

# Environmental Impact Assessment (EIA) Report

## CANTER PVT LTD

(DYEING UNIT & ETP)

AT 42-KM Ferozepur Road, Mouza Mustafabad on Bholekey Road Tehsil  
& District Kasur



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## **EXECUTIVE SUMMARY**

### **1. Title of the Project**

This report presents the findings of the Environmental Impact Assessment study of Canter Pvt Ltd.

### **2. Location of the Projects**

The proposed project is located at 42-KM Ferozpur Road, on Bholekey Road Mouza Mustafabad Tehsil & District Kasur.

### **3. Name of the Proponent**

The proponent of the proposed project is Aamir Parvez S/O Pervez Akhtar R/O House No: 947, Muhallah Shadman Colony No: 1 Lahore.

### **4. Name of the Organization Preparing Report**

To comply with IEE/EIA regulations 2022 as per Punjab Environmental Protection (Amendment) Act (PEPA) 2012, the proponent Canter Pvt Ltd has entrusted the *Safe Enviro-Solutions*.

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### **5. A Brief Outline of the Proposal**

The Proponent intends to establish Dyeing unit & ETP at 42-KM Ferozpur Road, on Bholekey Road Tehsil & District Kasur. The total area of the project is 26K-6M. The proposed covered area of the project is 37128.00 SFT. Exhaust Dyeing Machines will be installed for fabric dyeing in this unit having quantity will be 55. The Dyeing capacity of the proposed project will be 3 Tons/day. The said unit will be used for dyeing of woven fabric mainly. The effluent Treatment Plant will also be installed for dyeing wastewater treatment having capacity will be 240 M<sup>3</sup>/day (10M<sup>3</sup>/hr). The estimated cost of the project is PKR 150 Million.

Batch dyeing (exhaust dyeing) process will be used. The method involves the gradual transfer of dye from a dye bath to the textile material in the same piece of equipment

Dyeing is the application of dyes or pigments on textile materials such as fibers, yarns, and fabrics with the goal of achieving color with desired color fastness. Dyeing is normally

done in a special solution containing dyes and particular chemical material. Dye molecules are fixed to the fiber by absorption, diffusion, or bonding with temperature and time being key controlling factors. The bond between dye molecule and fiber may be strong or weak, depending on the dye used.

The scope of the current EIA Study aims at collection and scrutinization of data related to physical, biological and socio-economic environment of the project area and to prepare the baseline environmental profile. It also aims at the identification, prediction and evaluation of the possible environmental impacts of the proposed project on its immediate surroundings on both short and long-term basis. Based on the nature and levels of those impacts, appropriate mitigation measures are proposed in this IEE Report. This is the legal requirement to submit before and approve the IEE/EIA of the said project from Environmental Protection Agency (EPA) according to Section 12 of Punjab Environmental Protection (Amendment) Act, 2012, which states that:

*“No proponent of a Project shall commence construction or operation unless he has filed with the Provincial Agency an Environmental Impact Assessment, where the Project is likely to cause an adverse environmental effect, an environmental impact assessment, and has obtained from the Provincial Agency approval in respect thereof.”*

## **6. Methodology**

The study was conducted in accordance with Environmental Protection Agency (EPA), Government of Pakistan (GOP) Guidelines, 2022. The study was based on both primary and secondary data and information. Discussions were held with stakeholders including government officials, community representatives and a wide range of local residents. The main purpose of this approach is to obtain a fair impression on the people’s perceptions of the project and its environmental impacts.

To accomplish the job in time and to produce a quality report, a proper methodology was adopted as follows:

- Meetings and discussions were held among the members of the EIA consulting team, design engineers and proponent. This activity was aimed at achieving a common ground of understanding of various issues of the study.

- Planning was carried out to assess data requirements and their sources; time schedules and responsibilities for their collection; logistics and facilitation needs for the execution of the data acquisition plan.
- Primary and secondary data were collected through observations during the field survey, environmental monitoring in the field, concerned departments and published materials to establish baseline profile for physical, biological and socio- economic conditions.
- The impacts of the project on the physical, biological and socio-economic environment prevalent in the project area were visualized at the design, construction and operational phases.
- The adequate mitigation measures and implementation mechanisms were proposed so that the proponent could incorporate them beforehand in the design phase.

## 7. The Major Impacts

The study team reviewed the Project with the aim to determine the likely impacts of the project on the environmental and socio-economic conditions of the area. All the necessary elements of the project were reviewed and compared with the existing conditions in the vicinity of the Project Area.

- During the construction vehicles and machinery are employed. These machines generate some dust and smoke temporarily due to which PM<sub>10</sub> and PM<sub>2.5</sub> levels in the ambient air may exceed the permissible limits.
- Safety issues could also arise for workers during construction phase of the project.
- Solid waste will be produced during construction phase it may compromise the aesthetics of the area and could cause the hindrance for movement of transportation temporarily.
- The domestic wastewater will be generated during the operational phase of the project.
- Odor may also be generated if proper housekeeping will not be ensured which may affect health of workers.

## 8. Recommendations for Mitigation Measures

Results of the IEE Study have shown that overall the project is environmentally feasible. Most of the environmental impacts are moderate adverse in nature except the solid waste generation during the erection of the development footprint, the drainage system, the sewage plant and effluent disposal system, and the use of the land as a final recipient of runoff and effluent. However, these impacts can be mitigated by the implementation of Environmental

Management Plan (EMP). Environmental Management Plan identifies monitoring needs and implementation on Environmental Management Plan is also recommended.

The following measures are recommended for the project:

- Sprinkling of water should be done to avoid soil erosion during the construction phase. However, it is short time impact, which would be stopped on completion of the construction work.
- The impact of noise will be mitigated by confining the excessive noise activities.
- Water sprinklers will be used for the suppression of dust.
- Fire Hydrants, Fire Alarms, Gas Detectors & Fire Extinguisher's will be installed by the proponent in this unit for overcoming the hazard of fire.
- Traffic movement plan should be formulated to avoid any issue for locals
- The effluent Treatment Plant will also be installed for dyeing wastewater treatment having capacity will be 240 M3/day (10M3/hr).

## 9. Proposed monitoring

Environmental monitoring has been proposed for construction and operation phase of the project. During construction phase, the construction contractor will be responsible for annually monitoring of all environmental parameters (ambient air, ground water and noise level). One (1) environmental monitoring report will be prepared on monthly basis and one (1) comprehensive report will be prepared at the end of the construction phase and will be submitted to Environmental Protection Agency Punjab.

Whereas biannually and quarterly monitoring of ambient air, ground water and noise level will be carried out by the proponent during operation phase of the project. One (1) environmental monitoring report will be prepared biannually and one (1) comprehensive report will be prepared and submitted to the EPA-Punjab. Contents of the final report will include results of environmental monitoring in comparison to the standards for the various parameters, location and sampling time along with recommendations for the future projects.

Sr. No	Monitoring Parameter	Monitoring Location	Remarks
<b>A. Construction Stage</b>			

1.	Noise	Construction Vehicle/ Machinery/ generators/Welding work	Construction vehicles / machinery / generators will be checked regularly for noise level by the contractor during construction phase.
2.	Smoke Emissions (CO, NO <sub>x</sub> , PM, SO <sub>2</sub> etc.)	Construction Vehicle/ Machinery/ generators	Construction vehicles / machinery / generators will be checked regularly for smoke emissions by the contractor during construction phase.
3.	Water Quality As per PEQS	Ground Water/ Surface Water	Sampling and laboratory testing will be done on monthly basis during the construction.
4.	Solid Waste	Worker Camp/ Construction Site	Collection of solid waste shall be checked regularly by the contractor during construction phase.
<b>B. Operation Stage</b>			
1.	Security	Plant area	Security arrangement will be made.
2.	Wastewater	WWTP	Effluent testing
3.	Air Quality	Boiler	Emissions Monitoring
2.	HSE Plan	---	Health, safety and Environmental will be monitored on daily basis.
3.	Indoor Gaseous Emissions	Generators room	Will be carried out on quarterly basis from the stacks of generator

**GLOSSARY**

<b>Words</b>	<b>Dictionary</b>
Domestic wastewater	Wastewater from sanitary uses
Residential	For living of people
Economically viable	Suitable in monetary terms
Endangered species	Which will extinct in near future
Threatened species	Those in danger of extinction
Aesthetic beauty	Scenic beauty of the area
Ambient	Surrounding of all sides
Topography	Physical features of the site
Silence zone	Where transmission/sound cannot be received
Anticipated Impacts	Expected Impacts
Baseline	Conditions prevailing at the time of study or before initiation of any project
Environment Budget	Monetary assets reserve for Environmental activity
Evaluation	Assessment
Fauna	Variety of Animals found in an area
Flora	Variety of Plants found in an area
Million	10,00,000
Mitigation Measures	Measures aimed to curtail or entirely control an adverse impact or to compensate some loss or cause additional improvements
Orientation Session	Direction Session



Nuisance	Annoyance
pH	Negative log of hydrogen ion concentration
Potential Issue	Problems likely to arise
Proposed Project	Planned activity
Residual Impacts	Impacts left behind after implementation of the mitigation measures
Significant	Important

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# INTRODUCTION

## 1.1 Scope of the Study

The scope of this IEE study aims at collection and scrutinization of data related to physical, biological and socio-economic environment of the project area and to prepare the baseline environmental profile. It also aims at the identification, prediction and evaluation of the possible environmental impacts of the proposed project on its immediate surroundings on both short and long-term basis. Based on the nature and levels of those impacts, appropriate mitigation measures are proposed in this IEE Report.

## 1.2 Study Objectives

The specific objective of the EIA study includes the following:

- Collection and scrutinization of data related to physical, biological and socio-economic environment of the project area and to prepare baseline environmental profile;
- Identification, prediction and evaluation of potential environmental impacts of the proposed project;
- Suggesting mitigation measures to minimize the adverse impacts of the project; and
- Preparation of an Environmental Management Plan (EMP).

## 1.3 Purpose of the Report

An Environmental Impact Assessment (EIA) study report has been prepared to identify and assess the significant environmental impacts likely to occur due to proposed project construction along with environmental impact statement followed by appropriate Environmental Management Plan. IEE of this proposed project has been carried out in order to conform to the requirements of the **Punjab Environmental Protection Act, 1997, amended in 2012 under section 12** of which no development activity can be initiated anywhere in Punjab without filing before the designated government agency an Environmental Impact Assessment or an Environmental Impact Assessment, as may be required and having an NOC for construction and operation.

The purpose of this IEE is to predict all the probable adverse environmental impacts and plan adequate mitigation measures for eliminating, controlling or compensating them and drafting the complete institutional framework for their implementation.



## 1.4 Identification of the Project and Proponent.

The proponent of the proposed project is Aamir Parvez S/O Pervez Akhtar. According to the Punjab Environmental Protection Act 1997 (Amended 2012) and its interpretation as per Review of IEE & EIA Regulations, 2022 for filling, review and approval of environmental assessments, the construction/development of this proposed Dyeing Unit, falls **Schedule II-Category B (6) Category i.e. “Textile Units comprising of Dyeing & Printing” of IEE/EIA review regulations 2022**. Thus, an EIA Report is being prepared and submitted accordingly for approval.

## 1.5 Detail of Environmental Consultants

This IEE study has been carried out by Safe Enviro-Solutions. This company comprises environmental engineers, Senior Environmentalists, sociologist, chemical engineers and architects having diversified experience in national system and assignments. The company address and contact information is as follow:

**Office: 99 Burj/Al-Saeed building Room #110, Main Ferozpur Road, Ichra, Lahore.**

**Phone: 0336-8779155**

**Email: [safe.envirosolutions@gmail.com](mailto:safe.envirosolutions@gmail.com)**

**Table 1: Detail of team conducting IEE study with qualification and position in team.**

Name	Qualification	Position in the IEE Team
<b>Muhammad Rehman Majeed</b>	M.Phil (Environmental Science) GCU Lahore	Project Incharge And Supervisor
<b>Ammara Anwar</b>	M.Phil Environmental Science PU-Lahore	Team Leader and Coordinator (Author of the Report)
<b>Mohsin Ali</b>	M. Phil Environmental Science GCU Lahore	Senior Environmentalist (Field Analyst)
<b>Muhammad Maqbool</b>	PhD Scholar Chemistry (UMT Lahore)	Senior Chemist

<b>Muhammad Zeeshan</b>	PhD Scholar Botany (PU Lahore)	Senior Botanist
<b>Anum Waheed</b>	BS (Hons) Environmental Science (GCU Lahore)	Research Associate (Author of the Report)

*\*Only the main roles of the team members are given. However, their role was not restricted to these, rather it also includes many other studies in their respective fields in the context of this EIA studies.*

## 1.6 Brief Description of Nature, Size and Location of Project

### Title of the Project

This report presents the findings of the Environmental Impact Assessment study of Canter Pvt Ltd(Dyeing Unit)

### Location of the Project

The proposed project is located at 42-KM Ferozepur Road, on Bholekey Road Tehsil & District Kasur.

