09'		

RESULTS

1. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	pH	-	7.58	IS:2720 (Part-26) Cl-2.
2	Conductivity	mmhos/cm	0.324	IS:14767
3	Moisture Content	%	9.4	IS:2720 (Part-II) Sec-1
4	Organic Matter	%	1.35	IS: 2720 (Part XXII) Sec-1.
5	Texture	-	Sandy Loam	IS:2720 (Part-4) Cl 2,4.
6	Bulk Density	gm/cc	1.34	IS: 2720 (Part-7)
7	Extractable / Available Sodium as Na	mg/kg	163	Lab SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10
8	Extractable/ Available Potassium as K	mg/kg	76	SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10.

Remarks : *N 31° 54' 57", E 76° 06' 55"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

ULR No. : NA		Test Report No. : EL101022ECO17/A	
Type of Sample : Soil.		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chandour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/S061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Sham Nagar Near Mandir*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/09'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	Water Holding Capacity	%	27	Lab SOP:EL/SOP/SS/35
2	Porosity	%	39	Lab SOP:EL/SOP/SS/36
3	Sand	%	70	IS: 2720 (Part-4) 1985
4	Silt	%	17	IS: 2720 (Part-4) 1985
5	Permeability	cm/hr	1.37	Lab SOP:EL/SOP/SS/37
6	Cation Exchange Capacity	meq/100gmi	0.74	Lab SOP:EL/SOP/SS/30
7	Sodium Absorption Ratio	meq/L	1.52	Lab SOP:EL/SOP/SS/31

Remarks : *N 31° 54' 57", E 76° 06' 55"

This test report is the part of Test Report No.EL101022ECO17.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



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TEST REPORT



TC-7477

ULR No. : TC747722000008161F		Test Report No. : EL101022ECD18	
Type of Sample : Soil		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/S Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiiba, Distt, Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Behar*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/05'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	pH	--	7.79	IS:2720 (Part-26) Cl-2,
2	Conductivity	mmhos/cm	0.302	IS:14767
3	Moisture Content	%	8.4	IS:2720 (Part-II) Sec-1
4	Organic Matter	%	1.39	IS: 2720 (Part XXXI) Sec-1,
5	Texture	--	Sandy Loam	IS:2720 (Part-4) Cl 2.4,
6	Bulk Density	gm/cc	1.33	IS: 2720 (Part-7)
7	Extractable / Available Sodium as Na	mg/kg	195	Lab SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10
8	Extractable/ Available Potassium as K	mg/kg	60	SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10

Remarks : *N 31° 54' 09", E 76° 08' 29"

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

Umesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		Test Report No. : EL101022ECO18/A	
Type of Sample : Soil.		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Behar*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/05'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	Water Holding Capacity	%	27	Lab SOP:EL/SOP/SS/35
2	Porosity	%	41	Lab SOP:EL/SOP/SS/36
3	Sand	%	66	IS: 2720 (Part-4) 1985
4	Silt	%	19	IS: 2720 (Part-4) 1985
5	Permeability	cm/hr	1.39	Lab SOP:EL/SOP/SS/37
6	Cation Exchange Capacity	meq/100gm	0.71	Lab SOP:EL/SOP/SS/30
7	Sodium Absorption Ratio	meq/L	1.51	Lab SOP:EL/SOP/SS/31

Remarks : *N 31° 54' 09", E 76° 08' 29"

This test report is the part of Test Report No.EL101022ECO18.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



Authorized Signatory-Chemical

TEST REPORT



TC-7477

ULR No. : TC747722000008156F		Test Report No. : EL101022EC013	
Type of Sample : Soil.		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feef Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadajiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Chaplah*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Poly Bag Marked 'S/08/04'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	pH	—	7.62	IS:2720 (Part-26) Cl-2.
2	Conductivity	mmhos/cm	0.288	IS:14767
3	Moisture Content	%	7.5	IS:2720 (Part-II) Sec-1
4	Organic Matter	%	1.15	IS: 2720 (Part XXII) Sec-1.
5	Texture	—	Sandy Loam	IS:2720 (Part-4) Cl 2.4.
6	Bulk Density	gm/cc	1.40	IS: 2720 (Part-7)
7	Extractable / Available Sodium as Na	mg/kg	146	Lab SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10
8	Extractable/ Available Potassium as K	mg/kg	69	SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10

Remarks : *N 31° 53' 44", E 76° 06' 45"

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Umesh Kumar

Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC013/A	
Type of Sample : Soil.		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiha, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Chaplah*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Poly Bag Marked 'S/08/04'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	Water Holding Capacity	%	24	Lab SOP:EL/SOP/55/35
2	Porosity	%	42	Lab SOP:EL/SOP/55/36
3	Sand	%	66	IS: 2720 (Part-4) 1985
4	Silt	%	18	IS: 2720 (Part-4) 1985
5	Permeability	cm/hr	1.37	Lab SOP:EL/SOP/55/37
6	Cation Exchange Capacity	meq/100gm	0.74	Lab SOP:EL/SOP/55/30
7	Sodium Absorption Ratio	meq/L	1.29	Lab SOP:EL/SOP/55/31

Remarks : *N 31° 53' 44", E 76° 06' 45"

This test report is the part of Test Report No:EL101022EC013.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



Umesh Kumar
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TEST REPORT



TC-7477

ULR No. : TC747722000008157F		Test Report No. : EL101022EC014	
Type of Sample : Soil		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/12B	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Badhal*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/07'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	pH	-	7.63	IS:2720 (Part-26) Cl-2.
2	Conductivity	mmhos/cm	0.327	IS:14767
3	Moisture Content	%	7.4	IS:2720 (Part-II) Sec-1
4	Organic Matter	%	1.34	IS: 2720 (Part XXII) Sec-1.
5	Texture	-	Sandy Loam	IS:2720 (Part-4) Cl 2.4.
6	Bulk Density	gm/cc	1.47	IS: 2720 (Part-7)
7	Extractable / Available Sodium as Na	mg/kg	176	Lab SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10
8	Extractable/ Available Potassium as K	mg/kg	81	SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10

Remarks : *N 31° 52' 43", E 76° 08' 22"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable
Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report


 Umesh Kumar
 Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		Test Report No. : EL101022ECO14/A	
Type of Sample : Soil.		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dasasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 07:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	I/SEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Badhal*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/07'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	Water Holding Capacity	%	24	Lab SOP:EL/SOP/55/35
2	Porosity	%	39	Lab SOP:EL/SOP/55/36
3	Sand	%	65	IS: 2720 (Part-4) 1985
4	Silt	%	18	IS: 2720 (Part-4) 1985
5	Permeability	cm/hr	1.37	Lab SOP:EL/SOP/55/37
6	Cation Exchange Capacity	meq/100gm	0.70	Lab SOP:EL/SOP/55/30
7	Sodium Absorption Ratio	meq/L	1.39	Lab SOP:EL/SOP/55/31

Remarks : *N 31° 52' 43", E 76° 08' 22"

This test report is the part of Test Report No.EL101022ECO14.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



Umesh Kumar
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TEST REPORT



TC-7477

ULR No. : TC747722000008158F		Test Report No. : EL101022EC015	
Type of Sample : Soil		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Channur, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPI/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/12B	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Primary School Village Kandol*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/10'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	pH	--	7.82	IS:2720 (Part-26) Cl-2.
2	Conductivity	mmhos/cm	0.293	IS:14767
3	Moisture Content	%	8.4	IS:2720 (Part-II) Sec-1
4	Organic Matter	%	1.40	IS: 2720 (Part XXII) Sec-1.
5	Texture	--	Sandy Loam	IS:2720 (Part-4) Cl 2,4.
6	Bulk Density	gm/cc	1.45	IS: 2720 (Part-7)
7	Extractable / Available Sodium as Na	mg/kg	165	Lab SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10
8	Extractable/ Available Potassium as K	mg/kg	64	SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10

Remarks : *N 31° 53' 11", E 76° 08' 24"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Umesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC015/A	
Type of Sample : Soil		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Primary School Village Kandol*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/10'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	Water Holding Capacity	%	24	Lab SOP:EL/SOP/SS/35
2	Porosity	%	43	Lab SOP:EL/SOP/SS/36
3	Sand	%	68	IS: 2720 (Part-4) 1985
4	Silt	%	15	IS: 2720 (Part-4) 1985
5	Permeability	cm/hr	1.35	Lab SOP:EL/SOP/SS/37
6	Cation Exchange Capacity	meq/100gm	0.54	Lab SOP:EL/SOP/SS/30
7	Sodium Absorption Ratio	meq/L	1.28	Lab SOP:EL/SOP/SS/31

Remarks : *N 31° 53' 11", E 76° 08' 24"

This test report is the part of Test Report No.EL101022EC015.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



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TEST REPORT



TC-7477

ULR No. : TC747722000008159F		Test Report No. : EL101022EC016	
Type of Sample : Soil.		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/3061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Thor Nichli (Agriculture Land)*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/06'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	pH	--	7.83	IS:2720 (Part-26) Cl-2,
2	Conductivity	mmhos/cm	0.341	IS:14767
3	Moisture Content	%	8.7	IS:2720 (Part-II) Sec-1
4	Organic Matter	%	1.47	IS: 2720 (Part XXII) Sec-1,
5	Texture	--	Sandy Loam	IS:2720 (Part-4) Cl 2.4,
6	Bulk Density	gm/cc	1.42	IS: 2720 (Part-7)
7	Extractable / Available Sodium as Na	mg/kg	179	Lab SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10
8	Extractable/ Available Potassium as K	mg/kg	69	SOP No. EL/SOP/SS/10, Issued No.-03 Nov 10

Remarks : *N 31° 52' 34", E 76° 09' 07"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


 Umesh Kumar
 Authorized Signatory-Chemical



TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC016/A	
Type of Sample : Soil		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadāsiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	USEPA/600/R-92/128	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Thor Nichli (Agriculture Land)*	Testing Location	Permanent Facility
Testing Protocol	IS Method & Lab SOP	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Brown coloured soil.		
Packing, Markings, Seal & Qty.	5 Kg Polly Bag Marked 'S/08/06'		

RESULTS

I. Chemical Testing

1. Pollution & Environment (Soil)

S.No.	Test Parameter	Unit	Result	Test Method
1	Water Holding Capacity	%	27	Lab SOP:EL/SOP/SS/35
2	Porosity	%	44	Lab SOP:EL/SOP/SS/36
3	Sand	%	69	IS: 2720 (Part-4) 1985
4	Silt	%	17	IS: 2720 (Part-4) 1985
5	Permeability	cm/hr	1.40	Lab SOP:EL/SOP/SS/37
6	Cation Exchange Capacity	meq/100gm	0.83	Lab SOP:EL/SOP/SS/30
7	Sodium Absorption Ratio	meq/L	1.38	Lab SOP:EL/SOP/SS/31

Remarks : *N 31° 52' 34", E 76° 09' 07"

This test report is the part of Test Report No.EL101022EC016.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report


Umesh Kumar
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TEST REPORT



ULR No. : TC74772200008146F		Test Report No. : EL101022ECO01	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPI/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	From Mandir Near Project Site*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/03'		

RESULTS

I.-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour	Colour Units	BOL(DLS)	5	15	IS: 3025 (Part-4)Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS:3025 (Part-5)
3	pH @ 25°C	-	7.21	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Turbidity	NTU	BOL(DL1)	1	5	IS 3025 (Part-10)
5	Total Dissolved Solids	mg/l	145	500	2000	IS :3025 (Part-16)
6	Calcium as Ca	mg/l	35	75	200	IS:3025 (Part-40)
7	Chloride as Cl	mg/l	6.0	250	1000	IS: 3025 (Part-32)
8	Fluoride as F	mg/l	0.38	1.0	1.5	IS: 3025 (Part-60)
9	Iron as Fe	mg/l	0.13	1.0	No relaxation	APHA-23rd Ed -3500Fe-8 Phenanthroline Method
10	Magnesium as Mg	mg/l	5.3	30	100	IS :3025 (Part-46)
11	Nitrate as NO3	mg/l	3.4	45	No relaxation	IS :3025 (Part-34) -Cl 3.3,Chromotropic Acid Method
12	Sulphate as SO4	mg/l	12	200	400	IS :3025 (Part-24) Cl 4.0
13	Total alkalinity as CaCO3	mg/l	116	200	600	IS :3025 (Part-23)
14	Total hardness as CaCO3	mg/l	110	200	600	IS :3025 (Part-21)
15	Zinc as Zn.	mg/l	BOL(DL0.1)	5	15	APHA-23rd Ed- 3111B A-Ac Flame AAS Method

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TC-7477

ULR No. : TC747722000008146F	Test Report No. : EL101022EC001
Type of Sample : Water (Ground Water)	Date of Reporting : 15/10/2022
15 Total Suspended Solids mg/l 6.1 - -	IS :3025 (Part-17)

II - Biological Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent	Absent	-	IS:15185
2	E.coli.	CFU/100ml	Absent	Absent	-	IS:15185

Remarks : *N 31° 53' 30", E 76° 07' 09"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

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TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC001/A	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/S061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	From Mandir Near Project Site*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/03'		

RESULTS

I-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Copper as Cu.	mg/l	BDL(DLO.02)	0.05	1.5	APHA-23rd Ed-3111B A-Ac Flame AAS Method
2	Cadmium as Cd.	mg/l	BDL(DLO.001)	0.003	No relaxation	APHA-23rd Ed-3111B A-Ac Flame AAS Method
3	Cyanide as CN	mg/l	BDL(DLO.01)	0.05	No relaxation	IS:3025 (Part-27)
4	Lead as Pb.	mg/l	BDL(DLO.01)	0.01	No relaxation	APHA-23rd Ed-3111B A-Ac Flame AAS Method
5	Total chromium as Cr	mg/l	BDL(DLO.05)	0.05	No relaxation	IS:3025 (Part-52) Cl 7.0

Remarks :

*N 31° 53' 30", E 76° 07' 09"

This test report is the part of Test Report No.EL101022EC001.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



Dr. Ajay Kumar

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TEST REPORT



TC-7477

ULR No. : TC74772200008151F		Test Report No. : EL101022ECO06	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt, Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	09/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	From Hand Pump Village Dadasiba*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (11nd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/08'		

RESULTS

I-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour	Colour Units	BDL(DLS)	5	15	IS: 3025 (Part-4)Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS:3025 (Part-5)
3	pH @ 25°C	-	7.22	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Turbidity	NTU	BDL(DLI)	1	5	IS 3025 (Part-10)
5	Total Dissolved Solids	mg/l	218	500	2000	IS :3025 (Part-16)
6	Calcium as Ca	mg/l	51	75	200	IS:3025 (Part-40)
7	Chloride as Cl	mg/l	11	250	1000	IS: 3025 (Part-32)
8	Fluoride as F	mg/l	0.41	1.0	1.5	IS: 3025 (Part-60)
9	Iron as Fe	mg/l	0.17	1.0	No relaxation	APHA-23rd Ed -3500Fe-8 Phenanthroline Method
10	Magnesium as Mg	mg/l	10	30	100	IS :3025 (Part-46)
11	Nitrate as NO3	mg/l	4.6	45	No relaxation	IS :3025 (Part-34) -Cl 3.3, Chromotropic Acid Method
12	Sulphate as SO4	mg/l	24	200	400	IS :3025 (Part-24) Cl 4.0
13	Total alkalinity as CaCO3	mg/l	164	200	600	IS :3025 (Part-23)
14	Total hardness as CaCO3	mg/l	168	200	600	IS :3025 (Part-21)
15	Zinc as Zn.	mg/l	BDL(DLO.1)	5	15	APHA-23rd Ed- 3111B A-Ac Flame AAS Method

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological



TC-7477

ULR No. : TC747722000008151F	Test Report No. : EL101022EC006
Type of Sample : Water (Ground Water)	Date of Reporting : 15/10/2022
16 Total Suspended Solids mg/l	6.6 - - IS:3025 (Part-17)

II - Biological Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent	Absent	-	IS:15185
2	E.coli	CFU/100ml	Absent	Absent	-	IS:15185

Remarks : *N 31° 55' 53", E 76° 05' 31"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Ajay Kumar
Authorized Signatory-Chemical & Biological

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC006/A	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanoor, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date-	EPL/WO/S061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	From Hand Pump Village Dadasiba*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass bottle Marked 'S/08/08'		

RESULTS

I-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Copper as Cu.	mg/l	BDL(DLO.02)	0.05	1.5	APHA-23rd Ed -3111B A-Ac Flame AAS Method
2	Cadmium as Cd.	mg/l	BDL(DLO.001)	0.003	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
3	Cyanide as CN	mg/l	BDL(DLO.01)	0.05	No relaxation	IS:3025 (Part-27)
4	Lead as Pb,	mg/l	BDL(DLO.01)	0.01	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
5	Total chromium as Cr	mg/l	BDL(DLO.05)	0.05	No relaxation	IS-3025 (Part-52) Cl 7.0

Remarks :

*N 31° 55' 53", E 76° 05' 31"

This test report is the part of Test Report No.EL101022EC006.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



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TEST REPORT



TC-7477

ULR No. : TC74772200008152F		Test Report No. : EL101022EC007	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feal Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (If any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Sham Nagar Near Mandir*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (11nd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/09'		