### A Brief Description of the Project

The Proponent intends to construct proposed Dyeing unit & ETP at 42-KM Ferozepur Road, on Bholekey Road Tehsil & District Kasur. The total area of the project is 26K-6M. The total proposed covered area of the project is 37128.00 SFT. The estimated cost of the project is PKR 150 Million. The Dyeing capacity of the proposed project will be 3 Tons/day. Exhaust Dyeing Machines will be installed for fabric dyeing in this unit having quantity will be 55. The said unit will be used for dyeing of woven fabric mainly. The effluent Treatment Plant will also be installed for dyeing wastewater treatment having capacity will be 240 M3/day (10M3/hr).

## 1.9) Structure of the Report

**Section 1:** Introduction briefly presents the project background, objectives, methodology and need of the IEE study.

**Section 2:** Policy, Legal and Administrative Framework comprise policy guidelines, statutory obligations and roles of institutions concerning EIA study of the proposed Project.

**Section 3:** Description of the Project furnishes information about the location of the proposed Project, cost and size of the project, its major components and alternatives considered for the proposed project to select at the preferred alternative for detailed environmental assessment.

**Section 4:** Environmental Baseline Profile establishes baseline conditions for physical, biological and socio-economic conditions prevalent in the project area.

**Section 5:** Screening of Potential Environmental Impacts and Mitigation Measures identifies, predicts and evaluates impacts of the project activities during the construction and operation stages and deals with the measures proposed to mitigate potential environmental impacts of the proposed project.

**Section 6:** Environmental Management and Monitoring Plan outlines institutional arrangements for the implementation of the proposed mitigation measures, training needs of the staff for implementation of the mitigation measures, monitoring requirements and monitoring cost.

**Section 7:** Conclusions and Recommendations provide the outcome of the study and major observations of EIA and suggestions for environmental management and pollution control.

**Section 8:** References.

## **Screening:**

The proponent intends to establish Dyeing unit at 42-KM Ferozepur Road, on Bholekey Road Tehsil & District Kasur. The total area of the plot is 26K-6M.

*According to the Punjab Environmental Protection Act 1997 (Amended 2012) and its interpretation as per Review of IEE & EIA Regulations, 2022 for filling, review and approval of environmental assessments, dyeing unit, falls in the Schedule II-Category B (6) Category i.e. "Textile Units comprising of Dyeing & Printing" of IEE/EIA review regulations 2022. Thus, an EIA Report is being prepared and submitted accordingly for approval .*

*Further, the client is required to fulfill the legal requirements of the Section-12 of the Punjab Environment Protection Act 1997(Amended 2012).*

# Scoping:

## SPATIAL AND TEMPORAL BOUNDARIES OF ENVIRONMENTAL ASSESSMENT

Project site is open land. After its development with time nature of area will change from open land to project site. Already operation of many Industrial units is being taking place near around. Currently there is no significant population center present nearby project. The current project site is 5 kilometers from population centers and all the parameters are within PEQS.



### IMPORTANT ISSUES AND CONCERN RAISED DURING CONSULTATION

During consultation it was observed that maximum of people was in favor of project and following issues and concerns were raised which have also been discussed in length in Chapter 9 Stakeholder Consultation:

- Locals should be preferred for the job opportunities.
- Wastewater should be treated prior to final disposal.

- Solid waste should be managed effectively by adopting the standard practices of the area.
- Cleanliness of the area should be ensured.
- An effective EMMP should be designed and enforced with true spirit.
- Health of the workers should be ensured.
- Workers should be hired from local community.
- Indigenous trees around the facility should be planted to control air pollution.

#### **SIGNIFICANT IMPACTS AND FACTORS TO BE DETERMINED**

Main impacts and factors to be determined are;

- Site Security
- Traffic Management
- Hygiene management
- Community impacts
- Control Air emissions
- Job opportunities for locals
- Confined noisy activities
- Resource conservation
- Avoid excessive water consumption
- Energy efficient techniques must be adopted
- Proper site restoration after construction
- Tree plantation at designated green areas
- Emergency preparedness

# DESCRIPTION OF THE PROJECT

### 3.2 Type and Category of the Project

The proponent of the proposed project is Aamir Parvez S/O Pervez Akhtar. According to the Punjab Environmental Protection Act 1997 (Amended 2012) and its interpretation as per Review of IEE & EIA Regulations, 2022 for filling, review and approval of environmental assessments, the construction/development of this unit, falls in the **B (6) Category i.e. “Textile Units comprising of Dyeing & Printing” of IEE/EIA review regulations 2022**. **Thus, an EIA Report is being prepared and submitted accordingly for approval.**

### 3.3 Objectives of the Proposed Project

- To Dye the Fabric
- To increase the availability of dyeing services for others sources in the area
- To create job opportunities for the locals
- To raise the socioeconomic status of the area

### 3.4 Alternatives

From the point of view of locating an industry the features, which are considered extremely important, are:

- Availability of suitable land.
- Availability of required utilities and infrastructure
- Road access to the site for easy transportation of materials and finished goods.
- Optimum investment requirement for the development of the infrastructure.

#### 3.4.1 Do Nothing Alternative

Do-nothing alternative is not feasible due to the following reasons

- Withdraw the opportunity of employment for the locals.
- The site is owned by the owner. Hence, it is suitable for the development of this project.
- The selected site has higher potential of revenue generation.

#### 3.4.2 Technology Alternatives

The technology being offered by Canter Pvt Ltd (Dyeing Unit) is considered to be ‘state of the art’ in terms of being environment friendly, efficiency modern & process



design for similar capacity of units.

The new plant will be built according to the applicable Best Available Technologies (BAT) defined for similar industry.

### **3.4.3 Site Alternative**

The proposed location was determined to be the most convenient location in proximity to the market and domestic supply chain. The proposed site has least environmental & social impacts.

#### **3.4.4 ENVIRONMENTAL ALTERNATIVES, THEIR SELECTION AND REJECTION CRITERIA:**

Every development project causes alteration in the existing environment inevitably that can be positive as well as negative. The negative environmental impacts of the proposed factory of Canter Pvt Ltd (Dyeing Unit) can be gaseous emission, increased noise levels, excessive water usage, , and surface water contamination etc. The ‘no-go’ alternative, also referred as the ‘no-action’ alternative or ‘zero-alternative’, can be a consideration in this case. It assumes that the activity does not go ahead, implying a continuation of the current situation or the status quo. It is basically a consideration of the original and undisturbed environment without any development. This option is considered to ensure that all possibilities have been taken into consideration before deciding on a final course of action and also to provide a baseline situation against which the other suggested alternatives can be measured.

In a situation where negative environmental impacts have high significance, the ‘no-go’ alternative takes on particular importance. In some cases, the ‘no-go’ alternative may be the only realistic alternative and then it has a critical role to play. It is not true to assume that the ‘no-go’ alternative is necessarily the best from an environmental perspective. In many cases, expansions and upgrades of existing industries (the ‘go’ alternative) permit the implementation of technological improvements such as the replacement of outdated equipment that leads to reduced emissions to the air or water, in addition to the primary aim of increased production capacity.

The ‘no-go’ alternative provides the means to compare the impacts of project alternatives with the scenario of a project not going ahead. In evaluating the ‘no-go’ alternative here; the benefits of the proposed project are more valued for the country.

#### **3.4.5. Economic Alternatives, their Selection and Rejection Criteria**

Economic alternatives were considered taking into consideration the capital and operational costs for the proposed unit. Land cost, infrastructure cost and machinery cost were taken into account as the deciding economic factor. Accordingly, land is selected in



an already under proponent ownership.

Also, state of the art machinery will be employed considering it as one-time investment and thus minimizing the maintenance cost during the operational phase. The technology selected for installation of above stated project is costly than a few available alternatives but less costly as compared to majority of the other available treatment technologies, but it is most efficient and convenient to use.

### **3.5 Location and Site Layout of the Project**

#### **3.5.1 Location of the Project**

##### **Location of the Project**

The proposed project is located at 42-KM Ferozepur Road, on Bholekey Road Tehsil & District Kasur.

The project is surrounded by the followings

<b><i>Front</i></b>	Bholeke Road
<b><i>Back</i></b>	Open Land
<b><i>Left</i></b>	Industry
<b><i>Right</i></b>	Agri Land



**Fig: Google Map of Project Site**

### 3.6 Road access

Main roads and markets are in easy and close access of the project site. The propose Canter Pvt Ltd (Dyeing Unit) site is situated on in easy access with Bholeke Road which connects with Main Lahore Kasur Road.

### 3.7 Project Administrative Jurisdiction

The proposed project lies in the District Kasur in Punjab Province.

### 3.8 Vegetation Features of the Site

Land is clear and there are no plants or vegetation on site. Significant or well-shaped trees and shrubs are not present on the project site. There is neither the biologically important or endangered species of plant were present and nor the plant or vegetation of any

significance stands at the site to be dismantled. However, various local plants will be grown at the project site in the open areas and grounds.

### **3.9 Cost and Magnitude of the Project**

The total cost of the project would be around PKR 150 Million. The project includes the site survey, geotechnical investigations, site clearing work, infrastructure work, structural work, electrical and mechanical works and Activities of construction includes the following:

- a) Demarcation of the Area for various facilities
- b) Infrastructure works (Pathways, water supply, sewerage and drainage, gas, electrical works etc.)
- c) Installation of Dyeing machine & Water tanks.
- d) Fire Fighting Arrangements

### **3.10 Schedule of Implementation**

#### **a- Phase-I (Start-up Phase)**

Phase -1 is the start-up phase, which involves construction of boundary wall around the entire site. Most of the NOC's from various departments are in approval process and this report has been prepared to obtain NOC from EPA Punjab. It will take 2-3 months.

#### **b- Phase-II (Main implementation Phase)**

In phase II, required tanks & machinery will be purchased for installation in this unit. During this phase, machinery will be brought on site and installed. It will take 3 months.

#### **c- Phase-III (Wrap-up Phase)**

Phase-III is the wrap-up phase. In this phase, all outstanding activities will be completed, required staff will be recruited, and contracts with suppliers and purchasers will also be signed after which the operational phase finally commenced. It will take 3 months.

### **3.11 DESCRIPTION OF THE PROJECT:**

The Proponent intends to construct proposed Dyeing unit & ETP at 42-KM Ferozpur Road, on Bholekey Road Tehsil & District Kasur. The total area of the project is 26K-6M. The total covered area of the project is 37128.00 SFT. The estimated cost of the project is PKR 150 Million. The Dyeing capacity of the proposed project will be 3 Tons/day. Exhaust Dyeing Machines will be installed for fabric dyeing in this unit having quantity will be 55. The said unit will be used for dyeing of woven fabric mainly. The effluent Treatment Plant will also be installed for dyeing wastewater treatment having capacity will be 240 M3/day (10M3/hr).

#### **Exhaust Dyeing in HT Machines:**

Exhaust dyeing HT machines will be installed for dyeing process. Dyes use for dyeing fabric in Jig or Exhaust dyeing machine which is suitable for woven fabric because Exhaust exert considerable lengthwise tension on the fabric. This is also particularly suitable for cellulosic fibers because the natural dyes generally do not exhaust well and the jig works with an exceedingly low liquor ratio. Since the fabric is handled in open-width, a jig is very suitable for fabrics which crease when dyed in rope form. There are mainly two types of Exhaust dyeing machine for dyeing woven fabrics with dyes.

#### **Dyeing Process with Exhaust Dyeing Machine:**

The Exhaust machines have two main rollers which revolve on smooth bearings and are attached to with a suitable driving mechanism, which can be reversed when required. The fabric is wound on one of the main rollers and fed from the other. The fabric move from one roller to the other through the dye liquor trough located at the lower part of the machine. There are various arrangement of guide rollers at the bottom of liquor trough, and during each passage the cloth passes around these guide rollers.

The concentrated dye liquor is usually introduced directly into the dye bath in two equal portions, which are added just before commencing the first and second ends. The liquor is agitated by the movement of the fabric through the dye bath. Several horizontal spray pipes are fitted across the full width of the trough in order to expedite fabric rinsing.

Live steam injected into the bottom of the trough through a perforated pipe across the width of the jig heats the liquor. Some modern jigs also have heat exchangers for indirect heating.



Covering the top of the jig minimizes the heat loss to the atmosphere, keeps the temperature uniform on all parts of the fabric and minimizes exposure of the liquor and the cloth to air. Minimizing exposure to air is important when using sulphur or vat dyes since these dyes can be oxidized by atmospheric oxygen.

A few meters of leading fabric, similar in construction to the cloth under process, is stitched to each end of the cloth batch, to allow the entire length of the fabric to pass through the dye bath during the dyeing process. When jig processing is completed, the fabric is run onto an A-frame via a nip or suction device to remove extraneous water during unloading.

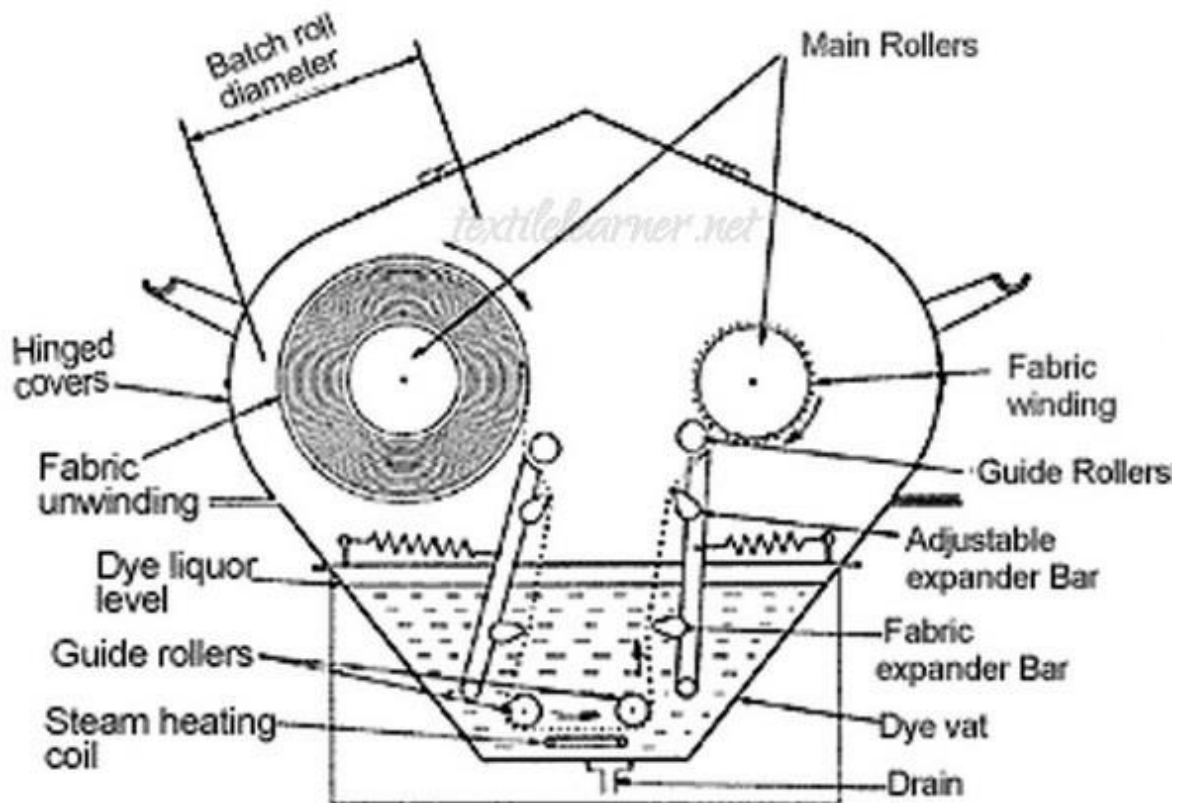
### **Chemicals Used in Exhaust Dyeing:**

Chemicals/materials used	Used in average
Wetting agent	0.25-0.5 g/L
Detergent	0.5-1 g/L
Dye stuff (reactive, sulphur, etc.)	Differs depend on the shade of fabric
Caustic	1.323 g/L
Soda ash	5 g/L
Reducing agent	9-10%
Oxidizing agent	2 g/L

Acid	2 g/L
Compressed air	As required

### Advantages of Exhaust Dyeing Machine:

1. The cloth is dyed in open width form in textile industry
2. The material to liquor ratio is 1:3, which is used for dyed fabric in textile industry
3. Liquor ratio 1:4, which saves huge amount of chemical cost and steam cost
4. Less chemical lose for woven fabric in textile industry
5. No need training to operate how to dye fabric





### 3.13 Features of the project

#### 3.14 Supplies

##### a) Water supply

The underground water of this area is fit for drinking and domestic proposes. The said project intended to install his own tube wells for the extraction of the groundwater's. The features of water supply are as follow:

##### b) Electricity

Source of power will be WAPDA. The electricity transformer connection capacity will be 500 KVA. For backup system proponent is intended to install his own stand by electricity generators as well

For Heating Boiler & Oil Heaters will be used.

##### c) Manpower

On the proposed project site 15-20 workers will be present daily throughout the construction period of proposed project. While during operational phase 30-40 workers will be hired by the management.

##### d) Fire Fighting Arrangements

The following firefighting equipment will be installed in the said **Canter Pvt Ltd (Dyeing Unit)** for mitigating the impact associated with the fire hazard. The major firefighting equipment is given below.

a) *Fire Buckets, Fire Extinguisher QTY 06*

b) *Smoke detector QTY 54*

c) *Fire Extinguisher QTY 01*

*The following equipment will also be installed.*

<u>EQUIPMENT</u>	<u>QUANTITY</u>
Fire Trolley	02
Showering Pump	01
Fire Pump (750GPM)	01
HRV	11
Pressure Gauge	10
Jockey Pump	01

### **3.15 Management of Wastewater**

The process wastewater from dyeing process will be treated with WWTP, which will be collected through sewerage system and it will be disposed of in nearby Rohi Nala drain located in front of project.

### **3.16 Solid Waste Management**

Waste generated during construction would include mostly construction material (mainly steel and wood), empty cement bags, excavated earth and general packaging waste. Waste will be stored within the site until transfer to the waste disposal site. Domestic solid waste during operation phase will be collected at solid waste collection point and from that point it will be carried out by TMA for disposal.

### **3.17 Government Approvals**

Management has applied for Environmental Approval and after getting Environmental Approval, they will apply for other required approvals.

# DESCRIPTION OF THE ENVIRONMENT



## 4.1 General

For any development project, the prevailing environmental conditions need to be assessed prior to the preliminary stages of planning, designing and execution of the project. Identification of physical, ecological and social aspects of environment and collection of relevant data is essentially important for the evaluation of impacts as well as for the suggestion of adequate mitigation measures which forms the basis of the Initial Environmental Impact Examination exercise.

The existing environmental conditions of the proposed project have been considered with respect to physical, biological and socio-economic aspects. Information has been collected from variety of sources, including published literature, field observations and surveys conducted specifically for this project have been analyzed for this study.

## 4.2 Methodology

For baseline data collection, following sequences of various techniques has been adopted. These techniques were chosen because of their pragmatic application in very short span of time.

1. Reconnaissance survey;
2. Field investigations/ Surveys;
3. Meteorological analysis;
4. Environmental analysis (air, noise and water quality surveys);
5. Collection and review of secondary environmental and social data; and
6. Basic parameters collection from published sources.

### 4.2.1 Reconnaissance Survey

Reconnaissance survey of the proposed project site was conducted on NOV, 2023 to for the collection of preliminary information about the flora, fauna and existing human intervention along with ecological characteristics. Reconnaissance survey helped us to delineate the ecological habitats and to explore the diversified ecological rich environment.

This information has become the baseline information for the detailed survey that specifically targets those areas which are going to be affected by the implementation of the



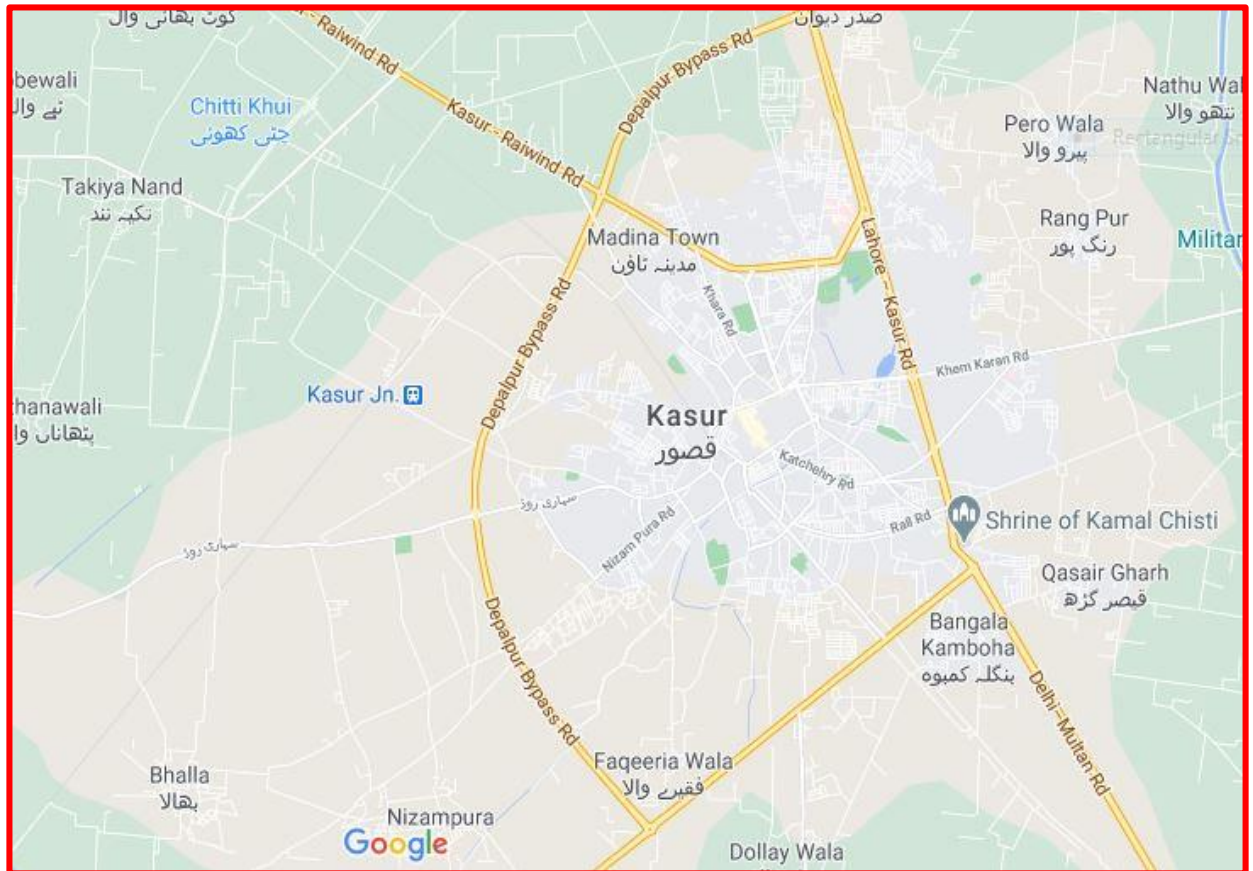
proposed project. As a result of this survey, basic plants and animals' families were identified that actually prevailing in the associated habitats.

### **4.3 Physical Environment**

This part examines the physical resources such as topography, soil, climate, surface and ground water resources and quality, ambient air quality and geology of not only the Project site but also the city as a whole to assess whether the project under assessment can or does have any impacts on any of these parameters. The description of physical environment of project site is present in the following sub sections.

### **4.3 Physical Environment**

Kasur is situated at a distance of about 55 kilo meters towards South of Lahore on the Lahore Ferozepur Road. The coordinates of the city are following 31°55'01"N 74°27'01"E. The district has Indian Territory on the South and East across the river Sutlej, Lahore district on the North, Okara district on South-West and Sheikhpura district on North West. District Kasur is spread over an area of 3,995 square kilo meters. Kasur District lies between the river Sutlej which flows along its boundaries with India and river Ravi which flows its boundary with Nankana Sahib District. The districts may be divided into two parts, a low lying or riverine area along the two bordering rivers and upland, away from the rivers. The riverine area is generally inundating during monsoon season. The water level in this area is higher than in the upland. The soil is sandy. The upland is flat plains sloping from north-west to south-west. The general height of the area is from 150 to 200 meters above the sea level.