RESULTS

I-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour	Colour Units	BDL(DLS)	5	15	IS: 3025 (Part-4)Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS:3025 (Part-5)
3	pH @ 25°C	-	7.45	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Turbidity	NTU	BDL(DLS)	1	5	IS:3025 (Part-10)
5	Total Dissolved Solids	mg/l	149	500	2000	IS :3025 (Part-16)
6	Calcium as Ca	mg/l	32	75	200	IS:3025 (Part-40)
7	Chloride as Cl	mg/l	5.0	250	1000	IS: 3025 (Part-32)
8	Fluoride as F	mg/l	0.34	1.0	1.5	IS: 3025 (Part-60)
9	Iron as Fe	mg/l	0.16	1.0	No relaxation	APHA-23rd Ed -3500Fe-B Phenanthroline Method
10	Magnesium as Mg	mg/l	8.7	30	100	IS :3025 (Part-46)
11	Nitrate as NO ₃	mg/l	4.1	45	No relaxation	IS :3025 (Part-34) -Cl 3.3, Chromotropic Acid Method
12	Sulphate as SO ₄	mg/l	13	200	400	IS :3025 (Part-24) Cl 4.0
13	Total alkalinity as CaCO ₃	mg/l	120	200	600	IS :3025 (Part-23)
14	Total hardness as CaCO ₃	mg/l	116	200	600	IS :3025 (Part-21)
15	Zinc as Zn	mg/l	BDL(DLS)	5	15	APHA-23rd Ed- 3111B A-Ac Flame AAS Method

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological



TC-7477

ULR No. : TC/47722000008152F		Test Report No. : EL101022EC007	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
16	Total Suspended Solids	mg/l	5.7
			-
			-
IS :3025 (Part-17)			

II - Biological Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent	Absent	-	IS:15185
2	E.coli.	CFU/100ml	Absent	Absent	-	IS:15185

Remarks : *N 31° 54' 57", E 76° 06' 54"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



Dr. Ajay Kumar
Authorized Signatory-Chemical & Biological

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC007/A	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Sham Nagar Near Mandir*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/09'		

RESULTS

I-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Copper as Cu.	mg/l	BDL(DLO.02)	0.05	1.5	APHA-23rd Ed -3111B A-Ac Flame AAS Method
2	Cadmium as Cd.	mg/l	BDL(DLO.001)	0.003	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
3	Cyanide as CN.	mg/l	BDL(DLO.01)	0.05	No relaxation	IS:3025 (Part-27)
4	Lead as Pb.	mg/l	BDL(DLO.01)	0.01	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
5	Total chromium as Cr.	mg/l	BDL(DLO.05)	0.05	No relaxation	IS :3025 (Part-52) Cl 7.0

Remarks :

*N 31° 54' 57", E 76° 06' 54"

This test report is the part of Test Report No.EL101022EC007.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological



TC-7477

TEST REPORT

ULR No. : TC747722000008148F		Test Report No. : EL101022EC003	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Behar House of Chandan*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (Ind Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/05'		

RESULTS

I - Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour	Colour Units	BDL(DLS)	5	15	IS- 3025 (Part-4)Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS:3025 (Part-5)
3	pH @ 25°C	-	7.25	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Turbidity	NTU	BDL(DL1)	1	5	IS:3025 (Part-10)
5	Total Dissolved Solids	mg/l	130	500	2000	IS :3025 (Part-16)
6	Calcium as Ca	mg/l	27	75	200	IS:3025 (Part-40)
7	Chloride as Cl	mg/l	5.0	250	1000	IS: 3025 (Part-32)
8	Fluoride as F	mg/l	0.30	1.0	1.5	IS: 3025 (Part-60)
9	Iron as Fe	mg/l	0.14	1.0	No relaxation	APHA-23rd Ed -3500Fe-B Phenanthroline Method
10	Magnesium as Mg	mg/l	7.3	30	100	IS :3025 (Part-46)
11	Nitrate as NO3	mg/l	3.2	45	No relaxation	IS :3025 (Part-34) -Cl 3.3,Chromotropic Acid Method
12	Sulphate as SO4	mg/l	14	200	400	IS :3025 (Part-24) Cl 4.0
13	Total alkalinity as CaCO3	mg/l	88	200	600	IS :3025 (Part-23)
14	Total hardness as CaCO3	mg/l	98	200	600	IS :3025 (Part-21)
15	Zinc as Zn.	mg/l	BDL(DL0.1)	5	15	APHA-23rd Ed- 3111B A-Ac Flame AAS Method

Dr. Anshu Kumar

Authorized Signatory-Chemical & Biological



TC-7477

ULR No. :	TC747722000008148F	Test Report No. :	EL101022EC003			
Type of Sample :	Water (Ground Water)	Date of Reporting :	15/10/2022			
16	Total Suspended Solids	mg/l	6.9	-	-	IS :3025 (Part-17)

II - Biological Testing**1. Water (Ground Water)**

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent	Absent	-	IS:15185
2	E.coli.	CFU/100ml	Absent	Absent	-	IS:15185

Remarks : *N 31° 54' 11", E 76° 08' 27"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC003/A	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPI/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Behar House of Chandan*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/05'		

RESULTS

I-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Copper as Cu.	mg/l	BDL(DLO.02)	0.05	1.5	APHA-23rd Ed -3111B A-Ac Flame AAS Method
2	Cadmium as Cd.	mg/l	BDL(DLO.001)	0.003	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
3	Cyanide as CN	mg/l	BDL(DLO.01)	0.05	No relaxation	IS:3025 (Part-27)
4	Lead as Pb.	mg/l	BDL(DLO.01)	0.01	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
5	Total chromium as Cr	mg/l	BDL(DLO.05)	0.05	No relaxation	IS :3025 (Part-52) Cl 7.0

Remarks :

*N 31° 54' 11", E 76° 08' 27"

This test report is the part of Test Report No.EL101022EC003.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological

TEST REPORT



TC-7477

ULR No. : TC74772200008147F		Test Report No. : EL101022EC002	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiha, Distt. Jangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Chaplah House of Krishan Kumar*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (Ind Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/04'		

RESULTS

I - Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour	Colour Units	BDL(DLS)	5	15	IS: 3025 (Part-4)Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS:3025 (Part-5)
3	pH @ 25°C	-	7.11	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Turbidity	NTU	BDL(DL1)	1	5	IS 3025 (Part-10)
5	Total Dissolved Solids	mg/l	154	500	2000	IS :3025 (Part-16)
6	Calcium as Ca	mg/l	37	75	200	IS:3025 (Part-40)
7	Chloride as Cl	mg/l	6.9	250	1000	IS: 3025 (Part-32)
8	Fluoride as F	mg/l	0.33	1.0	1.5	IS: 3025 (Part-60)
9	Iron as Fe	mg/l	0.13	1.0	No relaxation	APHA-23rd Ed -3500Fe-B Phenanthroline Method
10	Magnesium as Mg	mg/l	7.3	30	100	IS :3025 (Part-46)
11	Nitrate as NO ₃	mg/l	3.8	45	No relaxation	IS :3025 (Part-34) -Cl 3.3, Chromotropic Acid Method
12	Sulphate as SO ₄	mg/l	13	200	400	IS :3025 (Part-24) Cl 4.0
13	Total alkalinity as CaCO ₃	mg/l	125	200	600	IS :3025 (Part-23)
14	Total hardness as CaCO ₃	mg/l	122	200	600	IS :3025 (Part-21)
15	Zinc as Zn	mg/l	BDL(DLO.1)	5	15	APHA-23rd Ed- 3111B A-Ac Flame AAS Method

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological



ULR No. : TC747722000008147F		Test Report No. : EL101022EC002				
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022				
15	Total Suspended Solids	mg/l	6.4	-	-	IS :3025 (Part-17)

II - Biological Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent	Absent	-	IS-15185
2	E.coli	CFU/100ml	Absent	Absent	-	IS-15185

Remarks : *N 31° 53' 44", E 76° 06' 45°

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

Dr. Ajay Kumar
Authorized Signatory-Chemical & Biological

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC002/A	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanpur, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Chaplah House of Krishan Kumar*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/04'		

RESULTS

I -Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Copper as Cu.	mg/l	BDL(DLO.02)	0.05	1.5	APHA-23rd Ed -3111B A-Ac Flame AAS Method
2	Cadmium as Cd.	mg/l	BDL(DLO.001)	0.003	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
3	Cyanide as CN	mg/l	BDL(DLO.01)	0.05	No relaxation	IS:3025 (Part-27)
4	Lead as Pb.	mg/l	BDL(DLO.01)	0.01	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
5	Total chromium as Cr.	mg/l	BDL(DLO.05)	0.05	No relaxation	IS :3025 (Part-52) Cl 7.0

Remarks : *N 31° 53' 44", E 76° 06' 45"

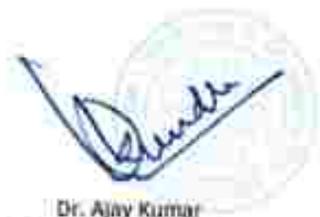
This test report is the part of Test Report No.EL101022EC002.

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological

TEST REPORT



TC-7477

ULN No. : TC74772200008150F		Test Report No. : EL101022EC005	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Badhal*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (1ind Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/07'		

RESULTS

1-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour	Colour Units	BDL(DLS)	5	15	IS: 3025 (Part-4)Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS:3025 (Part-5)
3	pH @ 25°C	-	7.45	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Turbidity	NTU	BDL(DL1)	1	5	IS 3025 (Part-10)
5	Total Dissolved Solids	mg/l	153	500	2000	IS :3025 (Part-16)
6	Calcium as Ca	mg/l	33	75	200	IS:3025 (Part-40)
7	Chloride as Cl	mg/l	6.0	250	1000	IS: 3025 (Part-32)
8	Fluoride as F	mg/l	0.32	1.0	1.5	IS: 3025 (Part-60)
9	Iron as Fe	mg/l	0.15	1.0	No relaxation	APHA-23rd Ed -3500Fe-B Phenanthroline Method
10	Magnesium as Mg	mg/l	5.8	30	100	IS :3025 (Part-46)
11	Nitrate as NO ₃	mg/l	3.6	45	No relaxation	IS :3025 (Part-34) -Cl 3.3, Chromotropic Acid Method
12	Sulphate as SO ₄	mg/l	19	200	400	IS :3025 (Part-24) Cl 4.0
13	Total alkalinity as CaCO ₃	mg/l	116	200	600	IS :3025 (Part-23)
14	Total hardness as CaCO ₃	mg/l	106	200	600	IS :3025 (Part-21)
15	Zinc as Zn.	mg/l	BDL(DL0.1)	5	15	APHA-23rd Ed- 3111B A-Ac Flame AAS Method

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological



ULR No. : TC747722000008150F	Test Report No. : EL101022EC005
Type of Sample : Water (Ground Water)	Date of Reporting : 15/10/2022
16 Total Suspended Solids mg/l 6.5 - -	IS-3025 (Part-17)

II - Biological Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent	Absent	-	IS:15185
2	E.coli.	CFU/100ml	Absent	Absent	-	IS:15185

Remarks : *N 31° 52' 29", E 76° 08' 00"

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC005/A	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Badhal*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked "S/08/07"		

RESULTS

I -Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Copper as Cu.	mg/l	BDL(DLO.02)	0.05	1.5	APHA-23rd Ed -3111B A-Ac Flame AAS Method
2	Cadmium as Cd.	mg/l	BDL(DLO.001)	0.003	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
3	Cyanide as CN	mg/l	BDL(DLO.01)	0.05	No relaxation	IS:3025 (Part-27)
4	Lead as Pb.	mg/l	BDL(DLO.01)	0.01	No relaxation	APHA-23rd Ed- 3111B A-Ac Flame AAS Method
5	Total chromium as Cr	mg/l	BDL(DLO.05)	0.05	No relaxation	IS :3025 (Part-52) Cl 7.0

Remarks : *N 31° 52' 29", E 76° 08' 00"

This test report is the part of Test Report No.EL101022EC005.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological



Eco Paryavaran Laboratories & Consultants Pvt. Ltd.

(Formerly known as Eco Laboratories & Consultants Pvt. Ltd.)



TEST REPORT

ULR No. : TC747722000008153F		Test Report No. : EL101022EC008	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WD/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17514 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Primary School Village Kandel*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (Hind Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/10'		

RESULTS

I - Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour	Colour Units	BDL(DLS)	5	15	IS: 3025 (Part-4) Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS:3025 (Part-5)
3	pH @ 25°C	-	7.53	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Turbidity	NTU	BDL(DL1)	1	5	IS 3025 (Part-10)
5	Total Dissolved Solids	mg/l	145	500	2000	IS :3025 (Part-16)
6	Calcium as Ca	mg/l	30	75	200	IS:3025 (Part-40)
7	Chloride as Cl	mg/l	6.0	250	1000	IS: 3025 (Part-32)
8	Fluoride as F	mg/l	0.35	1.0	1.5	IS: 3025 (Part-60)
9	Iron as Fe	mg/l	0.15	1.0	No relaxation	APHA-23rd Ed. -3500Fe-B Phenanthroline Method
10	Magnesium as Mg	mg/l	7.8	30	100	IS :3025 (Part-46)
11	Nitrate as NO3	mg/l	3.8	45	No relaxation	IS :3025 (Part-34) -Cl 3-3, Chromotropic Acid Method
12	Sulphate as SO4	mg/l	17	200	400	IS :3025 (Part-24) Cl 4.0
13	Total alkalinity as CaCO3	mg/l	122	200	600	IS :3025 (Part-23)
14	Total hardness as CaCO3	mg/l	108	200	600	IS :3025 (Part-21)
15	Zinc as Zn	mg/l	BDL(DL0.1)	5	15	APHA-23rd Ed. -3111B A-Ac Flame AAS Method

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological



TEST REPORT

ULR No. :	NA	Test Report No. :	EL101022EC008/A
Type of Sample :	Water (Ground Water)	Date of Reporting :	15/10/2022
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Primary School Village Kandol*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (1st Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/10'		

RESULTS

I-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Copper as Cu.	mg/l	BDL(DL0.02)	0.05	1.5	APHA-23rd Ed-3111B A-Ac Flame AAS Method
2	Cadmium as Cd.	mg/l	BDL(DL0.001)	0.003	No relaxation	APHA-23rd Ed-3111B A-Ac Flame AAS Method
3	Cyanide as CN	mg/l	BDL(DL0.01)	0.05	No relaxation	IS:3025 (Part-27)
4	Lead as Pb.	mg/l	BDL(DL0.01)	0.01	No relaxation	APHA-23rd Ed-3111B A-Ac Flame AAS Method
5	Total chromium as Cr	mg/l	BDL(DL0.05)	0.05	No relaxation	IS:3025 (Part-52) Cl 7.0

Remarks :

*N 31° 53' 11", E 76° 08' 24"

This test report is the part of Test Report No.EL101022EC008.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological



ULR No. : TC747722000068153F		Test Report No. : EL101022EC008	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
10	Total Suspended Solids	mg/l	6.7
			-
			-
IS:3025 (Part-17)			

II - Biological Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent	Absent	-	IS-15185
2	E.coli.	CFU/100ml	Absent	Absent	-	IS-15185

Remarks : *N 31° 53' 11", E 76° 08' 24"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological

TEST REPORT



TC-7477

ULR No. : TC747722000008149F		Test Report No. : EL101072EC004	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Thor Nichli House of Ram Avtar*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (IInd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/06'		

RESULTS

I-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Colour	Colour Units	NDL(DLS)	5	15	IS: 3025 (Part-4)Cl 2.0
2	Odour	-	Agreeable	Agreeable	Agreeable	IS:3025 (Part-5)
3	pH @ 25°C	-	7.07	6.5-8.5	No relaxation	IS:3025 (Part-11)
4	Turbidity	NTU	NDL(DL1)	1	5	IS 3025 (Part-10)
5	Total Dissolved Solids	mg/l	153	500	2000	IS :3025 (Part-16)
6	Calcium as Ca	mg/l	34	75	200	IS:3025 (Part-40)
7	Chloride as Cl	mg/l	7.9	250	1000	IS: 3025 (Part-32)
8	Fluoride as F	mg/l	0.34	1.0	1.5	IS: 3025 (Part-60)
9	Iron as Fe	mg/l	0.13	1.0	No relaxation	APHA-23rd Ed -3500Fe-B Phenanthroline Method
10	Magnesium as Mg	mg/l	13	30	100	IS :3025 (Part-46)
11	Nitrate as NO ₃	mg/l	4.2	45	No relaxation	IS :3025 (Part-34) -C 3.3, Chromotropic Acid Method
12	Sulphate as SO ₄	mg/l	17	200	400	IS :3025 (Part-24) Cl 4.0
13	Total alkalinity as CaCO ₃	mg/l	110	200	600	IS :3025 (Part-23)
14	Total hardness as CaCO ₃	mg/l	138	200	600	IS :3025 (Part-21)
15	Zinc as Zn.	mg/l	NDL(DL1)	5	15	APHA-23rd Ed- 3111B A-Ac Flame AAS Method

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological



TC-7477

ULR No. : TC747722000008149F		Test Report No. : EL101022EC004	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
16	Total Suspended Solids	mg/l	5.8
			-
			-
			IS:3025 (Part-17)

II - Biological Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Total coliform	CFU/100ml	Absent	Absent	-	IS:15185
2	E.coli.	CFU/100ml	Absent	Absent	-	IS:15185

Remarks : *N 31° 52' 34", E 76° 09' 07"

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report

Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC004/A	
Type of Sample : Water (Ground Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPI/WG/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Village Thor Nichli House of Ram Avtar*	Testing Location	Permanent Facility
Testing Protocol	IS:10500-2012 (11nd Revision)	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic & 250ml Glass Bottle Marked 'S/08/06'		