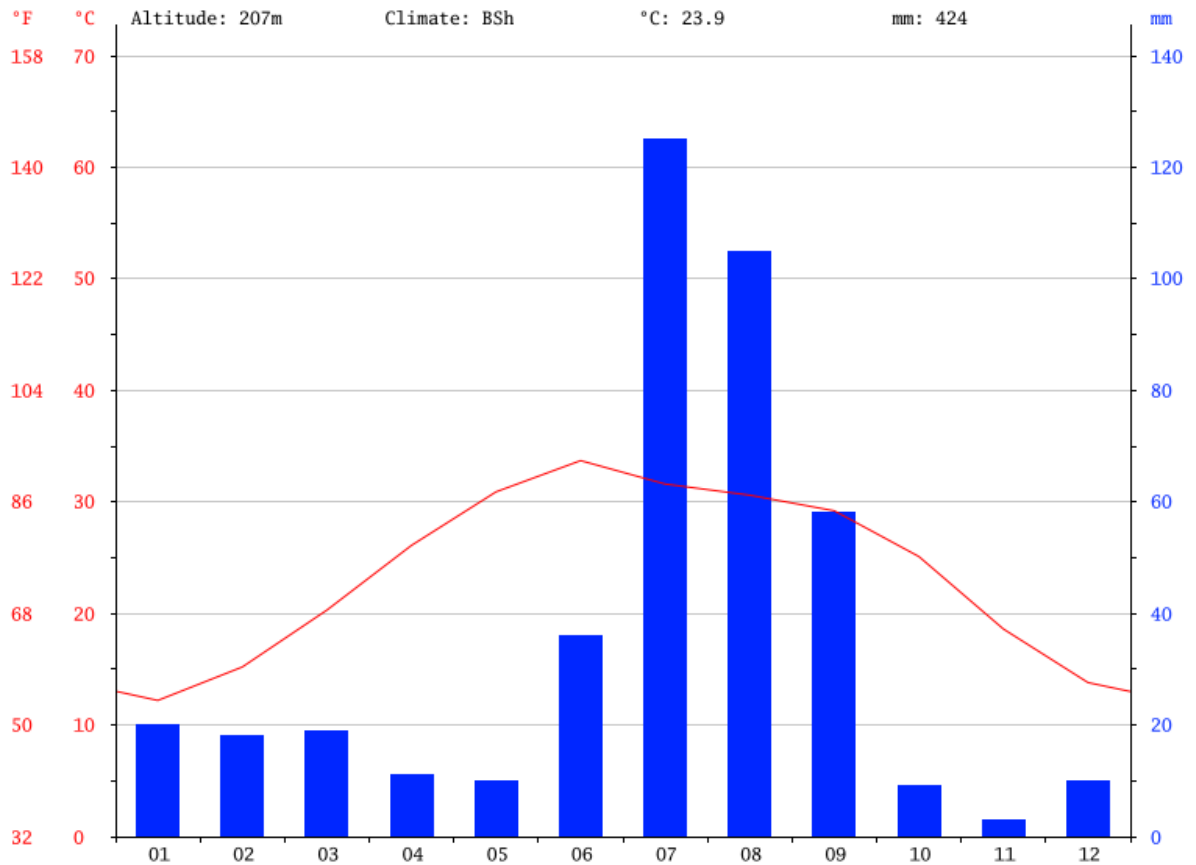


### 4.3.2 Soil

The soils of the project are characterized as alluvium deposits of sandy-loam and sandy-silt. These soils are generally well drained but due to vast irrigation networks some signs of water logging and salinity have been observed in the area. Water logging and salinity has affected a large area of the district making the underground water brackish.

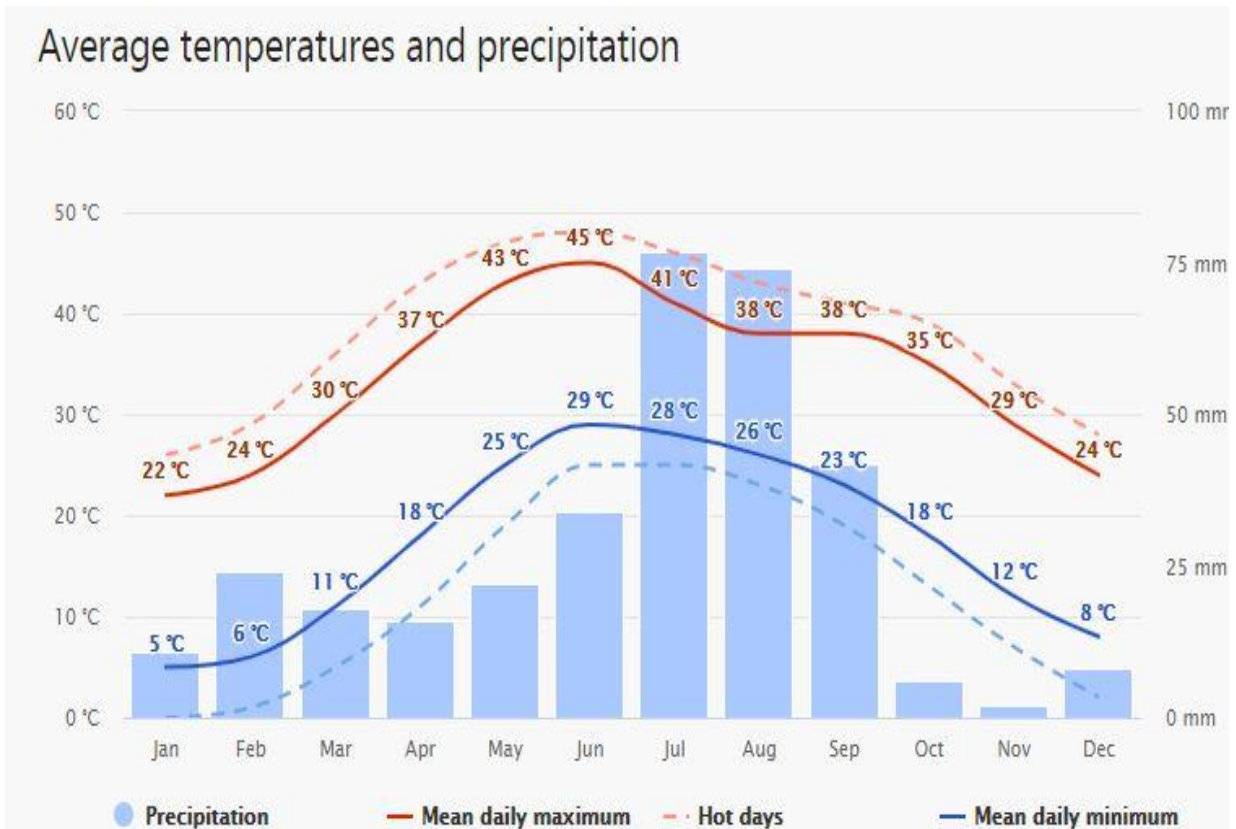
### 4.3.3 Climate

A short description is given hereunder to present the climograph of the area:



### a) Temperature

At an average temperature of 33.7 °C, June is the hottest month of the year. The lowest average temperatures in the year occur in January, when it is around 12.2 °C. Between the driest and wettest months, the difference in precipitation is 122 mm. The summer season starts towards the end of April and continues till September. The winter begins in November and lasts till February. The spring season exists during March and April and is pleasant.



### b) Humidity

Monthly relative humidity for this area has been worked out as 55.0%. The maximum recorded humidity for the district is 91.0% while the minimum humidity is 35.0%.

### c) Precipitation

Precipitation is the lowest in November, with an average of 3 mm. The greatest amount of precipitation occurs in July, with an average of 125 mm. The variation in temperatures throughout the year is 21.5 °C.

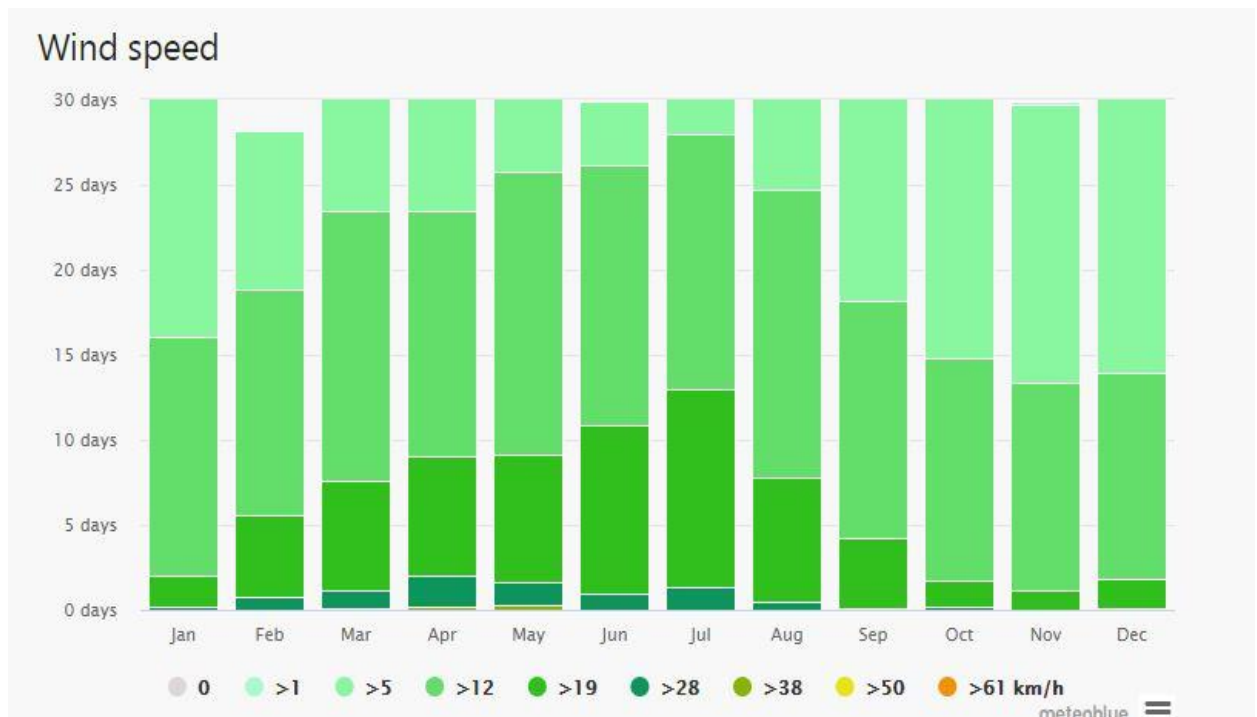
## 4.3.4 Ambient Air Quality

In the project area, Particulate Matter (SPM & PM10) and Oxides of Nitrogen (NOx), Sulphur Dioxide (SO<sub>2</sub>) and Carbon Monoxide (CO) are the major air

pollutants. Traffic on road is the main source of air pollutants including NO<sub>x</sub>, SO<sub>2</sub>, CO, PM, HCs, smoke, etc.

#### a) Ambient Air Gases

As already explained, there are very few industrial units in the Study Area which are far away from this project site. However, traffic activities are continuous source of contamination of ambient air within the project influence zone.



#### 4.3.5 Ambient Noise

Smoke and noise pollution by vehicles is the other main issue, emission of smoke from the foundries is degrading the environment level of the Kasur city.

#### 4.3.6 Water Resources

##### a) Ground Water

Ground water is the source of potable water in the area. The water table in the central part of the city has fallen below 130 feet (40 metres) and is projected to drop below 230 feet (70 metres) in most areas by 2025. The water quality is unfit for drinking purposes. From above 165 feet the water quality is good and fit for drinking.

The ground water in the area is sweet; recharge from the river and rain water is the main cause for sweet water. In upper layers, fine sand and clay occurs whereas for lower portions and up to about 80 feet, the strata comprise fine to medium sand with traces of clay. The lower strata are combinations of sand, both fine and coarse and some locations of clay.

### **b) Water Supply**

Adequate quantity of ground water of potable quality is available in the area. Ground water drawn through deep tube well is the present source of water supply. Generally, 1.5 cusecs capacity tube wells, about 450-550 feet deep have been installed. Thirty-one tube wells are presently operating to meet the water requirements. Out of these, some of the tube wells are not operating at the designed capacity and their efficiency is decreasing over the period. PMDFC has initiated "Improvement/Extension of water supply" scheme in Kasur. Presently hardly 70% of the total population of the city is served with water supply. The rest of the population either uses water from its own sources through pumped water supply or through hand pumps installed by the individual household. It is proposed to serve the entire population with piped water supply by the end of the planning horizon.

### **c) Sewerage and Drainage**

Existing sewerage comprises different pipe sizes of lengths, about 31,000 feet. The entire present system is not functioning as required. The sewage disposal station constructed for the purpose, close to the Rohi Nullah has deteriorated over the period. Most of the mechanical parts have been taken away by the people, and the station of about 60 cusecs capacity is in the abandoned state. This Nullah is presently functioning as an open sewer and almost the entire sewage and wastewater from the industries / tanneries other than four clusters now connected with the Common Effluent Pre-treatment Plant (CEPTP) is discharging to it for its ultimate disposal to Pandoki Seepage Drain.



### **4.3.7 Geology**

This is an alluvial area and aggregate and sand for project construction has to be imported from external quarry sources. The said project Area is located in seismic zone 2A (peak horizontal ground acceleration-0.8~0.16g) and negligible damages were observed during the October 08, 2005, earthquake.

### **4.3.8 Land Use**

Land use means spatial distribution of various city functions interrelated to each other within the planning area. These uses may be residential, commercial, educational, industrial etc. The study and analysis of these land uses is essential in assessing the existing deficiencies in spatial arrangements and also to determine the future requirements in respect of each function.

Kasur is historically famous for its Industrial-based economy and cotton mills, which existed since the British colonial era. The main industries which contribute significantly to economy are tanneries & textiles other includes such as Rice, Sugar, Oil/Ghee, Electronics, Cotton, Surgical Cotton, export quality Crockery products, services and professional associations have also developed in the area.

## **4.4 Ecological Environment**

A detail of ecological account of the Project and Study Area is given below:

### **4.4.1 Flora**

The area in which the project site is located was once covered with native vegetation, mostly consisting of trees like Ukkan, Kikar, Beri, Jand, Toot, Dharek, Nim, Van, and Karil. With the onslaught of civilization and industrialization, this vegetation was cleared for agricultural, commercial or industrial land use purposes. The current ecological details of the area in general and study area in particular are given below:



**a) Trees**

A field study related to the identification of tree species in the study area was also conducted. A vast majority of trees were observed in the localities visited as well as open fields. These are Tali/Sheeshum (*Dalbergia sissoo*), Kikar (*Acacia nilotica*), Neem (*Azadirachta indica*), Peeloo (*Salvadora persica*), Bohar (*Ficus religiosa*) and Gaz (*Tamarix indica*). Eucalyptus and Mesquite (*Prosopis juliflora*), the last two being the exotic species and mesquite has suppressed endemic species to a great extent. The endemic species of Peeloo and Bohar are reported to be endangered, as the forest department is not propagating the same, and similarly the wild berry (*Zizyphus numularia*) has almost become extinct. A tabular comparison is given hereunder to explicit frequency of each species in three zones of study area:

**List of Trees Identified in the Project Area**

<b>Sr #</b>	<b>Common Name</b>	<b>Scientific Name</b>
1	Tali/Sheshum	<i>Dalbergia sissoo</i>
2	Kikar	<i>Acacia nilotica</i>
3	Gaz	<i>Tamarix indica</i>
4	Neem	<i>Azadirachta indica</i>
5	Peeloo	<i>Salvadora persica</i>
6	Bohar	<i>Ficus religiosa</i>
7	Toot	<i>Morus marlaccae</i>
8	Sharin	<i>Albizzia lebbek</i>
9	Dharek	<i>Malia azerdaracb</i>
10	Phulshi	<i>Acacia modesta</i>
11	Nim	<i>Melia indica</i>

**b) Vegetables****i) Vegetables in around and Project Site**

No vegetables are grown in or around said project site.

**ii) Vegetables in Study Area**

Some important of these Phool Gobhi/cauliflower (*Brassica oleracea* Ver. botrytis), Band Gobhi (*Brassica oleracea* Ver. capitata), Onion (*Allium Cepa*), Potato (*Solanum Tuberosum*) and Turnip (*Brassica rapa* subsp. *Rapa*).

**List of vegetables Identified Around the Project Area**

Sr #	Study Area	
	Common Name	Scientific Names
1	Onion	<i>Allium Cepa</i>
2	Potato	<i>Solanum Tuberosum</i>
3	Phool Gobhi	<i>Brassica oleracea</i> Ver. <i>Botrytis</i>
4	Band Gobhi	<i>Brassica oleracea</i> Ver. <i>Capitate</i>
5	Turnip	<i>Brassica rapa</i> subsp. <i>Rapa</i>

**c) Fruits**

Oranges, Lemon, Guava, Grape fruit and Mangoes, Mulberry and Jamun orchids are famous.

Sr #	Study Area	
	Common Name	Scientific Name
1	Orange	<i>Citrus Sinensis</i>
2	Lemon	<i>Citrus Lemon</i>
3	Guava	<i>Psidium Guajava</i>
4	Grape Fruit	<i>Citrus * paradise</i>

5	Mangoes	<i>Mangifera Indica</i>
6	Mulberry	<i>Morus alba</i>
7	Jamun	<i>Syzygium cumini</i>

#### 4.4.2 Agriculture

The soil of the area is quite suitable for all kinds of vegetation including fodder, orchards, vegetables and other seasonal crops. The pattern mainly consists of wheat-rice system, while other agriculture practices include the cultivation of sugarcane, Cotton, Maize, etc.

##### a) Farm Traction Power

Tractor is the sole source of farm traction power. No farmer was found using animal traction power. There was significant variation in tractor ownership across farm size groups. However, more than half of the farmers owned tractor while rest were hiring the services for land preparation.

##### b) Irrigation

The tube-wells and canal water are the main source of irrigation water for wheat, rice and other crops and fodder. Also, many farmers irrigate their fields with contaminated water of drain and also many studies have been conducted to assess the level of toxic heavy metals in the soil and vegetables irrigated by drain water and their ultimate impacts on human health. It has been highly recommended during these studies not to use the contaminated water of drains for agricultural practices. On the other hand plenty of ground water is easily accessible for agriculture use.

##### c) Crops and Fodder

Sugarcane, Wheat, Rice (cleaned), Cotton and Maize are the main crops grown in the district.



#### d) Cropping Pattern

Rice and wheat are the major kharif (summer) and rabi (winter) crops, respectively covering more than 65 percent of the cropped area in both seasons. Two third of the cropped area is under paddy, a cash crop of the area. Also, the rice-wheat is the dominant sequential cropping system, yet fodders and sugarcane are the other important crops of the area in Kharif and Rabi seasons.

#### 4.4.3 Forests

An area of 13,782 Acres is under forests, which is about 1.40% of the total area of the district. There is also linear plantation of 996 kilo meters alongside the roads/rails/canals in the district. Trees grown in the area are Kau, Phalai, Kikar and Shisham.

#### 4.4.4 Fauna

The area provides healthy environment for the growth and reproduction of a diverse nature of fauna. A short description is given in the following paragraphs.

##### a) Mammals

##### Mammals within project site

Common mammals reported from the project area wild-bore, hyaena (*Hyaena striata*), red Indian foxes (*Vulpes bengalensis*), porcupines and jackals (*Canis aureus*). Until a few years ago the wolf (*Canis palfies*) was also found in riverain forests, but the species has almost become extinct due to loss of forests.

#### List of Mammals Present in and Around the Project Area

Project Site		Study Area	
Common Name	Scientific	Common Name	Scientific Name
Cat	<i>Felis catus</i>	Cats	<i>Felis catus</i>
Rat	<i>Rattus rattus</i>	Dogs	<i>Canis familiaris</i>



Squirrel	<i>Sciurus</i>	Cows	<i>Heracleum lanatum</i>
Hyaena	<i>Hyaena striata</i>	Goats	<i>Copra hircus</i>
Wolf	<i>Canis lupus</i>	Sheep	<i>Ovis aries</i>
Red Indian foxes	<i>Vulpes</i>	Horses	<i>Equus caballus</i>
Jackals	<i>Canis aureus</i>	Donkeys	<i>Equus africanus asinus</i>

## b) Reptiles

### Reptiles within Project Site

No reptiles were identified within the project site

### Reptiles in Study Area

Above reptiles were also seen in study area in localities and field. The most common reptiles include Snakes, Pakistani Cobra (*Naja naja karachiensis*), Lizards, Varanis (Goh/large lizard), Spiders and Scorpions, etc.

### List of Reptiles Present in and Around the Project Area

Common Name	Scientific Name
Lizards	<i>Lacertilia</i>
Spiders	<i>Araneae</i>
Scorpions	<i>Scorpionoidea</i>
Pakistani cobra	<i>Naja naja karachiensis</i>
Goh/large lizard	<i>Varanis</i>

## c) Amphibians

A number of Amphibians found in the tract include Common Frog (*Rana tigrina*), Common Toad (*Bufo bufo*) and Tortoise (*Chitra indica*).



**List of Amphibians Present in and Around the Project****Area**

Project Site		Study Area	
Common Name	Scientific Name	Common Name	Scientific Name
Common Frog	<i>Rana tigrina</i>	Common Frog	<i>Rana tigrina</i>
Common Toad	<i>Bufo bufo</i>	Common Toad	<i>Bufo bufo</i>
		Tortoise	<i>Chitra indica</i>

**d) Birds**

Different types of birds' species were identified within the project site. The bird's species identified in these areas include House Sparrow (*Passer domesticus*), House Crow (*Corvus splendens*), Cheel, Bagle, Bulbul (*Pycnon tus cafer*), Parrots (*Psittacula krameri*), Hawk (*Buteo Jamaicensis*), Kite (*Milvus*), Pigeons (*Columbia livia*), Ullu, etc. are also seen in the area. A large variety of waterfowls and migratory birds also visit the region because of the barrages and wetlands in the area.

**List of Birds Present in and Around the Project Area**

Sr #	Project Site		Study Area	
	Common Name	Scientific Name	Common Name	Scientific Name
1	House Sparrow	<i>Passer</i>	Parrots	<i>Psittacula</i>
2	House Crow	<i>Corvus splendens</i>	House Sparrow	<i>Passer</i>
3	Hawk	<i>Buteo</i>	House Crow	<i>Corvus</i>
4	Kite	<i>Milvus</i>	Pigeons	<i>Columbia livia</i>
5	Pigeons	<i>Columbia livia</i>		

#### **4.4.5 Wildlife Sanctuaries and Game Reservoirs**

No wild life sanctuary or game reservoir is located in the vicinity of the project area or in the project influenced area.

#### **Rare or Endangered Species**

There are no rare or endangered species in the study area.

#### **4.5 Social Environment**

Human settlements are symbol of typical haphazard rural growth based on ill planned developmental procedures showing common indicators of all the unorganized procedure of rural settlement of the province. These localities were developed on need oriented basis. No bye-laws, rules and obligations necessary for human settlement, construction or expansion and infrastructure development were considered. These localities are also the picture of stereotype rural residential areas which lack basic amenities, improper roads, and poor drainage system, deteriorating hygienic and sanitary conditions causing bad effects on human health.

The main objectives of socio- economic study of the project area were:

- To furnish appropriate information about the baseline socio-economic conditions
- To identify and assess significant social impacts of the Project activities on the surrounding area
- To propose suitable means for probable mitigation of the significant adverse social impacts.

##### **4.5.1 An Overview of Socio-economic Conditions**

This section describes the status of overall socio-economic baseline conditions prevailing in the study area. It deals with various socio-economic and cultural aspects of the community including income, employment, professions,



basic facilities, education and health, social structure, culture, women's status, traditions, ethnics, sectarian status and residential needs of the local people.

The socioeconomic data of Kasur indicates that it is marginally below the provincial averages for the general socio-economic condition, but is not sufficient to constitute a comparative advantage over other towns included in the project survey. In 1998 of the total employed persons, 33.9% had elementary occupations followed by skilled industrial and agricultural works representing 40.2%, service workers, shop and market sales workers, 6.7% and craft and related trade workers representing 4.2%. In rural areas people having elementary occupations were again in majority, followed by skilled agriculture and fishery workers and service workers, shop and market sales workers representing 44.6%, 41.6% and 4.7% respectively.

Of the total economically active population 97.8% were registered as employed in 1998. Nearly 70.5% were self-employed, 12.1% government employees and 14.2% private employees. Un-paid family helpers were recorded as 2.2%. The difference in proportions of employed population was significant between the genders and urban and rural residences.

#### **4.5.2 Analysis of Socio-economic Conditions**

This section presents a locality-wise analysis of existing status of various socioeconomic parameters such as income, employment, basic facilities, education, health, recreation, migration, conflicts, ethnic status, role of women, professions, residential conditions, etc.

##### **a) Sources of Income**

District Kasur has been traditionally a centre of tanning units. With the establishment of Chunian Industrial Estate, a variety of industrial units are being established. However, the main thrust is on textile spinning. There are also a number of power looms units in the district In view of the tanning, textile spinning and power looms units there exists big scope for textile processing / printing,



quality men/women under garments, ready-made garments, canvas cloth, tents/tarpaulins, textile related chemicals, sizing units, paper cones/bobbins, textile machinery repairing shops, tanning chemicals, leather garments and leather products, leather footwear, etc. Most of the people work as laborers in these established industrial units. Other depends upon the agricultural activities.

**b) Basic Facilities**

Basic facilities like electricity, roads, transport, gas, water etc. are available in the area.

**c) Educational Facilities**

Educational facilities up to university level are available in almost all the localities and are easily approachable.

**d) Medical Facilities**

The proper health care facilities are present in the area for both male and female population.

**e) Recreational Facilities**

Changa Manga Park being maintained by the Punjab Forest Department, Kasur Forest Division is one of the very few parks for out-door recreation for people of the district. Every month about large number of peoples from all walks of life visit this spot. Due to lack of recreation facilities in the Province in general and the adjoining areas of Lahore in Particular, it has over the years become one of the most frequently visited parks in the country. Some facilities for recreation in the form of Lunar Lake for boating, a pagoda, picnic lawns, suspensions and cantilever bridges, swimming pool, mini zoo and the wild life parks which are connected by a Tramway have been developed from the resources of the Forest itself. Apart from this green field country club is another recreational place in the district. Melas in the month of Sawan is playing a vital role to provide some recreational opportunities to the locals.