RESULTS

I-Chemical Testing

1. Water (Ground Water)

S.No.	Test Parameter	Unit	Result	Acceptable limit	Permissible limit in absence of alternate source	Test Method
1	Copper as Cu.	mg/l	BDL(DLO.02)	0.05	1.5	APHA-23rd Ed -31118 A-Ac Flame AAS Method
2	Cadmium as Cd.	mg/l	BDL(DLO.001)	0.003	No relaxation	APHA-23rd Ed- 31118 A-Ac Flame AAS Method
3	Cyanide as CN	mg/l	BDL(DLO.01)	0.05	No relaxation	IS:3025 (Part-27)
4	Lead as Pb.	mg/l	BDL(DLO.01)	0.01	No relaxation	APHA-23rd Ed- 31118 A-Ac Flame AAS Method
5	Total chromium as Cr	mg/l	BDL(DLO.05)	0.05	No relaxation	IS:3025 (Part-52) Cl 7.0

Remarks :

*N 31° 52' 34", E 76° 09' 07"

This test report is the part of Test Report No.EL101022EC004.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****



Dr. Ajay Kumar

Authorized Signatory-Chemical & Biological

TEST REPORT



ULR No. : TC747722000008144F		Test Report No. : EL101022EC009	
Type of Sample : Water (Surface Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Beas River (Up Stream)*	Testing Location	Permanent Facility
Testing Protocol	IS & APHA	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked 'S/08/01'		

RESULTS

I-Chemical Testing

1. Water (Surface Water)

S.No.	Test Parameter	Unit	Result	Test Method
1	Colour	Colour Units	BDL(DLS)	IS :3025 (Part-4): CI 2.0
2	Conductivity	µmho/cm	176	IS :3025 (Part-14)
3	Odour	-	Agreeable	IS :3025 (Part-5)
4	pH @ 25°C	-	7.50	IS :3025 (Part-11)
5	Taste	-	Agreeable	IS :3025 (Part-8)
6	Turbidity	NTU	BDL(DL1)	IS :3025 (Part-10)
7	Total Dissolved Solids	mg/l	115	IS :3025 (Part-16)
8	Calcium as Ca	mg/l	20	IS :3025 (Part-40)
9	Chloride as Cl	mg/l	8.7	IS :3025 (Part-32)
10	Fluoride as F	mg/l	0.32	IS :3025 (Part-60)
11	Iron as Fe.	mg/l	0.14	APHA-23rd Ed -3500Fe-B Phenanthroline Method
12	Magnesium as Mg	mg/l	6.3	IS :3025 (Part-46)
13	Nitrate as NO3	mg/l	2.1	IS :3025 (Part-34) CI 3-3Chromotropic Acid Method
14	Sulphate as SO4	mg/l	8.6	IS :3025 (Part-24) CI 4.0Turbidity Method
15	Total alkalinity as CaCO3	mg/l	68	IS :3025 (Part-23)
16	Total hardness as CaCO3	mg/l	76	IS :3025 (Part-21)
17	Sodium as Na	mg/l	8.1	IS :3025 (Part-45)
18	Phosphorus as P.	mg/l	BDL(DL0.5)	APHA-23rd Ed -4500-D Stannous Chloride Method
19	Biochemical Oxygen Demand (BOD)	mg/l	BDL(DL2)	IS :3025 (Part-44): BOD 3-days at 27°C

Umesh Kumar

Authorized Signatory-Chemical



ULR No. : TC74772200008144F

Test Report No. : EL101022EC009

Type of Sample : Water (Surface Water)

Date of Reporting : 15/10/2022

20	Chemical Oxygen Demand (COD)	mg/l	BDL(BL5)	IS :3025 (Part-58)
21	Oxygen Dissolved (DO)	mg/l	5.6	IS :3025 (Part-38)

Remarks : *N 31° 55' 00", E 76° 08' 39"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


Ujjesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC009/A	
Type of Sample : Water (Surface Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiya, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Beas River (Up Stream)*	Testing Location	Permanent Facility
Testing Protocol	IS & APHA	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked 'S/08/01'		

RESULTS

I-Chemical Testing

1. Water (Surface Water)

S.No.	Test Parameter	Unit	Result	Test Method
1	Potassium	mg/l	2.1	IS:3025(P-45)
2	Total Suspended Solids.	mg/l	6.1	APHA-23rd Ed - 2540 D
3	Bicarbonates.	mg/l	68	APHA-23rd Ed - 2320 B

Remarks : *N 31° 55' 00", E 76° 08' 39"

This test report is the part of Test Report No.EL101022EC009.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



Anesh Kumar
Authorized Signatory-Chemical

TEST REPORT



TC-7477

ULR No. : TC74772200008145F		Test Report No. : EL101022EC010	
Type of Sample : Water (Surface Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiba, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 07-10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Beas River (Down Stream)*	Testing Location	Permanent Facility
Testing Protocol	IS & APHA	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked 'S/08/02'		

RESULTS

I - Chemical Testing

1. Water (Surface Water)

S.No.	Test Parameter	Unit	Result	Test Method
1	Colour	Colour Units	BDL(DL5)	IS:3025 (Part-4): Cl 2.0
2	Conductivity	µmho/cm	182	IS:3025 (Part-14)
3	Odour	-	Agreeable	IS:3025 (Part-5)
4	pH @ 25°C	-	7.62	IS:3025 (Part-11)
5	Taste	-	Agreeable	IS:3025 (Part-8)
6	Turbidity	NTU	BDL(DL1)	IS:3025 (Part-10)
7	Total Dissolved Solids	mg/l	121	IS:3025 (Part-16)
8	Calcium as Ca	mg/l	21	IS:3025 (Part-40)
9	Chloride as Cl	mg/l	9.7	IS:3025 (Part-32)
10	Fluoride as F	mg/l	0.34	IS:3025 (Part-60)
11	Iron as Fe	mg/l	0.16	APHA-23rd Ed -3500Fe-B Phenanthroline Method
12	Magnesium as Mg	mg/l	6.8	IS:3025 (Part-46)
13	Nitrate as NO3	mg/l	2.3	IS:3025 (Part-34) Cl 3.3Chromotropic Acid Method
14	Sulphate as SO4	mg/l	8.6	IS:3025 (Part-24) Cl 4.0Turbidity Method
15	Total alkalinity as CaCO3	mg/l	72	IS:3025 (Part-23)
16	Total hardness as CaCO3	mg/l	80	IS:3025 (Part-21)
17	Sodium as Na	mg/l	8.9	IS:3025 (Part-45)
18	Phosphorus as P	mg/l	BDL(DL0.5)	APHA-23rd Ed -4500-D Stannous Chloride Method
19	Biochemical Oxygen Demand (BOD)	mg/l	BDL(DL2)	IS:3025 (Part-44): BOD 3-days at 27°C

Unish Kumar
Authorized Signatory-Chemical



ULR No. : TC747722000008145F		Test Report No. : EL101022EC010		
Type of Sample : Water (Surface Water)		Date of Reporting : 15/10/2022		
20	Chemical Oxygen Demand (COD)	mg/l	BDL(DLS)	IS :3025 (Part-58)
21	Oxygen Dissolved (DO)	mg/l	5.8	IS :3025 (Part-38)

Remarks : *N 31° 55' 51", E 76° 06' 37"

OTHER INFORMATION

Abbreviation : ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions : Please refer terms and conditions on backside of Test Report (Page-1)

****End of Report****


Umesh Kumar
Authorized Signatory-Chemical

TEST REPORT

ULR No. : NA		Test Report No. : EL101022EC010/A	
Type of Sample : Water (Surface Water)		Date of Reporting : 15/10/2022	
Customer	Proposed Formaldehyde Unit by M/s Feel Organic Products Plot No.-3, Industrial Area, Chanour, Phase-2, Tehsil Dadasiya, Distt. Kangra, H. P.	Work Order No. & Date	EPL/WO/5061 DT:10.09.2022
		Customer reference No. (if any)	NA
Sampling Protocol	IS:17614 (P-1) 2021	Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/10/2022	Date of Receipt of Sample	10/10/2022
Sampling Location	Beas River (Down Stream)*	Testing Location	Permanent Facility
Testing Protocol	IS & APHA	Period of Analysis	10/10/2022 To 15/10/2022
Sample Description	Colourless liquid.		
Packing, Markings, Seal & Qty.	2 litre Plastic Bottle Marked 'S/08/02'		

RESULTS

I - Chemical Testing

1. Water (Surface Water)

S.No.	Test Parameter	Unit	Result	Test Method
1	Potassium	mg/l	2.5	IS:3025(P-45)
2	Total Suspended Solids.	mg/l	3.9	APHA-23rd Ed - 2540 D
3	Bicarbonates	mg/l	72	APHA-23rd Ed - 2320 B

Remarks : *N 31° 55' 51", E 76° 06' 37"

This test report is the part of Test Report No.EL101022EC010.

OTHER INFORMATION

Abbreviation :

ULR: Unique Lab Report, BDL: Below Detection Level, NA: Not Applicable

Terms & Conditions :

Please refer terms and conditions on backside of Test Report (Page-1)

End of Report



Urshesh Kumar
Authorized Signatory-Chemical



3977
24/3/12
DEHRA

No. 12065
H.P. Forest Department

Dated, Dehra the 21/7/2012

From :

Divisional Forest Officer,
Dehra Forest Division, Dehra

To :

General Manager,
Distt. Industrial Centre,
Kangra at Dharamshala

Subject :-

Transfer of Govt. Land measuring 12-38-90 Hect. in Mouza Chanour & Mohal Behar and land measuring 11-45-92 hect. in Mauza & Mohal Chanour Tehsil Dehra Distt. Kangra H.P.

Sir,

Reference your letter No. Ind/Kgr/Land Transfer/Dehra/4950 dated 10.1.2012 on the subject cited above.

2. As per report submitted by the Range Forest Officers, Dada Siba & Forest Kamings of this division, the land comprising Khasra No. 367 measuring 11-45-92 ha. in Mohal & Mauza Chanour Tehsil Dehra Distt. Kangra H.P. and land comprising Khasra No. 165 measuring 12-38-90 ha. Mohal Behar Mauza Chanour Tehsil Dehra Distt. Kangra H.P. do not fall under the category of forest land. The above land was vested into the State of Govt. vide H.P. Village Common Land (Vesting & Utilization) Act, 1974 and was never a part of forest land.

Keeping in view the aforesaid report/facts, No Objection Certificate in forestry point of view is hereby granted in favour of industry Department for Development of industrial area on the proposed land as above. However, the industry department should keep in view the directions of Hon'ble Supreme Court of India in this regard before according the permission for development of industrial area and also ensure that there should be no violation of Forest Conservation Act, 1980 and Indian Forest Act, 1927 by the user agency.

Divisional Forest Officer,
Dehra Forest Division, Dehra

Dated, Dehra the

Enclt. No.

Copy is forwarded to R.O. Dada Siba for information and further necessary action. This is with reference to his letter No. 852/Ds dated 3.2.2012. He should ensure that there should be no violation of F.C.A. 1980 and Indian Forest Act, 1927 by the user agency

Divisional Forest Officer,
Dehra Forest Division, Dehra.

Original sent
to SDM Dehra
on dated 24/7/18
Duo



Himachal Pradesh
Jal Shakti Vibhag

No. EE-JSV-Pragpur-WA-NOC/2022/ - 12549
To

Dated = 12-10-2022

✓ Sh. Sandeep Dhill (Partner)
M/s Feeli Organic Products
VPO Sadaiput, Near Medical College,
Tehsil Nagrota Bhagwan,
Distt. Kangra (HP)-174021

Subject: - NOC regarding establishment of 100 KLD Formaldehyde manufacturing unit at plot No. 3, Industrial Area Chanour Phase-II, Tehsil Dadasiba, Distt. Kangra, Himachal Pradesh.

Reference: - Your office letter No. nil dated 01.10.2022

Keeping in view your request vide letter under reference it is

certified that: -

1. Chanour khad is a seasonal river/khad.
2. The Proposed project site i.e. Industrial Area Chanour in the Tehsil Dadasiba, Distt. Kangra (HP) has not faced a flood like situation in the last 25 years.
3. The project site is not located within the flood plain of river Beas for a return cycle of 1 in 25 years.
4. Proper Flood Protection works have been provided along the banks of Chanour khad for the entire industrial area by HPSIDC/Deptt. of Industrial of HP.
5. No departmental (Jal Shakti Vibhag) structure shall be displaced by the above project.

DA: NIL


Executive Engineer,
Jal Shakti Division Pragpur
Distt. Kangra (HP)

No. 7633
HP Forest Department

Dated Una, the 16-12-22

From: Divisional Forest Officer,
Dehra Forest Division, Dehra

To: M/S Feel Organic Products
VPO Sadarpur, Near Medical Collage
Tehsil Nagrota Bhagwanal
Distt. Kangra (HP)

Subject: NOC regarding establishment of 100 KLD Formaldehyde
manufacturing unit at Plot No. 3 Industrial Area Chanour
Phase-II Tehsil Dadasiba, Distt. Kangra Himachal Pradesh.

Memo,

Please refer to your application dated 25.11.2022 on the
subject cited above

2 Please enclosed find herewith report as received from Range
Forest Dehra for information and necessary action please.

Encl: As above.


Divisional Forest Officer,
Dehra Forest Division, Dehra

पत्र संख्या 6035/88
वन विभाग हिमाचल प्रदेश
दिनांक 12-12-2022

प्रेषक :- वन परिक्षेत्र अधिकारी
डाडासीबा

प्रेषित :- वन मण्डल अधिकारी
देहरा

विषय :- NOC Regarding establishment of 100 KLD Formaldehyde manufacturing Unit at plot no.3 industrial Area chanour phase-II Tehsil-Dadasiba Distt-Kangra H.P.

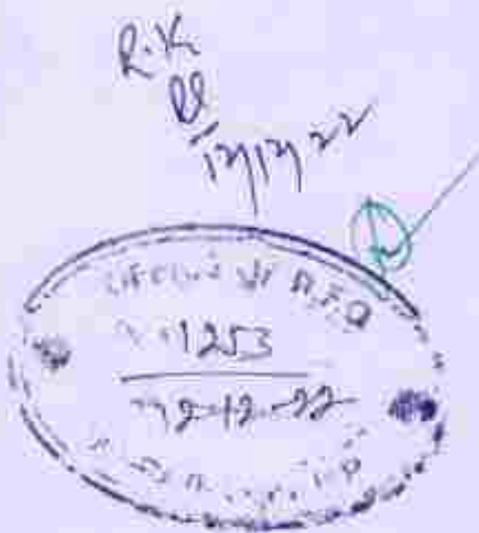
जापन :-

जनाव के कार्यालय पत्र संख्या न० 6964 दिनांक 26-11-2022 के संदर्भ में ।

उपरोक्त विषय के संदर्भ में रिपोर्ट की जाती है कि उपरोक्त औद्योगिक क्षेत्र चनौर का मौका देखा गया और पाया गया प्रार्थी जो उद्योग टीका चनौर के क्षेत्र में 'Feel organic products के नाम से लगाना चाहता है वह क्षेत्र Eco sensitive zone से बाहर है । व उपरोक्त क्षेत्र की दूरी Eco sensitive zone से लगभग 1.68 km है ।