**f) Types of Community**

It was observed that being the members of a typical/traditional blend of rural and urban community, almost all the old people are very conservative in their life style. People practice their traditional, social and cultural values strictly in all walks of life.

**g) Types of Family**

The joint/extended family system is generally prevailing among people of the whole area; however, nuclear family system is also observable in the area.

**h) Ethnic Status**

An overwhelming majority of the people belongs to the Dogers, Nehols, Sardars, Jatts, Ansaris, Kambos, Tallos, Kasooris, Araiens, Momals, Meos, Nakahi Syed, Mughal, Hans, Rao, Sial, Gujjar, Kamyana etc. tribes living together with peace and harmony. This shows social cohesiveness, solidarity and harmony among them.

**i) Status of Women Literacy**

A vast majority of the females of the Study Area are literate which shows very good educational trend among females; however, young females have high literacy rate showing positive trend in female education.

**j) Decision Making Authority**

Majority of the females have no authority in decision-making process regarding their life. This shows non-participation of the females in decision-making process regarding the females and other issues.

**k) Role of Women**

Role of female is conventional and traditional. Most of the females are engaged in housekeeping. However, females also perform outdoor activities and duties. Females are supposed to be responsible to perform all the family activities and are involved in all types of family functions.

#### **4.5.3 Quality of Life Values**

If we specifically about the project area then majority of the people has to adopt seasonal occupation to supplement their income due to low-income level and inconsistent income opportunities. Majority of the people were working as labors, farmers and many do their own common business (shopkeepers). A fair number of people work as laborers in the nearby cities. The locals of this are provided with basic facilities like electricity, roads, transport etc. but are disorganized and mismanaged. If we talk about educational facilities then education up to primary level are available in almost all the localities and are easily approachable. The proper health care facilities are not present in the area for both male and female population. Open and level fields of the localities are used as playgrounds by the youth. Urs and Melas are playing a vital role to provide some recreational opportunities to the locals.

It was observed that being the members of a typical/traditional blend of rural and urban community, almost all the old people are very conservative in their life style. People practice their traditional, social and cultural values strictly in all walks of life. The joint/extended family system is generally prevailing among people of the whole area; however, nuclear family system is also observable in the area.

#### **4.7 Lab Reports of Environmental Analysis**

Testing of different parameters has been done by Owners. The copies of lab reports of different environmental parameters are given in annexure.



## **4.8 SITE SUITABILITY:**

The present site for Canter Pvt Ltd (Dyeing Unit) is under the ownership of proponent. All commodities are at a suitable distance from project site as they will not be impacted by the construction and operational activities even locals will get more benefits and job opportunities. No replacement, relocation and rehabilitation are required for the development of proposed project.

All facilities of infrastructure, electricity, roads, and communication facilities are present in current location. The project site is devoid of flora & fauna having significant importance.

## **4 IMPACT ASSESSMENT**

### **5.1 Methodology for Impact Identification**

The potential impacts due to proposed Factory can be both positive (beneficial) and negative (adverse) depending on the resources and receptors involved along with other parameters such as geographical scope (magnitude and extent), temporal scope (duration) and reversibility.

It is anticipated that this project will have positive impacts on sectors such as the economy, employment and foreign exchange earnings among others. Moreover, the project is expected to result in negative impacts of short-term duration and transient in nature.

Environmental sensitivity of the project area is described through a thorough review of the project activities and the evaluation of significance of impacts is carried out through Environmental Checklists and GIS and computer expert system. In checklists, the impacts have been given magnitude based on their severity. A detailed map of the project area is developed on GIS to study the impacts on nearby environmental settings. This chapter then suggests effective mitigation strategies to help combat the adverse nature of these impacts and delivers a monitoring scheme to manage them.

### **5.2 Impacts Analysis and Prediction**

The impacts on different environmental settings were analyzed by conducting different consultation sessions with environmental experts and individuals. Their views were recorded and incorporated in the report. The list of stakeholders and individuals consulted will be provided in the chapter of Stakeholder's Consultation.

### **5.3 Characterization of Impacts**

The impact analysis is characterized as following:

- Positive and Negative Impacts
- Long- and Short-Term Impacts
- Direct and Indirect Impacts
- Continuous and Intermediate Impacts
- Wide and Local Impacts
- Large, moderate and minor Impacts

Basic Components	Impact Characteristics												
	Duration		Location		Frequency		Extent		Significant			Nature	
	Long	Short	Direct	Indirect	Continuous	Intermediate	Wide	Local	Large	Moderate	Minor	Positive	Negative
Soil Erosion		*		*		*		*			*		*
Air Quality		*	*			*		*			*		*
Ground Water Quality		*	*		*		*		*				*
Noise Level		*	*			*		*			*		*
Wastewater Generation	*		*		*		*		*				*
Solid Waste	*		*		*			*		*			*
Aesthetic		*		*		*		*			*		*
Flora		*		*		*		*			*		*
Fauna		*		*		*		*			*		*
Employment Rate		*	*			*		*		*		*	
Economic Uplift		*	*			*		*		*		*	
Health and Safety		*	*			*		*			*		*

Basic Components	Impact Characteristics												
	Duration		Location		Frequency		Extent		Significant			Nature	
	Long	Short	Direct	Indirect	Continuous	Intermediate	Wide	Local	Large	Moderate	Minor	Positive	Negative
Soil Erosion		*		*		*		*			*		*
Air Quality		*	*			*		*			*		*
Ground Water Quality	*		*		*		*		*				*
Noise Level		*	*			*		*			*		*
Wastewater Generation	*		*		*		*		*				*
Solid Waste	*		*		*		*			*			*
Machine Installation	*		*		*			*		*		*	*
Generator Installation		*		*		*		*			*		*
Dyeing of Clothes	*		*		*		*		*				*
Aesthetic		*		*		*		*			*		*
Flora		*		*		*		*			*		*
Fauna		*		*		*		*			*		*
Economic Uplift	*		*		*		*		*			*	
Employment Rate	*		*		*		*		*			*	
Health and Safety		*	*			*		*			*		*

#### **5.4 Impact Significance**

After the evaluation of all the potential impacts, the impacts significance is be given using Impact matrix. The impacts significance of Physical importance, Ecological importance, Social importance is given using the matrix approach. The impacts significance is given based on the characterization of impacts. From the Table 6-1 which is showing the characterization of each impact the following significance is given to each physical, biological and socio-economic impact.

# **SCREENING OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

This section discusses the project's potential environmental impact on the area's geomorphology, soil, water resources, air, biological resources and socioeconomic condition and, where applicable, identifies mitigation measures that will reduce, if not eliminate, its adverse impact. The assessment carried out in this section is based on potential impacts on overall environmental receptors within the project area.

Objectives of screening out all possible impacts and then providing their mitigation measures are:

- To find different alternatives and ways of carrying out the project activities.
- To enhance the Environmental and Social benefits of proposal.
- To avoid, minimize and remediate adverse impacts.
- To ensure that residual adverse impacts are kept in acceptable limits

### **Impact Analysis and Prediction**

In order to give correct categorization to the present project Rapid Environmental Assessment Procedure was followed. It revealed that there some major impacts of the project have identified which will be controlled by adopting proper mitigation measures. These impacts are mainly attributed to the release of dust e impacts are projected as moderate/minor impacts although project has many positive impacts on local public and economy. M/s Canter Pvt Ltd(Dyeing Unit) will adopt proper procedures to carry out the operation in environmental-friendly way.

### **Meetings:**

For the impact analysis and predictions detailed meetings were held with the proponent, management of and with other stakeholders. Issues were discussed that may affect the environment and also the implementation of proposed project. All possible mitigation measures were considered and incorporated in the Environmental Management Plan.

### **Consultations**

Scoping sessions, focused group discussion and way side consultations were held with the relevant stakeholders, inhabitants of the villages, shopkeepers and workers in the area. These included local government departments, educational institutes, NGOs, health departments, public representatives and local residents. The purpose of such consultations is to obtain the feedback from the relevant persons.

The environmental issues have been identified during literature review, consultation with stakeholders, relevant reports and visits to project site. Various types of environmental issues likely to crop up during the life cycle of project are grouped in the following stages:

- ***PROJECT LOCATION***
- ***PROJECT DESIGN***
- ***CONSTRUCTION STAGE***
- ***OPERATION STAGE***

### **Environmental Parameters**

## **5.1 Environmental impacts due to Project Location**

This section discusses the project's potential environmental impact on the area's geomorphology, soil, water resources, air, biological resources and socioeconomic condition and, where applicable, identifies mitigation measures that will reduce, if not eliminate, its adverse impact. The assessment carried out in this section is based on potential impacts on overall environmental receptors within the project area.

Objectives of screening out all possible impacts and then providing their mitigation measures are:

- To find different alternatives and ways of carrying out the project activities.
- To enhance the Environmental and Social benefits of proposal.
- To avoid, minimize and remediate adverse impacts.
- To ensure that residual adverse impacts are kept in acceptable limits

### **Project Location**

The said proposed project is located at 42-KM Ferozepur Road, on Bholekey Road Tehsil & District Kasur. The proponent has selected the site owing to the following reasons:

- The site is undisputed and under the ownership of the proponent.
- There is no community or human settlement on the site
- There is no fauna flora (particularly belonging to an endangered species) on the site
- Main road network runs in front

- There is no ecologically sensitive or declared protected area (PA) like forest, fish hatcheries, Territorial Waters, wildlife or game reserves, any structure of socio-cultural significance (historical or archaeological site or religious structures; Masjid, temples, etc.) within 10 km of the selected site

It can be concluded in view of these reasons that the selected site is best suited for the project, and will not pose any adverse impact or threat on any component of the environment.

## **5.2 Impacts Associated with Design Phase**

At the design phase, considerable impact can occur on land, soil, topography, ground water, and on people of the area. The design has sought to minimize any environmental potential impacts by ensuring that the project should be in according to the environmental standards. The design to be used for proposed factory is state-of-art and environmentally friendly.

### **Mitigation Measures at Design Phase**

At design phase special attention should be given to the design of the project in the sense that it has been designed in such a way as to cause minimum disruption and deterioration of environment and surroundings. However, in pre-construction phase a management system should be provided at design level so impacts can be reduced. Design of the said Canter Pvt Ltd (Dyeing Unit) will be adhere to all standard technical requirements in order to avoid adverse impacts on environment and human health. There will not be any environmental problems at any stage from design stage to its operational stage. The project is to be designed in a way that it guarantees all out compliance with the Punjab Environmental Quality Standards (PEQS). The Proponent intends to construct the unit on modern lines, meeting International Standards, with incorporation of new Technology. The design, if maintained and operated in an environment-friendly manner, is expected to cast positive impact on the Environment and will not pose any adverse impact or threat on any component of the Environment.

## **5.3 IMPACT DURING CONSTRUCTION / DEVELOPMENT PHASE**

The potential environmental impacts of the proposed project at site and surrounding area during the development / construction phase are described as follows:

### **5.3.1 Physical Environment**

The main impacts of the project during development / construction of the new roads, civil works, development of parks, installation / laying pipelines, sewer system and installation of utility and equipment's will be the dust and noise from transportation of construction materials and equipment's. Standard Engineering Practices will be enforced on the construction / development site.

#### **5.3.1.1 Seismic Hazard Impact**

In this zone, distant earthquakes with fundamental periods greater than 1.0 second may cause damage to structures. This factor requires special consideration of the designers. This will be a moderate negative impact.

##### **Mitigation**

All the foundations of the structure will be designed to withstand even moderate to large earthquakes. For seismic hazard analysis updated structural and seismic evaluations will be consulted.

#### **5.3.1.2 Impact on Soil Impact**

During construction phase the soil quality may be affected due to very small amount of discharges during vehicle and equipment maintenance and leakage from equipment's and vehicles. The impact is not significant.

##### **Mitigation**

Any spill if occur will be immediately clean up. If the problem of water logging occurs during development phase the area will be immediately reclaimed. The impact is not significant. Depending on the nature of the material, location of spill and quality of spill, soil can get contaminated. Low permeable membrane should be present at the bottom of vehicles. Proper tuning of vehicles is also necessary. Due to mitigation measures, the overall impact on soil during construction phase is minor.

### **5.3.1.3 Impacts on Air Quality**

Following potential impacts on air quality may occur during construction phase.

#### **(a) Emission of Dust and Particulate Matter**

During the development/construction vehicles and machinery will be employed. These will generate some dust and smoke temporarily. During construction phase due to continuous operation of machinery and movement of heavy trucks and vehicles can generate gaseous emissions and can have a slight adverse effect on the surrounding environment. Combustion exhaust from vehicles and construction equipment's during construction phase can affect ambient air quality of project area.

#### **Mitigation**

All vehicles, machineries, equipment and generators used during construction activities should be in good working condition, properly and be properly maintained in order to minimize exhaust emissions. This impact is classified to be short term, reversible and limited, as it will only occur during the excavation activities. Also, these impacts are expected to be contained within the site boundaries. For dust sprinkling of water is done to avoid dust.