अतः रिपोर्ट सूचनार्थ एवं अग्रिम कार्यवाही हेतु जनाव की सेवा में प्रेषित है ।


Range Forest Officer
Dadasiba, Teh. Dadasiba
Distt. Kangra (H.P.)-177104

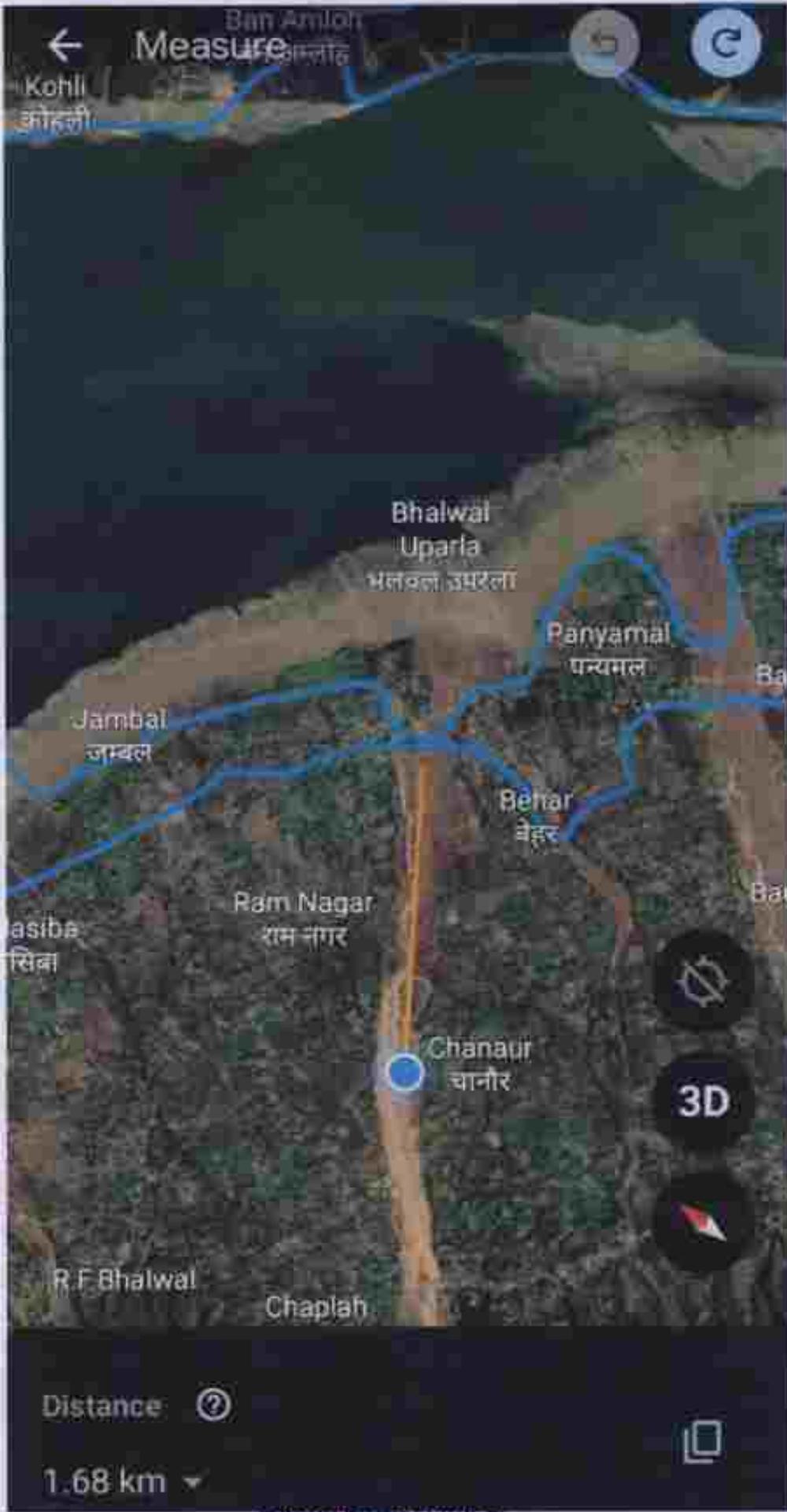


श्रीमान् जी,

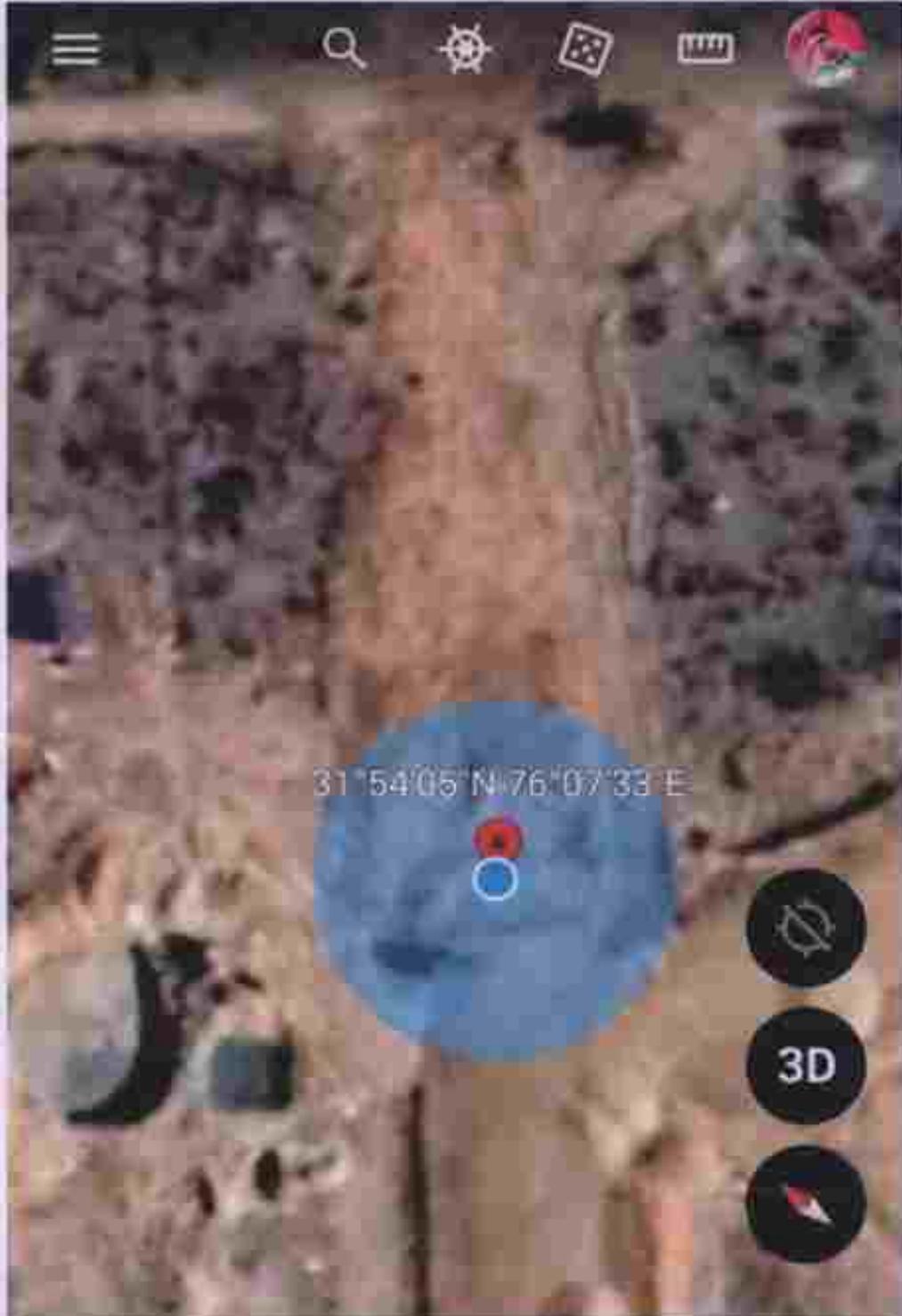
कृ. प्र. अ. देहली के कागज़ीय फ़ोन संख्या 6964 दिनांक 26/1/20
के संदर्भ में रिपोर्ट की जाती है कि आज दिनांक 28/1/2022 को उपरोक्त
औद्योगिक क्षेत्र चण्डी का नज़र देखा गया और पाया कि शर्षी
जो उद्योग टीक चण्डी के औद्योगिक क्षेत्र में "Pest Organic
Products" के नाम से लगाना चाहता है वह क्षेत्र Eco sensitive
zone से बाहर है वु उपरोक्त क्षेत्र की वृत्ति Eco sensitive zone
के लगभग 1.68 km है। सिद्दाजा रिपोर्ट भागशी कामवादी है व
सेवा में उक्ति है।

Hansraj
J. J. S. S. S.

Amma
H. C. S. S.



Kangra Forest Office
Dadasiba, Teh. Dadasiba
Distt. Kangra (H.P.)-177106



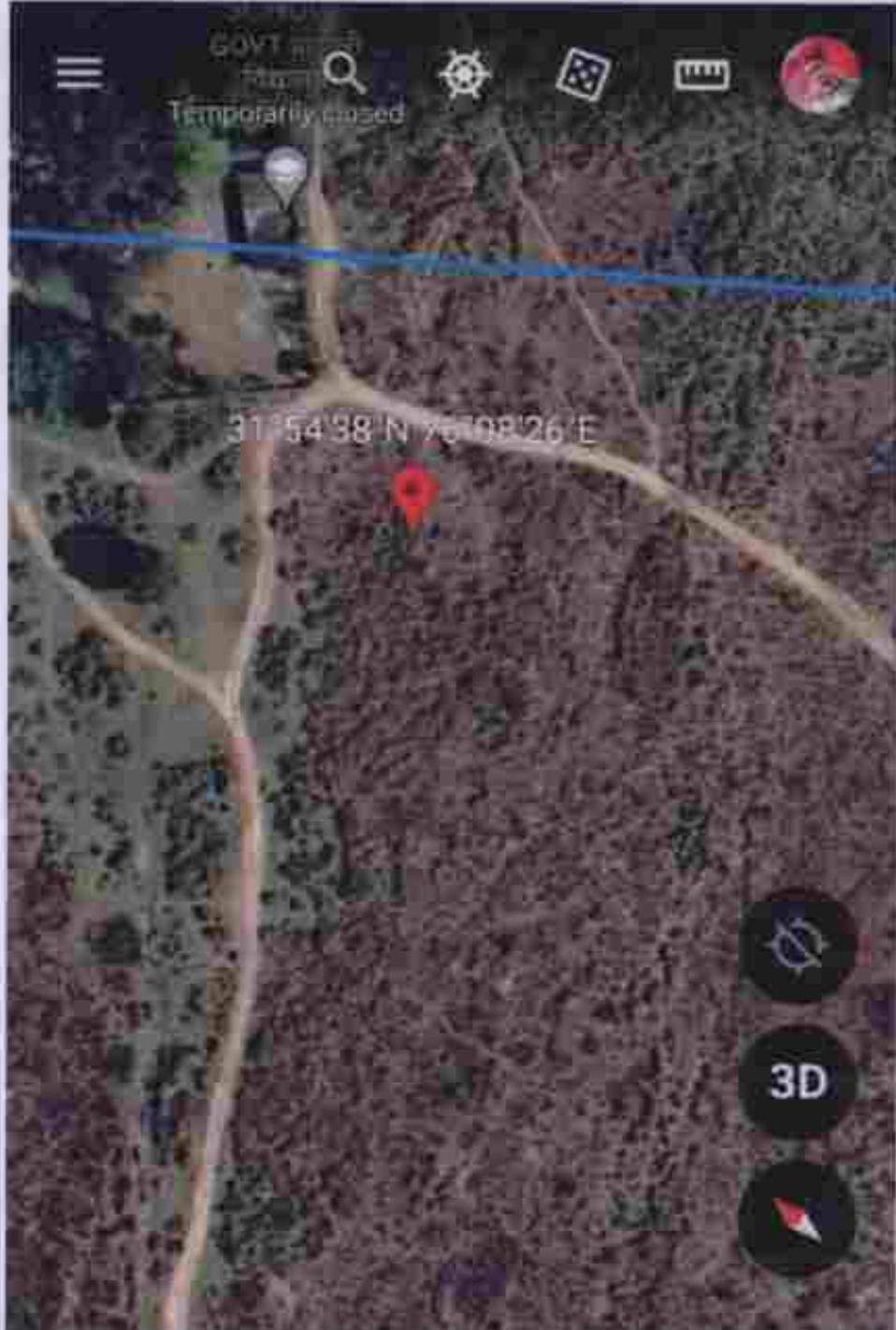
Dropped pin ✕

31°54'05"N 76°07'33"E · 534 m

Imagery date: Not available

 Measure

Forest Office
Dadasiba Teh. Dadasiba
Dist. Kangra (H.P.)-177108



Dropped pin



31°54'38"N 76°08'26"E • 456 m

Imagery date: Not available

 Measure

Range: Grest Omve
Dadasiba Teh. Dadasiba
(Dist. Kanora (H.P.)-17710)

Feel Organic Products

(M) +91 9418080008, +91 9311743737

E-mail.: feelorganicproducts@gmail.com

Date: 26.12.2022

TO WHOM IT MAY CONCERN

This is to state that M/s Feel Organic Products do hereby authorize M/s. Eco Paryavaran Laboratories & Consultants Pvt. Ltd. as Environmental Consultant to present our case and answer all the queries raised by EAC, MoEF&CC in order to get Environment Clearance of the proposed Formaldehyde Manufacturing Unit located at Plot No. 3, Industrial Area Chanour Phase-II, Teh.Dadasiba, Distt. Kangra, Himachal Pradesh by M/s. Feel Organic Products. All commitments made or statement given by him with respect to Environmental Clearance will be acceptable to the authority.

For M/s Feel Organic Products

For FEEL ORGANIC PRODUCTS



Authorized Signatory

Devinder Kumar Dhir
(Partner)



National Accreditation Board for Education and Training



Certificate of Accreditation

Eco Paryavaran Laboratories and Consultants Pvt Ltd

E 207, Phase VIII B, Sector 74, Industrial Area, SAS Nagar, Mohali

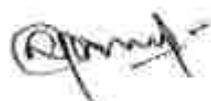
The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3; for preparing EIA-EMP reports in the following Sectors –

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals- opencast only	1	1 (a) (i)	A
2	Metallurgical industries (ferrous only)- both primary & secondary	8	3 (a)	A
3	Cement Plants	9	3(b)	A
4	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
5	Distilleries	22	5 (g)	A
6	Sugar Industry	25	5(j)	B
7	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7(c)	A
8	Common Effluent Treatment Plants	36	7(h)	B
9	Building and construction projects	38	8 (a)	B
10	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated November 04, 2022 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/22/2624 dated Jan 9, 2023. The accreditation needs to be renewed before the expiry date by Eco Paryavaran Laboratories and Consultants Pvt Ltd following due process of assessment.

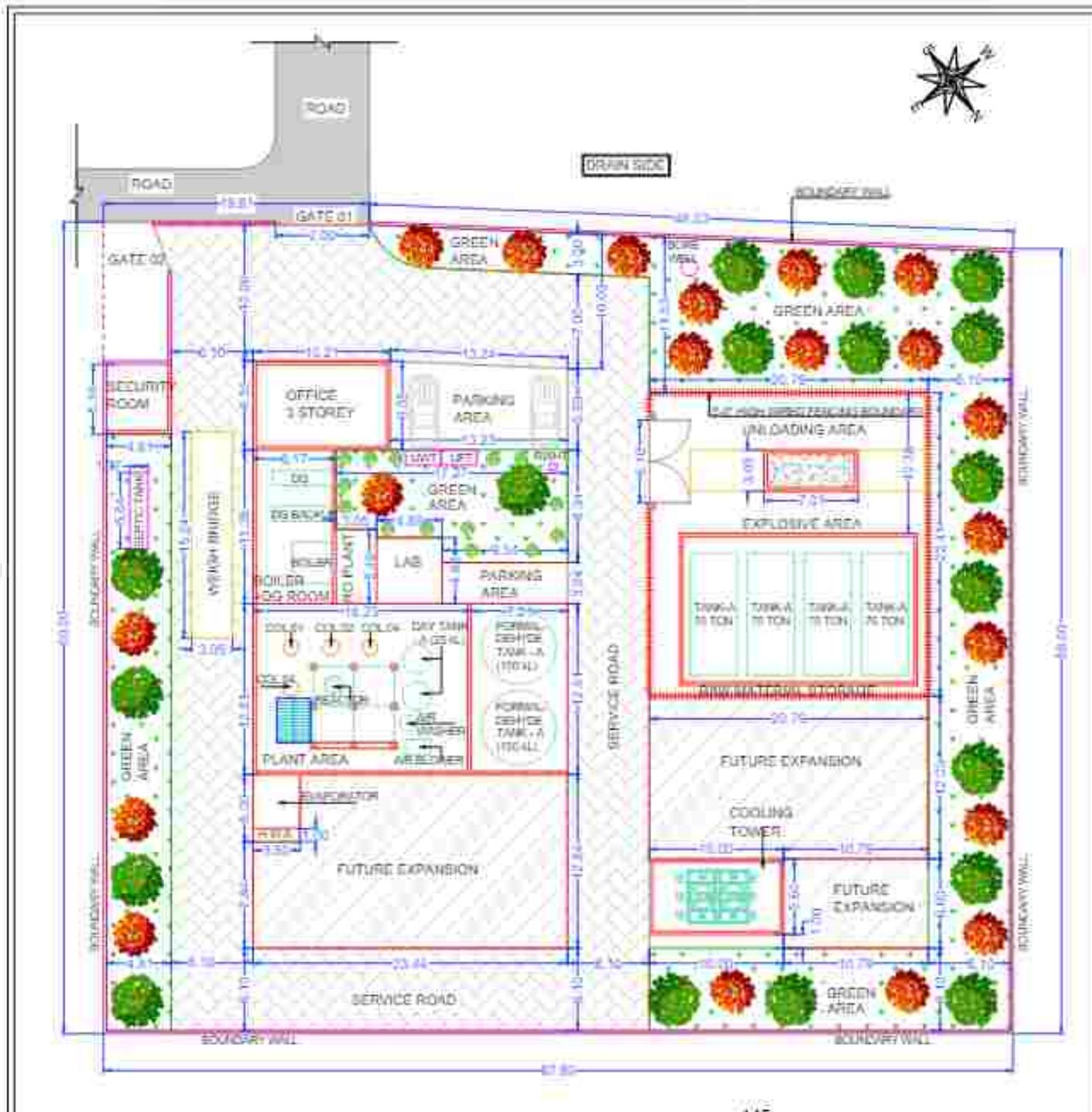
NABET



Sr. Director, NABET
Dated: Jan 9, 2023

Certificate No.
NABET/EIA/2223/SA 0183

Valid up to
Dec 17, 2023



PROPOSED SITE PLAN OF FORMALDEHYDE PLANT FOR M/s FEEL ORGANIC PRODUCTS PLOT NO. - 3, INDUSTRIAL AREA CHANOUR, TEH. DEHRA, DIST. KANGRA (H.P.)

AREA STATEMENT:

Total Plot Area = 67.80 x 160.00 = 10852.80 sqm
= 4,000 sqm

Proposed Plinth Area at G.F. :-

- 1) Security Room = 4.81 X 5.18 = 24.81 sqm
- 2) Office Block = 10.21 X 6.55 = 66.87 sqm
- 3) Stairwell = 12 sqm
- 4) Boiler + DG Room = 6.17 X 11.28 = 70.21 sqm
- 5) RO Plant = 3.05 X 6.48 = 19.74 sqm
- 6) Lab = 4.88 X 4.68 = 22.83 sqm
- 7) Plant Area = 16.23 x 12.61 = 204.66 sqm

TOTAL PLINTH AREA (G.F.) = 418.1 sqm

Proposed Plinth Area at F.F. :-

- 1) Office Block = 10.21 X 6.55 = 66.87 sqm
- 2) Plant Area = 16.23 x 12.61 = 204.66 sqm

TOTAL PLINTH AREA (F.F.) = 271.53 sqm

Proposed Plinth Area at S.F. :-

- 1) Office Block = 10.21 X 6.55 = 66.87 sqm

TOTAL PLINTH AREA (S.F.) = 66.87 sqm

TOTAL PLINTH AREA = 757.5 sqm

FAR (Permissible) = 1.5
FAR (Achieved) = 0.188

Other Plant Area :-

- 8) Explosive Area = 466.90 sqm
- 9) Formaldehyde Tank Area = 7.21 X 12.61 = 90.91 sqm
- 10) Cooling Tower Area = 10.00 X 5.60 = 56.00 sqm
- 11) Evaporator / HWA = 2.50 X 5.00 = 12.50 sqm

TOTAL OTHER PLANT AREA = 600.31 sqm

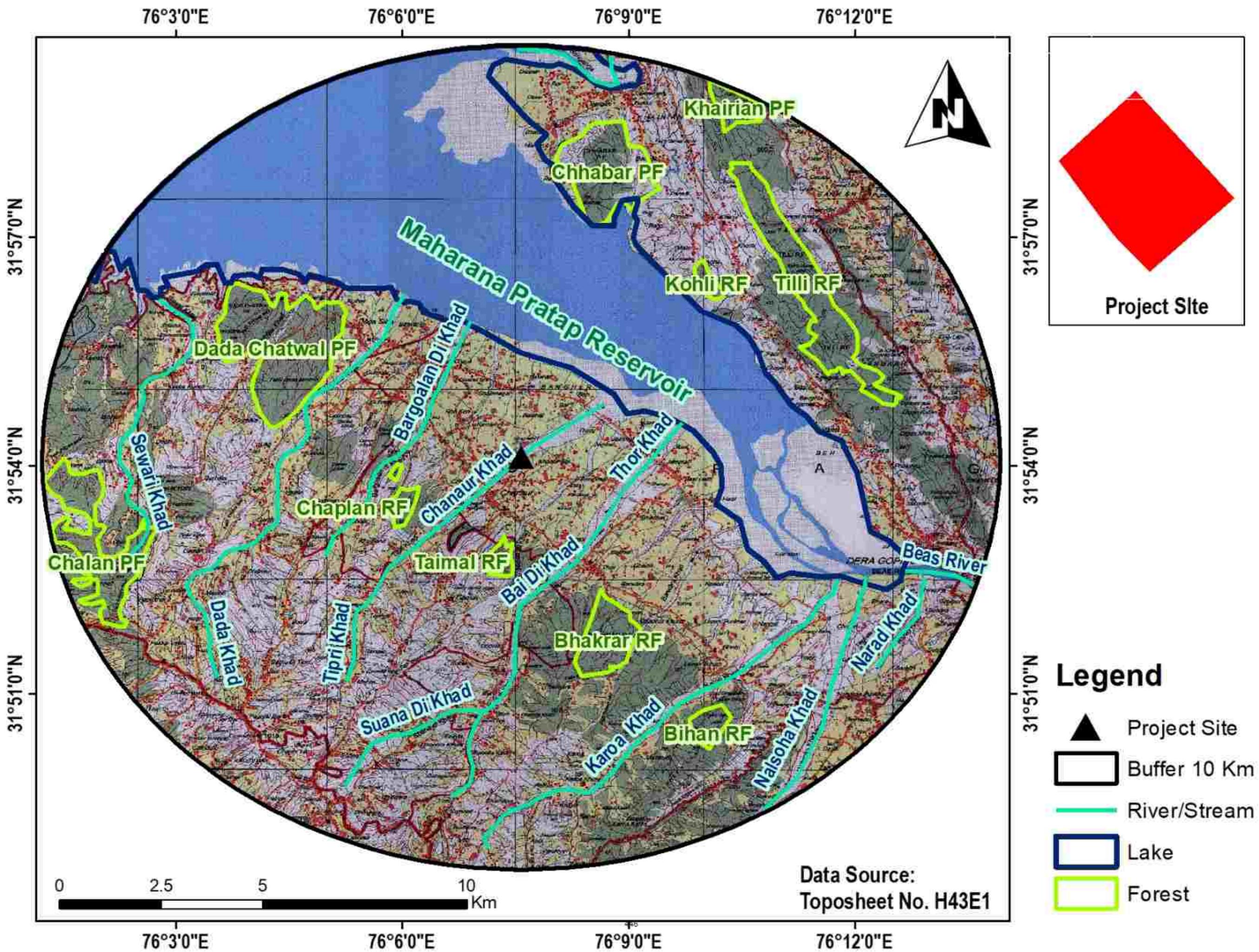
12) Parking area = 111.54 sqm
13) Total Road Area = 561.88 sqm
14) Total Green Area = 1034.18 sqm
15) Total Future Expansion Area = 604.72 sqm

SANJAY PURI & ASSOCIATES		Sheet No. - 001 of 01
DESIGNER, ARCHITECT, VALUER & CONSTRUCTION CONSULTANTS		Client: M. Sarda Park
489 882789, 16, Panchsala		Contractor: Sh. Sarda Park
MOBILE: 9816480209, 9810265489		Approver: Sh. Sarda Park
THIS DRAWING IS THE PROPERTY OF THE CONSULTANTS. NO PART OF THIS SHALL BE USED, COPIED OR REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.		
SCALE: 1:10	Date: 27.11.2023	

Environment Sensitivity Map of 10 Km Buffer for "Formaldehyde manufacturing unit with production capacity of 100 KLD" by M/s Feel Organic Products.

Drawing 2

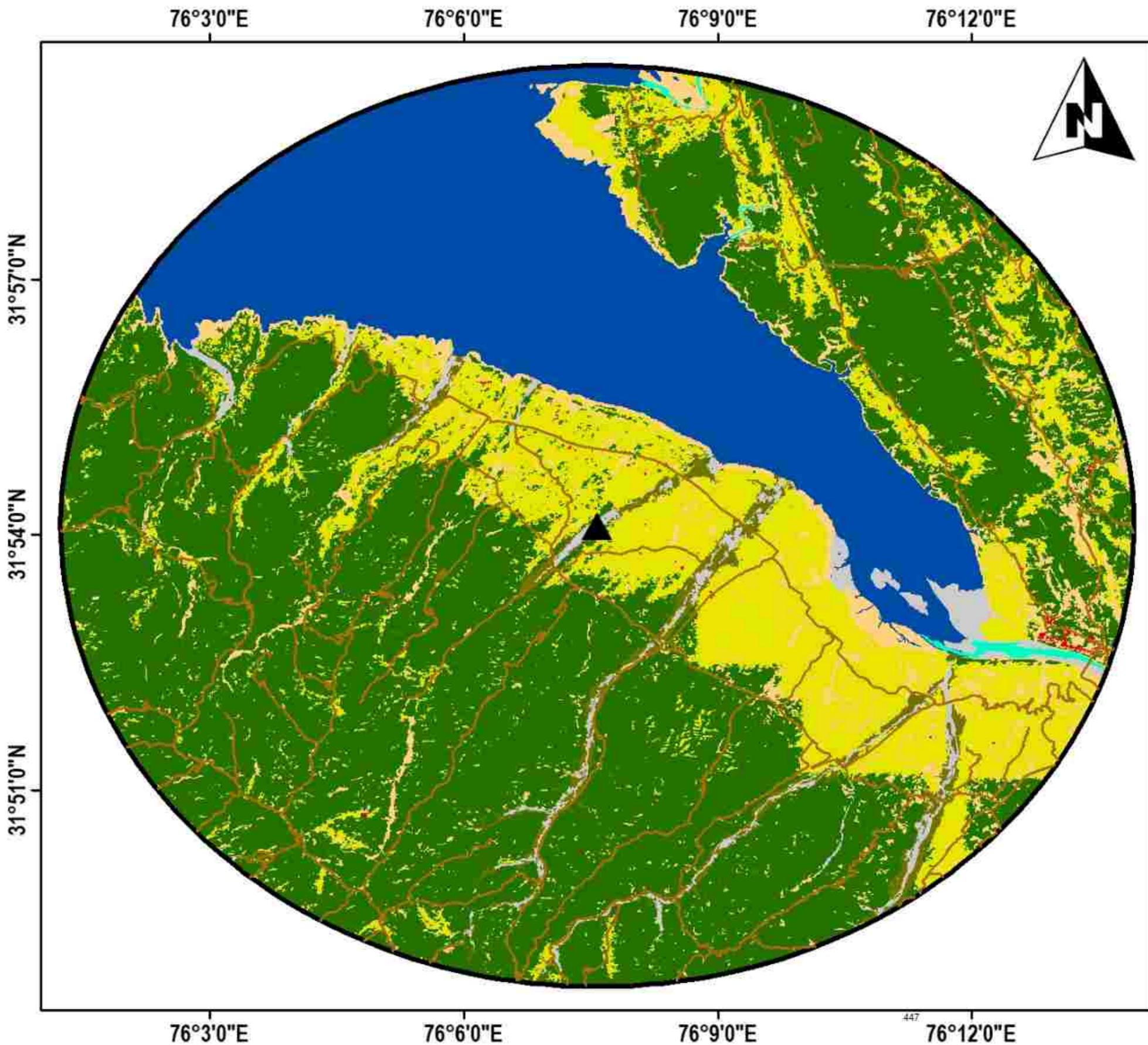
Location: Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P).



Land Use Land Cover Map of 10 Km Buffer for "Formaldehyde manufacturing unit with production capacity of 100 KLD" by M/s Feel Organic Products.

Location: Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P).

Drawing 3



Legend

- Project Site
- Crop Land
- Road
- Fallow Land
- Buffer 10 Km
- Forest
- River Bed
- Lake
- Scrub Land
- River
- Settlement

LULC Class	Area Sq. Km	% Area
Crop Land	52.10	16.60
Fallow Land	22.52	7.17
Forest	164.59	52.43
Lake	62.70	19.97
River	0.71	0.23
River Bed	5.82	1.85
Scrub Land	5.19	1.65
Settlement	0.31	0.10
Total	313.94	100.00

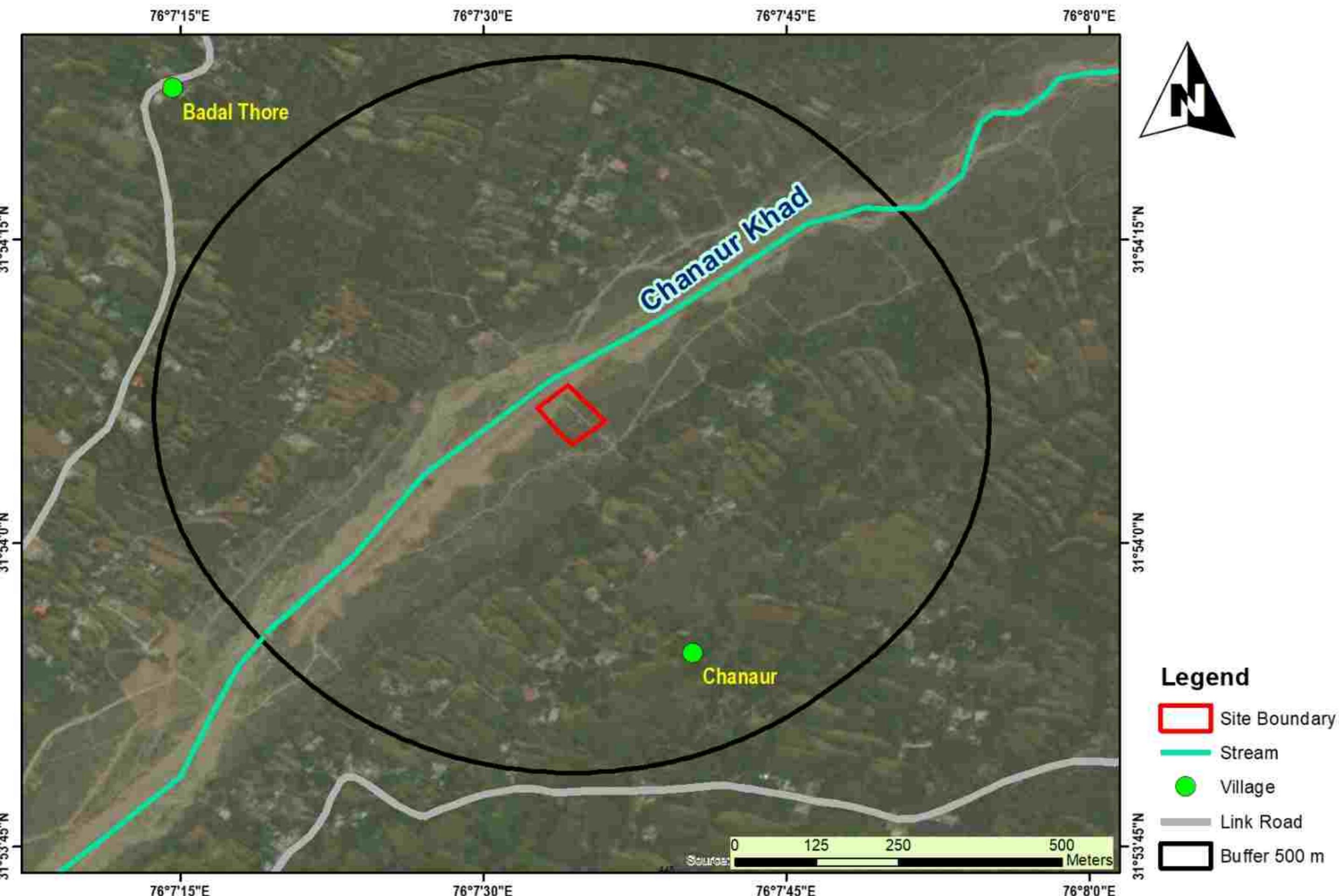
Data Source
Sentinel-2 Satellite Data (10 m Res.)
Dated: 25-Jan-2023

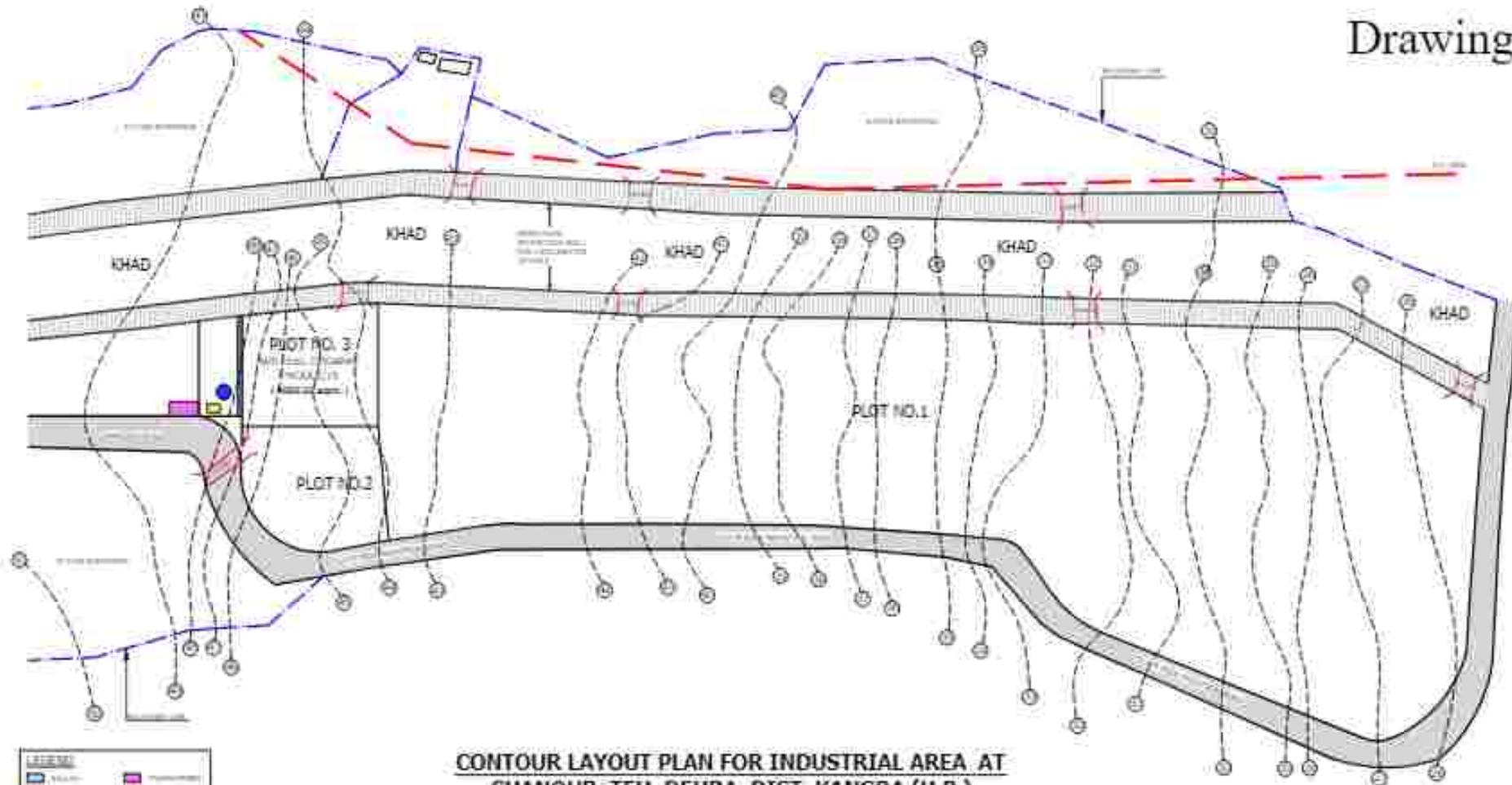


Location Map of 500 Meter Buffer for "Formaldehyde manufacturing unit with production capacity of 100 KLD" by M/s Feel Organic Products.