### **5.3.1.4 Solid Waste**

#### **Impact**

The solid waste generated during the construction phase of Project can pose a health hazard, pollute soil, surface and ground water if not managed properly. A significant impact will be interpreted if the waste management is not carried out properly; which may effect to health of workers, pollution of soil, surface or groundwater.

#### **Mitigation**

The Potential sources of solid waste from operational activities include excavated material, construction waste, food waste, plastics, and paper. Dumping of excavated waste will be done at a designated site approved by TMA, and it will be ensured minimum degradation to the soil around the Project area. Construction waste will also be disposed off as per TMA procedures. Other generated solid waste comprises of a domestic waste. Waste storage bins will be installed. The waste from these bins will be collected by the sanitary workers. The waste will be disposed off in accordance with the procedures of Tehsil Municipal Administration. No significant impact on the

environment is anticipated from solid waste generation at the project site as the solid waste is managed efficiently.

#### **5.3.1.5 Noise and Vibration**

##### **Impact:**

When the construction work is undertaken, constant rattle of heavy machinery will raise the noise level in the Project Area. This noise and vibration will affect directly the residents of nearby areas. Noise due to the construction will be a minor negative impact.

##### **Mitigation**

Mitigation measures mentioned below will be adopted to minimize the noise pollution. Those measures include, but are not limited to the following:

- Selection of up-to-date and well-maintained plant or equipment with reduced noise levels ensured by suitable in-built dampening techniques or appropriate muffling devices.
- Confining of excessively noisy areas and limiting the work to normal working hours in the day;
- Providing the construction workers with suitable hearing protection like ear cap, or earmuffs and training them in their use; and
- Regular checkups and maintenance of the construction equipment, and oiling and greasing of the noise making mechanical parts.

#### **5.3.1.6 Traffic Congestion and Disturbance to People**

##### **Impact**

During the construction phase, the movement of heavy machinery and transportation of raw material and equipment may cause traffic congestions. As a result, the daily activities of the people of nearby localities as well as of the visitors may be disturbed, which will require proper mitigation measures. This will be a moderate negative impact.

##### **Mitigation**

During construction, following mitigation measures will be followed:

- Observation of timing by the vehicles carrying construction material of infrastructure to cause minimum disturbance to traffic on existing road. The construction equipment and machinery must be stationed in the boundary premises to avoid the traffic congestion on the main Road.
- Transportation of raw material and heavy machinery will be done early in the morning; and
- There will be coordinated planning of traffic movement by the Traffic Police and the Transport Department in accordance with the construction program with advance warnings to the affected residents and road users.
- All the machinery will stay inside the periphery of project so it will not cause disturbance in the traffic.

#### **5.3.1.7 Workers' Safety Impact**

During construction phase minor and severe injuries to workers due to operation activities may occur. The construction activities impose certain negative impacts on health and safety of the workers and public in case of unsafe and/or unfavorable working conditions. Mitigation measures will be required to minimize health and safety related negative impacts of the project. This will be a minor negative impact.

#### **Mitigation**

Mitigation measures will be required to minimize health and safety related negative impacts of the project. This will be a minor negative impact.

Implementation of the following measures will ensure health and safety of the workers and the public during the construction phase:

- Construction workers will be provided with proper safety equipment such as helmets, goggles, masks, etc.;
- Formal emergency procedures will be developed for construction site in case of an accident. First aid kits and other necessary equipment will be kept available at site along with the list of emergency phone numbers to be contacted in case of any emergency/accident;

- The safety of the public at all stages of the construction will be ensured through appropriate public education and safety measures such as use of sign boards, barriers and flags; and Proper illumination will be provided at night.

### **Proposed Mitigation Measures during Construction / Development Phase**

The potential negative impacts during construction and operational stage of the project should be mitigated to an acceptable level. Following environmental protection measures are adopted to eliminate adverse environmental impacts or to reduce them to an acceptable level within the legislative and regulatory framework. The proposed mitigation measures are listed below:

- Appropriate waste disposal mechanism should be followed during the construction phase. The construction waste would be disposed in a manner that does not contaminate surface or groundwater.
- The construction waste generated will be used for earth filling within the project site premises.
- The Contractor needs to make sure that their machinery and equipment are properly tuned and serviced and there is no leakage of oil from construction equipment's and machineries.
- Contractor should give assurance of quality of machineries and equipment's which will be used during excavation and construction process.
- All vehicles, machineries, equipment and generators used during construction activities should be in good working condition and be properly maintained in order to minimize exhaust emissions.
- Construction labor must be trained in safety procedures for all relevant aspects of construction
- Helmets or hard hats should be worn by workers at all time of work and everywhere on the Project Site.
- Regular checks should be carried out to ensure that the contractor is following safe working procedures and practices.
- Confining excessively noisy work to normal working hours in the day, as much as possible.
- Providing construction workers with suitable hearing protection like ear cap, or ear muffs and training them in their use.

- Ear muffs or ear caps should also be provided to those people living in nearby area

## **5.4 IMPACTS DURING OPERATIONAL PHASE:**

The anticipated impacts related to the proposed project have been studied for operational stage and is discussed as follows:

### **5.4.2 Gaseous Emissions**

Air emission due to establishment of this project involves particulate matter emissions' from boiler and dust.

## **4 Mitigation Measures**

Following mitigation measures will be adopted to control the air pollution:

- The most effective way to control these emissions is to “capture” them at the point of release and remove them by exhaust ventilation before they are dispersed into the air through local exhaust ventilation.
- Identifying sources of air pollution and quantifying emissions.
- Trees will be planted around the project area extensively to control air.
- Bag house filters must be installed to control particulate matter.

### **6.1.2 Wastewater**

Wastewater will be generated from both domestic and process activities during operation. From domestic activities wastewater will be generated at the rate of 2 cusec/day while in process water will be used in washing of bottles. After passing through settling tank wastewater will be dispose off in water channel of irrigation department at a distance of around 10 ft.

### **Nature of Impact**

The nature of the impact will be direct, low, short-term and hence in-significant.

## **5 Mitigations**

Following mitigation measures will be adopted:

- Monitoring of effluents shall be carried out as per requirement of Self-Monitoring and Reporting Tools (SMART) to ensure compliance with the PEQS.
- It will be ensured that no solid waste will be entered in the wastewater.
- Domestic wastewater will be treated in septic tank before disposal
- Wastewater treatment plant must be installed for safe disposal.

### **6.1.3 Solid waste**

Solid waste generated from operational activities includes Labels, tags, bottle caps, packaging waste and domestic solid waste. Domestic solid waste will be disposed off as per area practice. Process waste will be sold to certified vendor in open market.

## **6 Nature of Impact**

The nature of the impact will be direct, low, short-term and hence in-significant.

## **7 Mitigations**

Following mitigation measures will be adopted:

- Waste segregation should be done before disposal
- Bins will be placed within unit and workers will be instructed to dispose off solid waste properly
- Recyclable material should get separated.
- Domestic solid waste should also be disposed off properly
- Waste should not be stored for long time at a place to avoid nuisance

### **6.1.4 Occupational Health and Safety**

The health and safety impacts include:

- slips, trips and falls on the same level
- falls from height;
- unguarded machinery;
- falling objects;
- working in confined spaces;
- moving machinery, on-site transport, forklifts and cranes;
- contact with hot metal;
- fire and explosion;
- extreme temperatures;
- noise and vibration;
- electrical burns and electric shock;

## **8 Nature of Impact**

The nature of the impact will be direct, low, long-term and hence significant.

## **9 Mitigation**

The following mitigation measures are suggested that could be applied to reduce the risk

of health and safety:

- Floor surfaces shall be maintained regularly, and kept clean and free of oil spills, other slippery fluids or materials and obstructions.
- Workers who may be exposed to noise levels exceeding occupational standards shall receive regular audiometric testing.
- The effective use of hearing-protection devices shall be ensured.
- Proper training will be provided to workers entering and working in the confined space of the hazards, protective measures and emergency rescue procedures;

- Transport routes shall be planned and constructed to minimize the risk of collision and with sufficient safe clearance to allow for aisles and turns, or other types of control area. Where appropriate, maps showing the proposed route should be provided.
- Transport routes shall be clear of obstructions and, where possible, without irregular surfaces.
- Loads should be lowered slowly and smoothly.

### 6.1.5 Socio-Economic Impact

It is envisaged that the local community may be disturbed due to increase in the traffic load. The intensity of the aforesaid project will be quite low. The installation of the aforesaid project will have a beneficial impact such as; increase in employment opportunity, increase of the wages in local area, increase in revenue generation, decrease in pollution load, provision of social welfare funds of the employees and appreciation of land value.

### 10 Nature of Impact

The aforesaid impact is considered to be positive and will have a direct, medium, long-term and significant impact.

### 11 Mitigation Measure

No mitigation measures will be required.

## 5.5 Potential Environmental Enhancement Measures

Tree plantation and cropping within the premises have been planned by the proponent for environmental enhancement. The Proponent will also make arrangements for protection and maintenance of trees.

### Names of Trees, Plants etc.

The following plants are recommended for this project, however other trees will be consulted with gardening experts and other endangered trees will also be planted.

Local Name	Scientific Name
Cono Tree	<i>Conocar pieceo</i>

Arabic Gum tree	<i>Acacia nilotica</i>
Golden Shower tree	<i>Casia Fistula</i>
Indian Beech tree	<i>Pongamia Pinata</i>
Kachnar	<i>Bauhinia variegata</i>
Jasmine	<i>Jasminum</i>
Lilly	<i>Lilium</i>
Lotus	<i>Nelumbo Nucifera</i>
Rose	<i>Rosa Indica</i>

Excavation for planting shall include plant pits and planting beds. The minimum depths of plant pits or beds shall be measured from unit the grade. Plants beds and pits shall be tested for drainage before planting by filling with water twice in succession. Conditions permitting the retention of water in planting the beds or pits for more than 24 hours shall be brought to the attention of the Architect. If rock, underground construction, obstructions, tree roots or other obstructions are encountered in the excavation of plant pits, alternate locations may be select by the architect. The contractor shall be responsible for all damages resulting from any neglect and failure to comply with this requirement.

Following excavation planting pits, the pits shall be back filled with the sweet soil mixture as specified. Three day prior to planting, the pits shall then be filled with water for consolidation of soil. The dimensions of the panting pits are as follows:

- A. Trees: 3x3x3
- B. Shrubs: 2x2x2
- C. Hedges: trenching 2wide x'2 deep of required length.

D. Creepers and vines: 2wide x 2 deep of required length.

E. Edges and flowers beds: 'fill flower box with sweet soil as per the Architect's drawings. For seasonal flowers, the beds are to have the minimum of 12" sweet soil and 4" 'manure.

Planting areas and plants shall be protected all times against trespassing and damage of all kinds for the duration of maintenance period. If any plants become damage or injured, they shall be treated or replaced. Protection shall also include all temporary protections fences and barriers. all signs and all other work incidental to proper maintenance.

# **PUBLIC CONSULTATION, PARTICIPATION AND DISCLOSURE**

## **7. INVOLVEMENT OF STAKEHOLDERS/PUBLIC CONSULTATION**

### **7.1 GENERAL**

This section describes the regulatory policy, planning and current practices of project proponent pertaining to the stakeholder engagements and outcomes of stakeholder consultation process initially done as part of the IEE/EIA report. The feedback from communities and other stakeholders directly or indirectly affected by the project is collected so that it may be used to adjust and improve the project's design, planning, implementation and help the implementation structure ensuring that the project is both environmentally and socially sound. The consultation process was carried out in accordance with the requirements of the Punjab Environmental Protection Act and Government of Pakistan on public consultation.

The objectives of this process were;

- To disseminate information on the project and its expected impact, long-term as well as short-term, among primary and secondary stakeholders,
- To gather information on relevant issues so that the feedback received could be used to address these issues at an early stage of the project,
- To determine the extent of the negative impacts of different project activities and suggest appropriate mitigation measures.

### **7.2 IDENTIFICATION OF STAKEHOLDERS**

There are two types of stakeholders, i.e.

- a. Primary stakeholders
- b. Secondary stakeholders

#### **7.2.1 Primary Stakeholders**

The primary stakeholders are the initial stakeholders, such as affected persons, general public and women residing in the project area. Accordingly, the consultations / focus group discussions were made with all primary stakeholders for sharing of information about the proposed project and expected impacts and understanding about the concerns by category of stakeholders.

### 7.2.2 Secondary Stakeholders

The secondary stakeholders are the representatives of Government Departments/Agencies involved in the planning, design, implementation and operation of the project, including various government departments such as District Administration, EPA, and other relevant departments.