Drawing 4

Location: Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P).





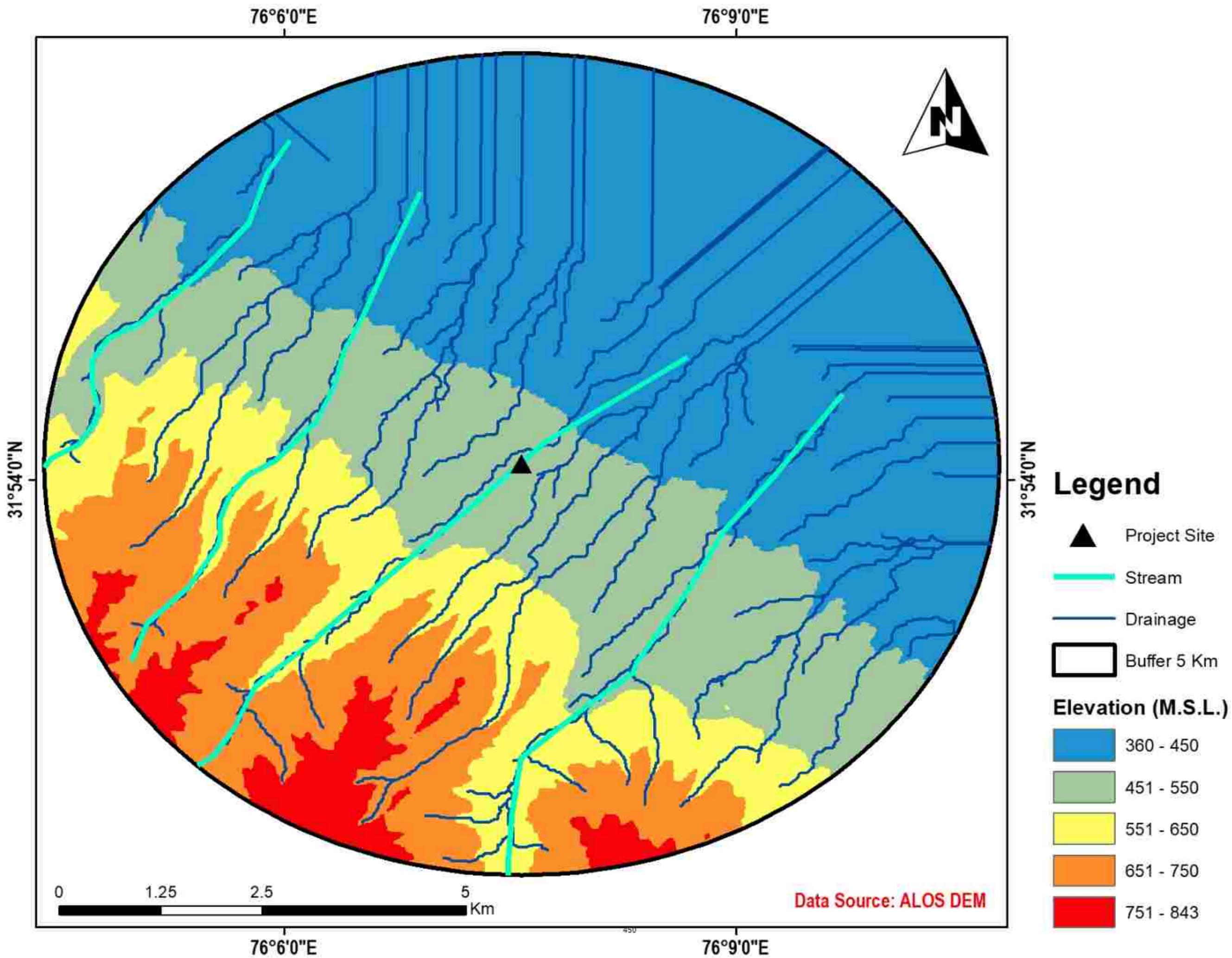
**CONTOUR LAYOUT PLAN FOR INDUSTRIAL AREA AT
CHANOUR, TEH. DEHRA, DIST. KANGRA (H.P.)
(PHASE - 2)**

CLIENT - M/S FEEL ORGANIC PRODUCTS	TITLE- CONTOUR LAYOUT PLAN	ENGINEER	SANJAY PURI & ASSOCIATES DESIGNER, VALUER & CONSTRUCTION CONSULTANTS # 488 SECTOR- 16, PANCHKULA PHONE NO. 0172-4187815 MOBILE- 9876406259, 9815286489	SHEET NO.- SP-01
PROJECT - CONTOUR LAYOUT PLAN OF FORMALDEHYDE PLANT FOR M/S FEEL ORGANIC PRODUCTS PLOT NO. - 3, INDUSTRIAL AREA CHANOUR, TEH. DEHRA, DIST. KANGRA (H.P.)			THIS DRAWING IS THE PROPERTY OF THE CONSULTANTS. NO PART OF THIS SHALL BE USED, COPIED OR REPRODUCED WITHOUT THEIR WRITTEN PERMISSION	DEALT BY - KRITIKA
			SCALE - N.T.S	CHECKED BY - ER. SANJAY PURI Date - 08.02.2023

Drainage Map of 10 Km Buffer for "Formaldehyde manufacturing unit with production capacity of 100 KLD" by M/s Feel Organic Products.

Drawing 6

Location: Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P).





No. H43E1
Scale 1:50,000

I43V16 (43P/16)	I43W4 (52D/4)	I43W8 (52D/8)
H43D13 (44M/13)	H43E1 (53A/1)	H43E5 (53A/5)
H43D14 (44M/14)	H43E2 (53A/2)	H43E6 (53A/6)

1 Chamba, HIMACHAL PRADESH.
2 Hamirpur, HIMACHAL PRADESH.

भारतीय सर्वेक्षण विभाग SURVEY OF INDIA

1st Edition 2011. Price : Rs. 70/-

CONVENTIONAL SYMBOLS

- Express highway with toll, with bridge, with distance stone
- Roads, metalled according to importance
- Roads, double carriageway according to importance
- Unmetalled road Cart-track Pack-track with pass Foot-path
- Streams with track in bed, undefined Canal
- Dams: masonry or rock-filled, earthen, Weir
- River, dry with water channel, with island & rocks, Tidal river
- Swampy rocks, Shrub, Swamp, Reeds
- Wells: lined, unlined, Tube-well, Spring, Tanks: perennial, dry
- Embankments: road or rail, tank, Broken ground
- Railways, broad gauge: double, single with station, under constr.
- Railways, other gauges: double, single with distance stone, do.
- Mineral line or tramway, Kin, Cutting with tunnel
- Contours with sub-features, Rocky slopes, Cliffs
- Sand features: (1)flat, (2)jand-hills(permanent), (3)junes(shifting)
- Towns or Villages: inhabited, deserted, Fort
- Habit: permanent, temporary, Tower, Antiquities
- Temple, Chhatri, Church, Mosque, Jogh, Tomb, Graves
- Lighthouse, Lightship, Buoys: lighted, unlighted, Anchorage
- Mine: open, shaft, Grass, Scrub
- Palm: palmyra, other, Plantain, Conifer, Bamboo, Other trees
- Areas: cultivated, wooded, Surveyed tree
- Boundary, international
- state: demarcated, undemarcated
- district, subdivision, label or block, forest
- Boundary pillars: surveyed, unlocated
- Heights, triangulated: station, point, approximate
- Bench-mark: geodetic, tertiary, canal
- Post office, Telegraph office, Overhead tank
- Rest house or inspection bungalow, Circuit house, Police station
- Camping ground, Forest: reserved, protected
- Spaced names: administrative, locality or tribal
- Hospital, Dispensary, Veterinary Hospital / Dispensary
- Aerodrome, Helipad, Tourist site
- Power line: with pylons surveyed, with poles unsurveyed

REFERENCE

NH 70 National Highway No. 70

NOTES

- Heights are in metres and above Indian mean sea level.
- Contours are approximate.
- A relative height, e.g., 8, represents the approximate height, in metres, between the top and bottom of a steep slope.
- Tanks, shown dry in this area usually contain water from July to November.
- Unmetalled roads in this sheet are generally motorable in dry season.
- The course of the Beas River is liable to continual change owing to shifting of the river bed.
- Cultivation is periodic and dependent on rainfall.

COMPILATION INDEX

A. Compiled from 1:25,000 scale survey, carried out during 1980-81. Updated for major details during 2005-06.

Projection - UTM Datum - WGS 84

Magnetic Variation from True North about 1 1/4° East in 2005. (Increasing by about 1° annually).

Scale 1:50,000



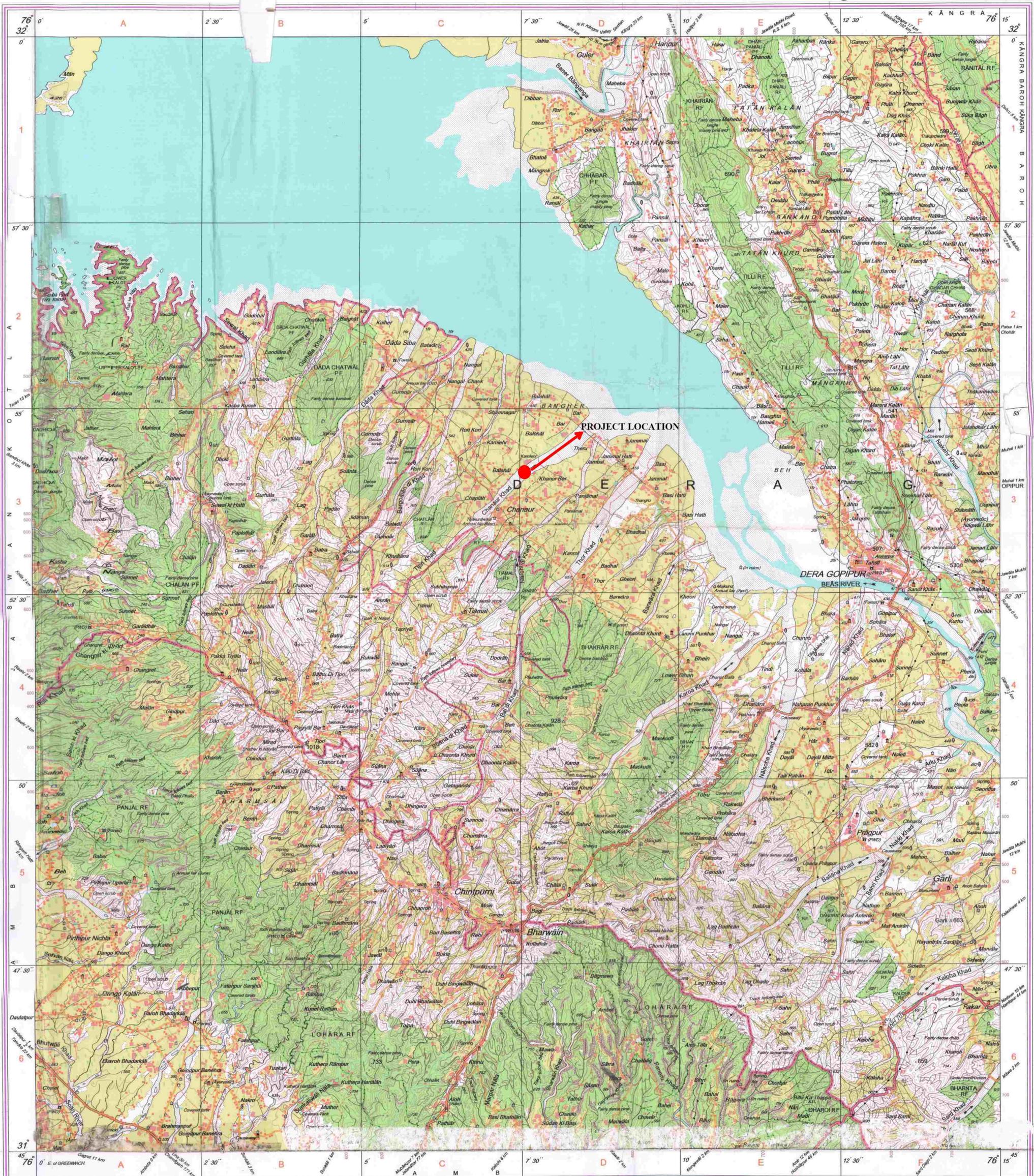
CONTOUR INTERVAL 20 METRES

For further details about this map, please contact Director Himachal Pradesh Geo-Spatial Data Centre Survey of India, Sector 32 A Chandigarh.

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EXECUTIVE SUMMARY

1.0 PROJECT DESCRIPTION

M's Feel Organic Products is planning to set up a Formaldehyde manufacturing unit with production capacity of 100 KLD at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). The total plot area of the proposed unit is 4000 sq. m (4,783.96 sq. yards or 0.98 acres. As per the EIA Notification of Ministry of Environment, Forest & Climate Change (MoEF&CC) dated 14th September, 2006 and amendments thereof, the proposed project falls under Category- 'A', Schedule 5(f) Synthetic Organic Chemicals Industry, as the project is located within 10 km. from the boundary of notified Pong Dam Wildlife Sanctuary. Thus, the application for Environmental Clearance is being submitted to EAC, MoEF&CC.

The salient features of the project will be as under:

- **Production capacity:** 100 KLD of Formaldehyde
- **Total Area of the project:** 4000 sq.m (4,783.96 sq. yards or 0.98 acres)
- **Estimated project cost:** Rs. 441.25 Lakhs
- **Interlinked projects:** None

2.0 LOCATION & CONNECTIVITY

Project site is located at at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra (H.P). The Nearest Highway is NH-503 which is at a distance of approx. 8.30 km. in 'SE' direction connected by Dadasiba Road which is at a distance of approx. 1 km. in 'SW' direction. Nearest Railway Station Guler Railway Station is approx. 11.63 km in 'NE' direction; Kangra-Gaggal Airport is located at a distance of approx. 31.86 km in 'NE' direction.

3.0 BRIEF FEATURES OF PROJECT

Table 1: Size/magnitude of operation of project

S. No.	Parameters	Description
1.	Identification of the project	Formaldehyde manufacturing unit with production capacity of 100 KLD falls under Category- 'A', Schedule 5(f) Synthetic Organic Chemicals Industry

		as per EIA Notification dated 14 th September, 2006 and its subsequent amendments.
2.	Project Proponent	Mr. Devinder Kumar Dhir (Partner) M/s Feel Organic Products E-mail: feelorganicproducts@gmail.com
3.	Brief description of nature of the project	Formaldehyde manufacturing unit with production capacity of 100 KLD located at Plot No.-3, Industrial Area Chanour, Phase-II, Teh. Dehra, Dist. Kangra, Himachal Pradesh. by M/s Feel Organic Products. The total plot area of the proposed unit is 4000 sq. m. (4,783.96 sq. yards or 0.98 acres) and 33.35% of plot area i.e. 1334.18 sq.m. has been reserved for green area within the industry.
4.	Salient Features of the Project Proposed	
4.1	Overall plant capacity	Proposed Quantity: 100 KLD.
4.2	Area Details	Plot area: 4000 sq. m. (4,783.96 sq. yards or 0.98 acres)
4.3	Location	Project boundary coordinates of all corners are as follows: A: 31°54'6.69"N, 76° 7'32.68"E B: 31°54'4.87"N, 76° 7'34.40"E C: 31°54'6.07"N, 76° 7'36.05"E D: 31°54'7.82"N, 76° 7'34.18"E Google Earth Image showing project location & its surroundings within 500 m are attached along as Drawing 4 . Project site and its study area falls in the Survey of India, Toposheet No. H43E1 , showing project location is attached along as Drawing 7 .

4.4	Water requirement	<p>Source: Ground water (Borewell).</p> <p>Total water requirement for the proposed project will be 86 KLD, out of which fresh water requirement will be 82 KLD which will be met through borewell till the development work of water supply scheme for industrial area Chanour is completed. Permission of water supply has been granted from Distt. Industries Centre, Kangra vide letter no. Ind/Kgr/IA/Chanour/P-3/3607. Copy of same is attached as Annexure-5.</p>
4.5	Wastewater	<p>There is no wastewater generation from the process. 13.7 KL once in three months from cooling tower, boiler and plant washing and 7.3 KLD of RO reject will be generated which will be treated in evaporator to achieve ZLD (Zero liquid discharge). Condensate from evaporator will be reused to meet the cooling water demand. 2 KLD of domestic wastewater will be generated from the unit which will be treated in a septic tank and will be reused for green area demand.</p>
4.6	Man Power	<p>Total work force of around 37 persons distributed in 3 shifts including technical, skilled, semi-skilled, administrative, etc.</p>
4.7	Power requirement	<p>Total power requirement will be 250 Kw which will be supplied by Himachal Pradesh State Electricity Board Limited (HPSEBL) for which permission has been granted vide letter no. Ind/Kgr/IA/Chanour/P-3/2609 dated 20.01.2023. Copy of approval from HPSEBL is attached as Annexure-6. DG set of capacity 200 kVA each will be provided as power back up.</p>
4.8	Alternative site	<p>No alternate site is considered for the proposed</p>

		project as the said project falls under notified Industrial Area as per the notification No. Ind.A(F)S-1/2019. Copy of same is attached as Annexure-3 .
4.9	Land form, Land use and Land ownership	The land has already been allotted to M/s Feel Organic Products to set up a Formaldehyde manufacturing unit. Project falls in notified Industrial Area.

4.0 METEOROLOGY

Meteorological data has been taken from October to December, 2022 of 10 km study area and is conducted by NABL and MoEF&CC approved laboratory. The predominant winds are mainly flowing towards North-West direction, with the secondary wind direction being from the South-East.

5.0 AIR QUALITY

PM_{2.5}, PM₁₀, SO₂ and NO₂ levels (Criteria Pollutants), O₃ as well as NH₃ were monitored at 8 locations in the 10 km study area by M/s Eco Paryavaran Laboratories & Consultants Pvt. Ltd. Monitoring stations were selected keeping in view of the dominant wind direction. On an average, the observed levels are as follows: PM₁₀ from 33 µg/m³ to 51 µg/m³ around the project location and 46 µg/m³ at the project site, PM_{2.5} varies from 17 µg/m³ to 28 µg/m³ around the project location and 24 µg/m³ at the project location, SO₂ from 7 µg/m³ to 8 µg/m³ around the project location and 7 µg/m³ at the project site and NO₂ from 15 µg/m³ to 23 µg/m³. The results when compared with National Ambient Air Quality Standards (NAAQS) of Central Pollution Control Board (CPCB) for "Industrial/ Residential/ Rural and Other Areas", it was observed that all the values of SO₂, NO₂, CO and PAH were within the prescribed limits. Average value of particulate dust as PM₁₀ & PM_{2.5} are within the 24 hours average NAAQ standards of 100 µg/m³ and 60 µg/m³ respectively.

6.0 NOISE QUALITY

Ambient noise levels were measured at 5 locations within the project location and 3 locations outside the project site within the 2 km radius of project. Noise levels varied from 43.2 dB(A) and 48.5 dB(A) during the day time and were 35.8 dB(A) and 38.1 dB(A) during night time in the study area. The obtained noise levels are well within prescribed limits for industrial

area and marginally higher for residential areas indicating annoying environment for population and sensitive receptors.

7.0 WATER QUALITY

Groundwater monitoring was done at 8 locations at project and within study area. The ground water test results indicate that water is good in quality and safe for drinking purpose. In the study area, since the samples have been collected from different sites at isolated places, the level of concentration and different elements vary quite considerably which may be due to small aquifers. However, the levels of the various components are within acceptable/ permissible norms for drinking water.

As no effluent will be generated from the industry after the commissioning. Hence, surface water quality will not be affected due to the industry.

8.0 SOIL QUALITY

The soil samples were collected from project location and at 7 other locations within study area. The soil analysis results in the study area indicates that soil is neutral in nature and Sandy loam texture with medium class of fertility in the study area.

9.0 ECOLOGY

No plant or animal species were found as per the endangered list within 10 km radius of the project site. The project is located in notified industrial area and Pong Dam Lake Wildlife Sanctuary is approx. 2.60 km away from the project site in North direction. The distance from Eco sensitive zone of the wildlife sanctuary from the project site is approx. 1.68 km.

10.0 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

10.1 AIR QUALITY

The pollutants from the project will be from Boiler stack and DG set. DG will be used as source of power supply and will be used in case of power failure only. HSD/ LDO oil will be used as fuel in Boiler and DG set. Adequate stack height & acoustic enclose will be provided to Boiler and DG set.

10.2 NOISE QUALITY

The operation of boiler and DG set etc. are the major sources of noise during operation phase of the project. DG. Set will be provided with acoustic enclosures and operated only during the power failure. All the workers engaged at and around high noise generating sources are being provided with ear protection devices like ear muffers/ plugs. They will be regularly subjected to medical check-up for detecting any adverse impact on the ears. The green belt will also help to prevent noise generated within the plant from spreading beyond the plant boundary. Workplace ambient level is not expected to be beyond 75 dB(A) during day time and 70 dB(A) during night time which is much below the limit specified for 8 hours of exposure.

10.3 WATER QUALITY

10.3.1 Domestic Effluent

Approx. 2 KLD of sewage will be generated which will be treated in septic tank.

10.3.2 Industrial effluent

The industrial effluent will be treated in evaporator of capacity 10 KLD; which will further be used in process, boiling feed and cooling water make-up.

10.4 SOLID WASTE

10.4.1 DOMESTIC WASTE

Approximately, 10 kg/day (25 persons × 0.2 kg/person/day + 12 persons × 0.4 kg/person/day) of domestic waste will be generated. The solid waste will be disposed off as per Solid Waste Management Rules, 2016 and amendments thereof. The color coded closed bins for biodegradable and non-biodegradable waste shall be placed in each section. The biodegradable waste bin will be treated in compost pits. The waste from non-biodegradable waste bin shall be given to recyclers.

10.4.2 HAZARDOUS WASTE

The plant will generate following Hazardous waste as given below. The Hazardous waste will be collected, stored and disposed as per Hazardous Waste Management Rules, 2016 and amendments thereof.

S. No.	Name of Waste	Category	Quantity	Mode of Disposal
1.	Used Oil	5.1	0.1 KL/annum	To authorized recycler
2.	Evaporator Sludge	35.3	44 tones/annum	To TSDF

11.0 GREENERY DEVELOPMENT

Green area of 1334.18 sq.m. (33.35%) will be provided inside the plant premises. Locally available type of trees which are resistant to pollutants will be planted. Tree plantation around the plant helps to arrest the effects of particulate matter and gaseous pollutants in the area besides playing a major role in environmental conservation efforts. The green belt would:

- mitigate gaseous emissions
- have sufficient capability to arrest accidental release
- effective in wastewater reuse
- maintain the ecological balance
- control noise pollution to a considerable extent
- prevent soil erosion
- improve the Aesthetics

All the species suggested are pollution tolerant, besides having an aesthetic appeal.

12.0 ENVIRONMENTAL MONITORING PLAN

The environment monitoring plan enables environmental management system with early sign of need for additional action and modification of ongoing actions for environment management, improvement and conservation. The environmental monitoring points will be decided considering the environmental impacts likely to occur due to the operation of project as the main scope of monitoring program is to track, timely and regularly, the change in environmental conditions and to take timely action for protection of environment. Monitoring of environmental samples will be done as per the guidelines provided by MoEF&CC/ CPCB/ HPPCB. Separate records for water, wastewater, air & stack emission will be maintained regularly. Along with other budgets, budget for environmental management will be prepared and revised regularly as per requirement.

13.0 RISK MITIGATION MEASURES

Even with all precautions, disasters may take place. As such, an Emergency Plan will be formulated to take care of any disaster in the plant and surrounding areas. In order to prevent

occurrence of any disaster, the plant will be provided with various safety and disaster control facilities. In addition to these, numerous material handling systems, heavy road transport, high-tension electric lines, overhead cranes and various other handling and transport systems always have chances of accidents.

14.0 PUBLIC CONSULATION

Public hearing for establishment of the unit will be conducted by Himachal Pradesh State Pollution Control Board (HPSPCB). The proceedings of the same will be incorporated in the final EIA report.

15.0 PROJECT BENEFITS

The project will overcome the demand and supply gap of steel product in the country. The proposed project will also generate additional revenue for the State Government. The formaldehyde availability will boost the various MSME industries and overall economic scenario of the country. The project will create additional direct/indirect employment for people. Local people will be preferred for employment during construction and operation stage.

16.0 CORPORATE ENVIRONMENT RESPONSIBILITY (CER)

Mr. Devinder Kumar Dhir (Partner) of M/s Feel Organic Products will be responsible for implementation of CER activities. The total estimated cost of project is Rs. 441.25 lakhs. Thus, Rs. 4 lakhs (approx. 1% of project cost) will be spent on CER activities in consultation with concerning ULBs/ PRIs (Urban Local Bodies/Panchayat Raj Institutions) through Department of Environment, Science & Technology, Govt. HP. Thus, the following activities will be proposed to be covered under CER:

Table 4.8: CER activities

S. No.	Activities	Amount
1.	Installation of Plastic waste shredders machine	Rs. 4 lakhs

Further, the issues raised during public hearing will be undertaken under CER.

17.0 ENVIRONMENTAL MANAGEMENT PLAN

Environment Management Department will implement the EMP of this proposed project. All recommendations given in the EIA report including that of occupational health, risk mitigation and safety will be complied. Capital cost for the Environment Management Plan is estimated to be Rs. 69.5 lakhs and recurring cost per year will be Rs. 8 lakhs. Greenbelt and greenery development inside and outside the plant premises will be intensified by the EMD. Guidelines issued by the Central Pollution Control Board (CPCB) on greenbelt development will be followed. Environmental awareness programs for the employees will be conducted. EMD will ensure cleanliness inside the plant.

कार्यकारी संक्षिप्त वर्णन

1.0 प्रोजेक्ट वर्णन

मैसरज फील आरगैनिक प्रोडैक्स एक फारमैलडेहाईड निर्माण यूनिट जिस की उत्पादन क्षमता 100 के एल डी होगी प्लॉट नं- 3, उद्योगिक एरिया चनौर, फेज-2, तहिसील डेहरा, जिला कांगड़ा (हिमाचल प्रदेश) में स्थापित करने की योजना बना रही है। प्रस्तावित यूनिट का कुल रकबा 4000 वर्ग मीटर (4,783.98 वर्ग गज या 0.98 एकड़) है जो कि वातावरण मंत्रालय जंगलात एवम् जलवायु परिवर्तन (एम ओ ई एफ एवम् सी सी) तिथि 14 सितंबर 2006 और उस में संशोधन के ई आई ए की अधिसूचना के अनुसार प्रस्तावित प्रोजेक्ट वर्ग-ए सूची 5 (एफ) सिन्थेटिक आरगैनिक रसायन उद्योग के अधीन पड़ता है क्योंकि प्रोजेक्ट अधिसूचित पॉग डैम वार्हलडलाईफ सैन्कचयूरी की सीमा से 10 किलो मीटर के बीच वाक्या है। इस लिये वातावरण स्पष्टता का प्रार्थना पत्र ई ए सी, एम ओ ई एफ एवम् सी सी के पेश किया जा रहा है।

प्रोजेक्ट की मुख्य विशेषताएँ निम्नलिखित होंगी :-

- उत्पादन क्षमता : 100 के एल डी आफ फारमैलडेहाईड
- प्रोजेक्ट का कुल एरिया : 4000 वर्ग मीटर (4,783.98 वर्ग गज या 0.98 एकड़)
- अनुमानित प्रोजेक्ट लागत : रुपये 441.25 लाख
- इन्टरलिकड प्रोजेक्ट : कोई नहीं

2.0 जगह की स्थिति/वाक्या और कुनैक्टिविटी

प्रोजेक्ट साईट प्लॉट नं - 3, उद्योगिक एरिया चनौर, फेज-2, तहिसील डेहरा, जिला कांगड़ा (हिमाचल प्रदेश) में स्थित है। सब से नजदीक हाईवे एन एच- 504 है जो कि दक्षिण-पूर्व दिशा में तकरीबन 830 किलो मीटर के फासले पर है जो कि दादसिबा रोड द्वारा जुड़ा है जो कि दक्षिण- पश्चिम दिशा में 1 किलो मीटर की दूरी पर है। सब से नजदीक का रेलवे स्टेशन गुलर रेलवे स्टेशन लगभग 11.83 किलोमीटर उत्तर-पूर्व दिशा में है। कांगड़ा-गच्छल ऐअर पोर्ट तकरीबन 31.88 किलो मीटर की दूरी पर उत्तर-पूर्व दिशा में स्थित है।

3.0 प्रोजेक्ट की संक्षिप्त विशेषताएँ

तूरी 1 : साईज/प्रोजेक्ट के आपरेशन का विस्तृत फौसाव

क्रमांक	पैरामीटर / दायरे	वर्णन
1.	प्रोजेक्ट की शनाख्त	फारमैलडेहाईड निर्माण यूनिट 100 के एल डी उत्पादन क्षमता के साथ वर्ग- ए के अधीन आता है, सूची 5(एफ)

		सिन्थेटिक आरगैनिक रसायन उद्योग ई आई ए अधिसूचना तिथि 14 सतम्बर, 2008 के अनुसार और इसकी बाद के संशोधन
2.	प्रोजैक्ट आगे चलाने वाले (प्रोपोनैट)	मिस्टर देविन्द्र कुमार धीर (पार्टनर) मैसरज फील आरगैनिक प्रोडक्ट्स ई-मेल फीलआरगैनिकप्रोडक्ट्स@जीमेल.काम
3.	प्रोजैक्ट की प्रकृति का संक्षिप्त वर्णन	फारमैलुटेइहाईड निर्माण यूनिट 100 के एल डी उत्पादन क्षमता के साथ वाक्या प्लाट न - 3, औद्योगिक एरिया चनौर, फेज-2, तहिसील डेहरा, जिला कांगड़ा (हिमाचल प्रदेश) द्वारा फील-आरगैनिक प्रोडक्ट्स । प्रस्तावित यूनिट का प्रोजैक्ट का कुल प्लाट एरिया 4000 वर्ग मीटर (4,783.98 वर्ग गज या 0.98 एकड़) है और प्लाट एरिया का 33.35 % यानि कि 1334.18 वर्ग मीटर उद्योग के अन्दर गीन एरिया के लिये राखी सुरक्षित रखा गया है ।
4.	प्रस्तावित प्रोजैक्ट की मुख्य बातें	
4.1	प्लाट की पूर्ण क्षमता	प्रस्तावित मिळदार: 100 के एल डी
4.2	एरिया के विवरण	प्लाट एरिया : 4000 वर्ग मीटर (4,783.98 वर्ग गज या 0.98 एकड़)
4.3	जगह	सारे कारनरज के प्रोजैक्ट चारदीवारी साथ काम करने वाले निम्नलिखित हैं : A:31°54'6.69"N,76° 7'32.68"E B:31°54'4.87"N,76° 7'34.40"E A:31°54'6.07"N,76° 7'36.05"E A:31°54'7.82"N,76° 7'34.18"E प्रोजैक्ट जगह और इसकी डुई गिई 500 मीटर में दर्शाते गूगल अर्थ प्रतिबिंब झाईंग 4 साथ संलग्न किये हैं प्रोजैक्ट साईट और इस का अध्ययन एरिया भारत के

		सर्वेक्षण में पड़ता है, टापशीट नं एच43ई 1, जो कि प्रोजेक्ट जगह को दर्शाता है बतौर ड्राईंग 7 साथ संलग्न की है ।
4.4	पानी की जरूरतें	<p>स्तोत्र जमीनी पानी (बोरवेल)</p> <p>प्रस्तावित प्रोजेक्ट के लिये कुल पानी की जरूरतें 88 कॅ एल डी होगी । जिस में से साफ पानी जरूरत 82 कॅ एल डी की होगी जिस को तब तक बोरवेल से पूरा किया जायेगा जब तक उद्योगिक एरिया चन्नौर के लिये पानी स्पलाई स्कीम के विकास का काम पूरा नहीं होता । जिला उद्योगिक केन्द्र कांगडा द्वारा पानी स्पलाई की मजूरी पत्र नं इद/केजीआर/आई ए/चन्नौर/पी-3/3607 द्वारा प्रदान की गई है । इस की कॉपी साथ बतौर अनुलग-5 संलग्न है ।</p>
4.5	वेस्ट पानी	<p>प्रक्रिया से कोई फालतू पानी पैदा नहीं होता है । 13.7 कॅ एल/तीन महीनो में एक बार कूलिंग टावर बायलर और प्लाट वाशिंग से और 73उ कॅ एल डी आर ओ रिजैक्ट का पैदा होगा जिस को जैड एल डी (जीरो तरल डिस्चार्ज) प्राप्त करने के लिये वाष्पीकरण यन्त्र में टरीट किया (सुखाया और उड़ाया) जायेगा । वाष्पीकरण से ठण्डे अवशेष कूलिंग पानी माँग को पूरा करने के दोबारा इस्तेमाल किये जायेंगे । घरेलू वेस्टपानी का 2 कॅ एल डी यूनिट से पैदा होगा जिस को सैप्टिक टैंक में टरीट किया जायेगा और ग्रीन एरिया माँग के लिये दोबारा इस्तेमाल किया जायेगा ।</p>
4.6	जन शक्ति	<p>कुल काम की शक्ति लगभग 37 व्यक्ति जो कि 3 शिफ्टो में विभक्त किये जायेंगे जिस में शामिल है तकनीकी कुशल अर्ध-कुशल, प्रबन्धकीय, वगैरा ।</p>
4.7	बिजली जरूरतें	<p>कुल बिजली की जरूरत 250 कॅ डब्लियू होगी जो कि हिमाचल प्रदेश राज्य बिजली बोर्ड लिमिटेड (एच पी एस ई बी एल) द्वारा स्पलाई की जायेगी जिस के लिये मजूरी पत्र नं इद/केजीआर/आई ए/चन्नौर/पी-3/2609 तिथि</p>

		20.01.2023 द्वारा दी गई है। मंजूरी फार्म एच पी एस ई डी एल की कापी बतौर अनुलग 8 संलग्न है। डी जी सैट क्षमता 200 कं वी ए हर एक पावर डैक अप के लिये दिया जायेगा।
4.8	बदलवी साईट	प्रस्तावित प्रोजेक्ट के लिये कोई बदलवी जगह का विचार नहीं किया गया क्योंकि उक्त प्रोजेक्ट अधिसूचना न. इ.ए(एफ)8-1/2019 के अनुसार अधिसूचित औद्योगिक एरिया में आता है। इस की कापी बतौर अनुलग-3 साथ संलग्न है।
4.9	जमीन किस्म, जमीन इस्तेमाल और जमीन मलकियत	जमीन पहले ही मैसराज फील आरगैनिक प्रोडक्ट्स को फारमैल्डेहाईड निर्माण यूनिट लगाने के लिये अलाट की जा चुकी है। प्रोजेक्ट फाईल अधिसूचित औद्योगिक एरिया में आता है।

4.0 वायुमण्डल विज्ञान

वायुमण्डल विज्ञान आंकड़े अक्टूबर से दिसम्बर 2022 तक के 10 किलो मीटर अध्ययन क्षेत्र के लिये गये हैं और इसमें एन ए डी एल और एमआईएफ एवम् सी सी मंजूर लैबोरेटरी द्वारा किया गया है। अधिक प्रभावपूर्ण हवाएँ मुख्यतः उत्तर-पश्चिम दिशा की ओर चलती हैं, इस के साथ ही दूसरे दर्जे की हवा की दिशा दक्षिण-पूर्व की ओर चलती है।

5.0 हवा की गुणवत्ता

पीएम 2.5 पीएम 10, एस ओ 3 और एन ओ 3 स्तर (गंदा करने वाले कणों का माप दण्ड), ओ 3 और एन एच 4 मैसराज इको पर्यावरण लैबोरेटरीज और कन्सल्टेंट प्राइवेट लिमिटेड द्वारा 10 किलोमीटर 9 लोकेशन अध्ययन क्षेत्र में पाये गये, प्रभावपूर्ण वायु दिशा के मॉनजर अनुभवण स्टेशन चुने गये। एक औसत पर देखे गये स्तर निम्नलिखित हैं: 33 मिउजी/एम 3 से 51 मिउजी/एम 3 तक पी एम 10 प्रोजेक्ट जगह के चारों ओर और 48 मिउजी/एम 4 प्रोजेक्ट साईट पर 17 मिउजी/एम 3 से 28 मिउजी/एम 3 तक पी एम 2.5 प्रोजेक्ट जगह के चारों ओर और 24 मिउजी/एम 3 प्रोजेक्ट साईट पर और 7 मिउजी/एम 3 से 8 मिउजी/एम 3 तक एस ओ 2 प्रोजेक्ट जगह के चारों ओर और 7 मिउजी/एम 3 प्रोजेक्ट साईट पर और 15 मिउजी/एम 3 से 8 मिउजी/एम 3 तक एन ओ 2। नतीजे जब केन्द्रीय प्रदूषण बोर्ड (सी पी सी डी) औद्योगिक/रिहाईशी/गाँव और दूसरे इलाकों के लिये राष्ट्रीय वायु चारों ओर की गुणवत्ता मियां (एन ए ए कियू एस) के साथ तुलना की गई, तो यह पाया

गया कि एस ओ 3, एन ओ 2, एन ओ 2 सी ओ और पी ए एच की सारी वैल्यू निर्धारित सीमा के अन्दर है । औस्तन वैल्यू धूल के कणों जैसे कि पी एम 10 एवम् पी एम 2.5 34 घण्टे की औस्तन एन ए ए कियु मिआर 100 मियू/एम 4 ओर 6 मियूजी/एम 4 कमठार के बीच है ।

6.0 शोर की गुणवत्ता

चारों ओर के कोलाहल के स्तर प्रोजैक्ट लोकेशन के अन्दर की 6 जगहों पर और प्रोजैक्ट के बाहर 3 जगहों पर प्रोजैक्ट 3 किलोमीटर अर्धव्यास में मापे गये । शोरगुल दिन के समय के दौरान 43.2 डीबी(ए) और 48.5 डीबी(ए) के बीच थे और रात के दौरान समय में अध्ययन क्षेत्र में 35.8 डीबी(ए) और 38.1 डीबी(ए) थे । प्राप्त की गई शोर का स्तर औद्योगिक ऐरिया के लिये निर्धारित सीमाओं के काफी नीचे और रहाईशी ऐरिया के लिये हाशिये पर कुछ ऊँचा जो कि प्रदूषण और संवेदनशील लोगों के लिये वातावरण नाराजगी का संकेत करता है ।

7.0 पानी की गुणवत्ता

जमीनी पानी की जाँच प्रोजैक्ट के 8 स्थानों और अध्ययन क्षेत्र में की गई । जमीनी पानी के परीक्षण नतीजे संकेत करते हैं कि पानी गुणवत्ता में अच्छा है और पीने के उद्देश्य के लिये सुरक्षित है । अध्ययन क्षेत्र में, क्योंकि नमूने सिन् 2 साईट से एकैली जगहों से इकट्ठे किये गये है, गाढ़ापन और सिन् 2 तत्थों का स्तर काफी अन्तर रखता है जो कि लगभग साफ करने के कारण हो सकता है । फिर भी कोई प्रकार के भागों के स्तर पीने के पानी के लिये स्वीकार्य/उचित कसौटी के बीच है ।

क्योंकि लगने के बाद उद्योग से कोई नाले का पानी नहीं निकलेगा इस लिये सतह के पानी की गुणवत्ता उद्योग के कारण प्रभावित नहीं होगी ।

8.0 मिट्टी की गुणवत्ता

मिट्टी के नमूने प्रोजैक्ट जगह से और अध्ययन क्षेत्र के 7 अन्य स्थानों से इकट्ठे किये गये । अध्ययन क्षेत्र में मिट्टी विश्लेषण नतीजे संकेत करते हैं कि मिट्टी प्रकृति में निष्कष है और सैंडी लोम समेत उपजाउपन का दरमियाना वर्ग अध्ययन क्षेत्र में है ।

9.0 परिस्थिति विज्ञान

प्रोजैक्ट साईट के 10 किलो मीटर अर्धव्यास में खतरे वाले जीवों की सूची के अनुसार कोई पौदा या जीव जन्तु की प्रजाति नहीं पाई गई । प्रोजैक्ट अधिसूचित औद्योगिक क्षेत्र के अन्दर वाक्या है और पोग डैम झील जगती जीवन संरक्षण प्रोजैक्ट से तकरीबन 2.60 किलोमीटर की दूरी पर उत्तर दिशा में है । वनजीव संरक्षण के जीव संवेदनशील जोन से प्रोजैक्ट साईट की दूरी तकरीबन 1.68 किलो मीटर है ।

10.0 पूर्व अनुमान वातावरण प्रभाव और प्रवासी कदम

10.1 वायु गुणवत्ता

प्रोजेक्ट से निकलने वाले कण बायलर स्टैक और डी जी सैट से होंगे । डी जी सैट बिजली स्पलाई का स्तोत्र की तरह इस्तेमाल किया जायेगा और सिर्फ बिजली गुल होने की हालत में इस्तेमाल किया जायेगा । एच एस डी/एल डी आं आयल बायलर और डी जी सैट से बत्तौर इधन इस्तेमाल किया जायेगा । उचित स्टैक उचाई और अकास्टिक रक्षा कवच बायलर और डी जी सैट के लिये दिया जायेगा ।

10.2 शोर की गुणवत्ता

बायलर और डी जी सैट वगैरा का चलाना प्रोजेक्ट के आपरेशन फेज दौरान शोर के बड़े स्तोत्र हैं । डी जी सैट अकास्टिक रखनों के साथ दिये जायेंगे और सिर्फ बिजली के जानें के दौरान ही चलाया जायेगा । सारे कर्मचारी जो कि उच्च शोर पैदा करने वाले स्तोत्रों पर और चारों ओर काम पर लगे हुए हैं का कान सुझा उपकरण जैसे कं मफलर/प्लग दिये जा रहे हैं ।

उन का नियमित डाक्टरी चैक-अप किया जायेगा ताकि कानों पर किसी बुरे प्रभाव का पता लगाया जा सके । ग्रीन बेल्ट भी प्लाट के बीच पैदा हाने वाले शोर को प्लाट के चार दीवारी के बाहर फैलने से रोकने के लिये मदद करेगी । चारों तरफ का काम की जगह का स्तर को उमीद की जाती है कि दिन के समय दौरान 75 डी बी (ए) से ज्यादा और रात के समय दौरान 70 डी बी (ए) नहीं बढ़ेगा जो कि 8 घण्टे की बाहर के लिये दी गई सीमा से काफी नीचे है ।

10.3 पानी की गुणवत्ता

10.3.1. घरेलू पानी का बाहर निकालना

त्करीबन 2 के एल डी सीवेज का पैदा होगा जो कि सैप्टिक टैंक में टरीट करके साफ किया जायेगा ।

10.3.2. औद्योगिक पानी का बाहर निकालना

औद्योगिक पानी का बाहर निकालने जो 10 के एल डी के वाष्पीकरण यंत्रों न टरीट करके साफ किया जायेगा : जो कि आगे प्रक्रिया में इस्तेमाल किया जायेगा, बायलिंग फीड और कूलिंग पानी मेंक-अप में इस्तेमाल किया जायेगा ।

10.4 सालिड कूड़ा

10.4.1 घरेलू कूड़ा

लगभग 2 किलोग्राम/प्रति दिन (25 व्यक्ति गुणा 0.2 किलोग्राम /प्रति व्यक्ति /प्रति दिन जमा 23 व्यक्ति गुणा 0.4 किलो ग्राम /प्रति व्यक्ति / प्रति दिन) घरेलू कूड़ा पैदा होगा । सालिड वेस्ट को सालिड वेस्ट मनेजमेंट नियमावली 2016 और उसके संशोधन के अनुसार निपटाया जायेगा । कल र कोड के बन्द डब्बे हर संवहान में बायोडीगरेडैबल और नान बायोडीगरेडैबल के लिये रखे जायेंगे । बायोडीगरेडैबल वेस्ट डिब्बे का कम्पोस्ट खाईयों में टरीट किया जायेगा । नान- बायोडीगरेडैबल वेस्ट से वेस्ट रीसाईकल को दी जायेगी ।

10.4.2 खतरनाक वेस्ट

प्लाट निम्नलिखित खतरनाक वेस्ट पैदा करेगा । खतरनाक वेस्ट इक्ट्री की जायेगी स्टोर की जायेगी और इस को हैजारडस वेस्ट मनेजमेंट नियमावली 2016 और इस में संशोधन के अनुसार बेबाक किया जायेगा ।

क्रमांक	वेस्ट का नाम	वर्ग	मिकदार	बेबाकी का तरीका
1	इस्तेमाल किया आयल	5.1	0.1 के एल/सालाना	बा-अख्तियारी दोबारा साईकल को
2	अटैपोरेटर सल्लज	35.3	44 टन /सालाना	टी एस डी ई को

11.0 हरेवाई का विकास

ठरित क्षेत्र 1334.18 वर्ग मीटर (33.35 प्रतिशत) प्लाट की जगह के अन्दर दिया जायेगा । वृक्षों की स्थानीय किस्में जो कि मंदगी के कणों को खदेडती हैं का लगाया/रोपा जायेगा । प्लाट के चारों ओर वृक्ष रोपन विशेष पदार्थों और गैस वाले अणुओं को क्षेत्र में प्रभावी होने से रोकने में सहायता करता है जिस के इलावा यह वातावरण सुरक्षा प्रयत्नों में मुख्य भूमिका निभाता है । ठरित पट्टी करेगी :-

- गैसों के निकलने को कम करेगी
- इस की काफी सामर्थ्य है कि अचानक होने वाले बाहर निकलने को रोकें
- वेस्ट पानी के कूडरू में प्रभावी
- परिस्थिती में स्तुलन का रख रखाव करेगी
- काफी हद तक कोलाहल प्रदूषण को कंट्रोल करेगी

• मिट्टी के कटाव को बचायेगी

• सौन्दर्य सम्बन्धी सुधार करेगी

सभी तजवीज किये गई चीजें प्रदूषण सहित करने योग्य हैं इस को अतिरिक्त कि यह एक सौन्दर्य अपील हैं ।

12.0 वातावरण को अनुभवण करने की योजना

वातावरण को अनुभवण करने की योजना वातावरण प्रबन्धन प्रणाली को जल्द जरूरत के साईन के समर्थ बनाती है कि और अधिक कार्य और प्रसार चलते कामों के वातावरण प्रबन्धन, सुधार और संरक्षण के लिये किये जायें । वातावरण को अनुभवण करने के नुकतों को वातावरण प्रभाव जो कि प्रोजेक्ट के आपरेशन के कारण हाने का अदेशा है को विचार कर कौसला किये जायेगें क्योंकि प्रसारण प्रोग्राम का मुख्य दायरा वातावरण हालतों में तबदीलीयों को समय पर और नियमित करना है और वातावरण को बचाने के लिये समय पर कार्यवाई करना है । वातावरण नमूनों का अनुभवण को एम ओ ई एफ एवम् सी सी/ सी पी सी डी/एच पी पी सी डी द्वारा दी गई गाईडलाईनों के अनुसार किया जायेगा । पानी वेस्ट पानी वायु और स्टैक इमीशन के लिये मिन् 2 रीकार्ड नियमित रखे जायेंगे । दूसरे बजट के साथ वातावरण प्रबन्धन के लिये बजट बनाया जायेगा और जरूरत के अनुसार नियमित संशोधित किया जायेगा ।

13.0 खतरों को कम करने के लिये कदम

सब सावधानियों के साथ भी भयंकर दुर्घटना हो सकती है । इस लिये एक सकटकाल योजना किसी भी दुर्घटना की देख रेख के लिये प्लॉट और चारों ओर के क्षेत्रों में बनाई जायेगी । किसी घोर विपत्ति के होने को रोकने के लिये प्लॉट को कई प्रकार के सुरक्षा और विपत्ति कंट्रोल सहूलतें दी जायेगी । इन के इलावा, कई मैटीरियल को हैंडल करने वाली प्रणालियों, भारी सबक यातायात, हाई-टैशन बिजली तारे ओवरहेड करने और कई प्रकार के हैंडलिंग और यातायात प्रणालियों के लिये दुर्घटनाओं का मौका हमेशा रहता है ।

14.0 जनतक सलाह मशवरा

यूनिट को स्थापित करने के लिये जनता की सुनवाई हिमाचल प्रदेश राज्य प्रदूषण बोर्ड (एच पी एस पी सी डी) द्वारा की जायेगी । इस की कार्यवाही आखरी ई आई ए रीपोर्ट में दर्ज की जायेगी ।

15.0 प्रोजेक्ट के लाभ

प्रोजेक्ट देश में स्टील उत्पाद की मांग और सपलाई फर्क को पूरा करेगी । प्रस्तावित प्रोजेक्ट राज्य सरकार के लिये अतिरिक्त मालगुजारी भी अर्जित करेगा । फारमलडेहाईड की उपलब्धता कई प्रकार की

एम एस एम ई उद्योगों और देश के सर्व आर्थिक परिवेश को बढ़ावा देगी । प्रोजेक्ट लोगों के लिये अतिरिक्त प्रत्यक्ष/अप्रत्यक्ष रोजगार पैदा करेगा । स्थानीय लोगों को निर्माण और काम चलाने के मरहले के दौरान रोजगार के लिये तरजीह दी जायेगी ।

16.0 इक्टटी वातावरणीय जिम्मेदारी (सी ई आर)

मैसरज फील आरगैनिक प्रोडक्ट्स का मिस्टर दशिन्द्र कुमार धीर (पार्टनर) सीईआर गतिविधियों को लागू करने के लिये जिम्मेदार होगा । प्रोजेक्ट की कुल अनुमानित लागत रु. 441.25 लाख है । इस तरह रु. 4 लाख (प्रोजेक्ट लागत का तकरीबन 1 प्रतिशत) सम्बन्धत यू एल बीज/पी आर आईज (शहरी स्थानिय अदारे/पंचायती राज अदारे) के साथ सलाह मशवरे में सी ई आर गतिविधियों पर वातावरण साईंस एवम! तकनीक एन पी सरकार के विभाग द्वारा खर्च किये जायेंगे । इस तरह निम्नलिखित गतिविधियों सी ई आर के अधीन कवर करनेद प्रस्ताव किया जायेगा :

सूची 4.8: सी ई आर गतिविधियाँ

क्रमांक	गतिविधियाँ	राशि
1	प्लास्टिक वेस्ट शरेडर मशीन को लगाना	रु. 4 लाख

आगे, जनतक सुनवाई के दौरान उठे मुद्दों को सी ई आर के अधीन लिया जायेगा

17.0 वातावरण प्रबन्धकीये योजना

वातावरण प्रबन्धकीये विभाग इस प्रस्तावित प्रोजेक्ट का ई एम पी लागू करेगी । ई आई ए रिपोर्ट में दी सभी सिफारशें हव में व्यवसाय सेहत, खतरा कम करने की ओर सुरक्षा की योजना शामिल है को इक्टता किया जायेगा । वातावरण प्रबन्धकीये योजना के लिये पूजीगत लागत का अनुमान रु. 69.5 लाख को लगाया है और हर साल की बार 2 होने वाली लागत रु. 8 लाख होगी । प्लाट जगह के अन्दर और बाहर ग्रीनबैल्ट और ग्रीनरी विकास ई एम डी द्वारा काम तेज किया जायेगा । केन्द्रीय प्रदूषण कंट्रोल बोर्ड (सी पी सी बी) द्वारा ग्रीनबैल्ट विकास पर जारी की गई गाईडलाईनों का अनुसरण किया जायेगा । कर्मचारियों के लिये वातावरण जागरूकता अभियान चलाया जायेगा । ई एम डी प्लाट के अन्दर सफाई यकीनी बनायेगी ।