### 7.3 STAKEHOLDER ENGAGEMENTS PLANNING

A two fold stakeholder engagement is planned and carried out for the proposed project as following:

#### (a) Stakeholder Consultation during the Preparation of EIA Report:

The consultation with the primary and secondary stakeholders has been conducted initially during the preparation of the IEE/EIA report, details of which have been given in the subsequent paragraph at 10.4.

## 2.2. STAKEHOLDER CONSULTATION PROCESS

The overall strategy for stakeholder's consultation is as follows:

### a. Table - 9.1: Process of Stakeholder Consultation

Stakeholders	Purpose of Consultations	Methodology	Stage
<b>Primary Stakeholder</b>	<ul style="list-style-type: none"> <li>Information gathering and data collection.</li> <li>Information sharing about the project (disclosure)</li> <li>Opinion seeking (concerns and expectations)</li> <li>Grievance redress</li> </ul>	<ul style="list-style-type: none"> <li>Focus Group Discussions</li> <li>Household surveys</li> <li>Formal and informal Community meetings</li> </ul>	<ul style="list-style-type: none"> <li>Base line Study Impact Assessment</li> </ul>

<b>Secondary Stakeholder</b>	<ul style="list-style-type: none"> <li>• Participation in the development process</li> <li>• Information gathering</li> <li>• Authentication and validation of the development processes</li> <li>• Verification of the record</li> </ul>	<ul style="list-style-type: none"> <li>• One on one meetings</li> <li>• In-depth interviews</li> </ul>	<ul style="list-style-type: none"> <li>• During the IEE preparation</li> <li>• On need basis during the project implementation and</li> </ul>
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Stakeholder consultation for this project was planned during the preparation of EIA report. In first step during the scoping, which has already taken place, consisted of meetings with individuals, groups, relevant organizations and government departments, which are in some way linked to the project and therefore considered stakeholders. The meetings were conducted to inform stakeholders about the project and how it may affect their lives/activities, and to record their concerns, whether real or perceived. Through the use of various tools the study team tried to involve the stakeholders in active decision-making. The results of this exercise are described below, where mitigation measures have been developed addressing the pertinent stakeholder concerns.

### 2.3. PRIMARY STAKEHOLDERS CONSULTATION

Apart from gathering of quantitative data through household survey of the area of influence of the project and survey of local community to share the information about the project and record their concerns/ feedback associated with this project. In this context, nearest community shared their view point regarding the assessment especially procedure for entering their concerns/ grievances, employment opportunities, and implementation of the project.

#### 9.5.1. Topics for Discussion

The topics discussed in the consultations were:

- Employment and livelihoods of communities.
- Gender and women issues
- Contractor's camp and access
- Environmental issues during construction and operation of project

- Company responsibility for employment, etc

## 9.6 PROPONENT

All possible impacts and mitigation measure related to the project were discussed with the proponent and management. They assured to take all suggested mitigation measures to control any discrepancy arose by the project and to make the project environment friendly.

## 9.7 THE RESPONSIBLE AUTHORITY

The Canter Pvt Ltd shall be the responsible authority to take all measures prior to start the project and during operation.

## 9.8 OTHER DEPARTMENTS AND AGENCIES

For the impact analysis detailed with the management, local community, educational institutes, health institutes, hospitals and NGOs. All issues were discussed related to implementation of the project. Scoping sessions, focused group discussion and way side consultations were held with the relevant stakeholders in the area.

### **Environmental Experts & Other Departments Discussion:**

When Discussion has been made with Environmental researchers & students and other concerned departments. They were very much interested for this project to be constructed in the **Kasur district**. Regular monitoring of emissions will be practiced to comply with the PEQS. They were very much satisfied about environmental issues because there is no removal of trees and habitat destruction due to project activities as there exist no any trees or habitat at the proposed site. Tree plantation is the part of project to improve the environmental conditions of the site. Tree plantation activities will be carried out by the project proponent on regular intervals. The vehicles carrying wastes would be properly covered to reduce the odor problem. Waste produced during the project activities would be properly managed and disposed off. Regular environmental monitoring would be ensured to meet PEQS.

### **Public Consultations:**

The consultations were made with the local community to share the information about the project and record their concerns/ feedback associated with project.

#### **7.4.1 Concerns Regarding the Project:**

During the field survey, people were asked about their views regarding the said Project. In general, local community has positive attitude towards this said Project that this will help to improve the development of the area.

#### **7.4.2 Major Stakeholders identified**

In the Project Area, all the possible stakeholders were identified during the survey. Following is the list of potential stakeholders in the Project Area

- Local residents Teachers
- Shop owners
- Office Workers Laborers
- Pedestrians
- Mosque users.
- Transport users
- Environmental Experts
- Responsible authority & other departments

#### **Issues Discussed**

Following issues were discussed during the stakeholder 's consultation:

- Overall activities of the project and their possible impacts.
- Possible impacts on natural vegetation, flora and fauna

- Possible mitigation measures;
- Beneficial factors and involvement opportunities of the local people in the set of activities of Project; and
- Management of traffic during construction and operational phase of the project.

### **7.5.1 General**

Majority of stakeholders appreciated the project and taken it as a necessary step towards the current situation of waste problems. Few people had some reservations regarding the emissions of gases.

### **7.5.2 Environmental**

Few people were concerned about the gaseous air emissions due to the operation of the furnace. Some people also show their apprehension regarding noise pollution due to loading and unloading of billets and raw scraps, respectively.

### **7.5.3 Socio Economic**

Expectations about employment opportunities and community development were extremely high among all stakeholders.

## **Pictorial Evidence of Public Consultation**



Mustafabad



Consultation With Locals

### SOCIOECONOMIC SURVEY AND PUBLIC CONSULTATION

For ascertaining the perceptions of different stakeholders about the project, meetings were held with them. These meetings were held in an open atmosphere, in which participants expressed their views freely. Informal group discussions were also held as an additional tool for the assessment of the perceptions of the stakeholders.

#### Consultation Areas:

1. Bholeke
2. Mustafabad

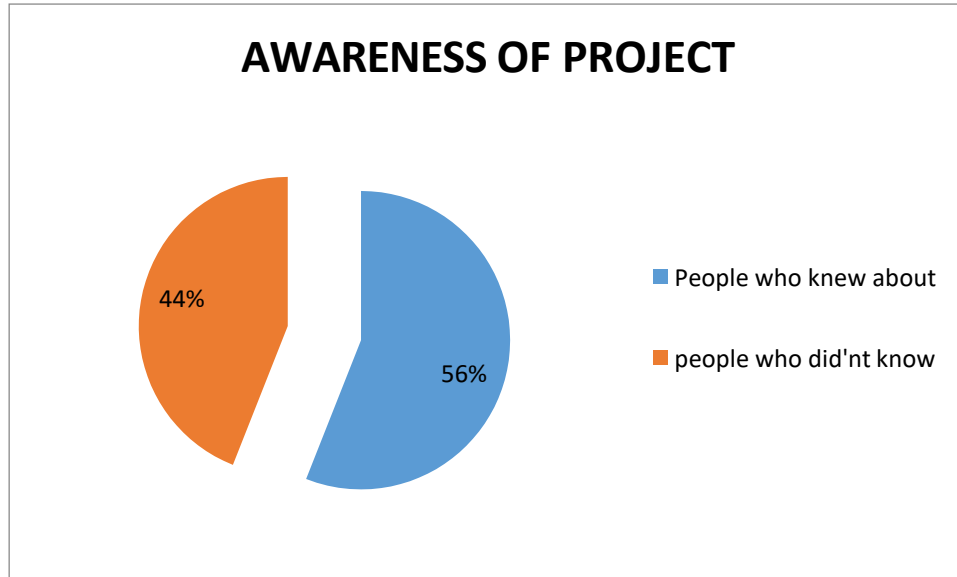
#### 11.1.1 List of people consulted

Name of individuals	Feedback
Muhammad Ijaz	Environmental Enhancement measures should be taken

Muhammad Younas	Tree plantation should be ensured
Nasir Saleem	To avoid any damage proper firefighting equipment should be installed
Adeel	Fire Measures should be ensured
Rahat Chishti	Waste water should be treated with WWTP
Gul Khan	Foul Smell should be controlled
Shehbaz	Project enhance socio-economic status of area
Asghar	Project should be environment friendly
Farrukh pathan	Waste management should be done Properly
Naeem Khan	Appropriate Fire & Safety Measures should be ensured
Naeem Awan	Tree Planation & proper landscaping should be done
Zeshan Arshad	Nuisance should be avoided during operational phase
Raheel	Air Pollution control devices should be installed
Muhammad Boota	No problem will occur as many industrial units already operation nearby

### Awareness Regarding the Project

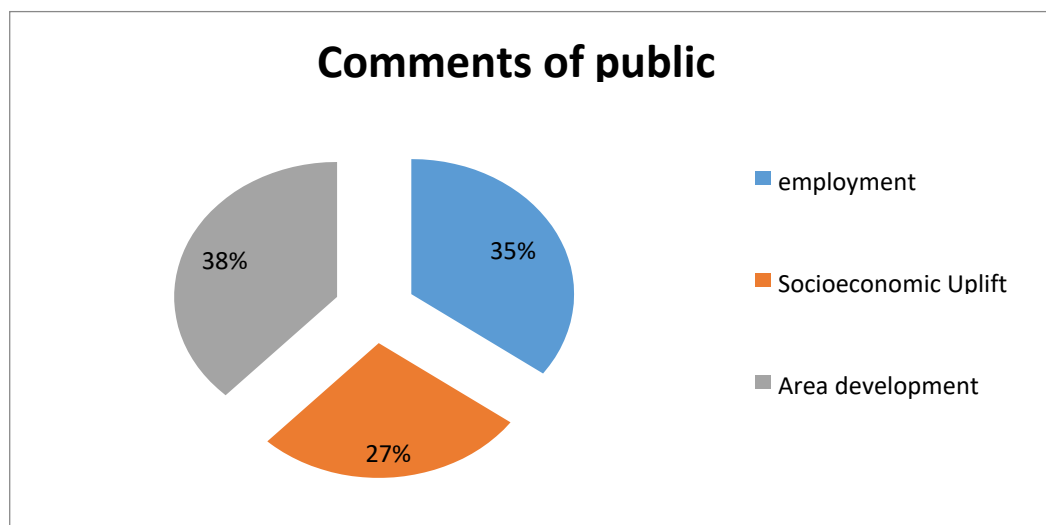
Out of total 10 respondents, 56% knew about the project whereas 44% were not aware of the project planning and implementation.



*Figure 6-6: Awareness of project*

### 11.1.2 Acceptability of the Project

Majority of the respondents, 99% favored the construction of the project keeping in view its importance. People had following comments regarding project:



*Figure 6-7: Comments of public*

**11.1.3 Concerns and solutions:**

COMPONENTS	CONCERNS	SOLUTIONS
<b>Environmental Enhancement</b>	Trees should be planted to avoid any impact	<ul style="list-style-type: none"> <li>Trees will be planted along boundary of project</li> <li>Scrubber Should be installed to control air pollution</li> </ul>
<b>Socio-Economic Uplift</b>	Workers should be hired from local community	<ul style="list-style-type: none"> <li>Proponent has considered hiring labor from local community to enhance the socio-economic condition of the area as this aspect is included in the scope of the project.</li> </ul>
<b>Solid Waste</b>	Proper disposal of solid waste should be practiced	<ul style="list-style-type: none"> <li>A designated area have been planned to establish in the factory for the collection of solid waste. Solid waste will be disposed of regularly from the site as per practice.</li> </ul>

**Stakeholders Consultation**

S #	Participant	Designation	Concerns/Remarks
<b>Responsible Authority</b>			

1	Nasir Saleem	Inspector Environment Kasur	<ul style="list-style-type: none"> <li>• Environmental enhancement measures such as; Tree plantation, monitoring and safety should be ensured</li> <li>• WWTP should be constructed</li> <li>• Preventive measures should be adopted to avoid any unfortunate incident</li> <li>• Tree plantation must be ensured</li> <li>• Monitoring of site &amp; implementation of EMMP</li> </ul>
<b>Other Departments</b>			
1	Syed Usman Ul Hassan	Wildlife & Forest Department	<ul style="list-style-type: none"> <li>• There is no endangered/indigenous species</li> <li>• However, plantation should be done to enhance environment</li> </ul>
<b>Proponent's Environment Management Team</b>			
1	Proponent and Environment Management Team	Muhammad Ijaz	<ul style="list-style-type: none"> <li>• Direct operations at the site.</li> <li>• He will act as team lead.</li> <li>• Interact with other executives and community residents.</li> <li>• Effectively motivate staff to follow protocols and to work productively.</li> <li>• Look after the Health and Safety Related issues.</li> <li>• Responsible for scheduling staff and ensuring that supplies are stocked.</li> <li>• He will play a direct role in developing business, and he will help to produce a business plan to ensure that those goals are met.</li> <li>• Appropriate leakage mitigation measures at place</li> </ul>
<b>Environmental Practitioners and Experts</b>			
1	Dr Afzaal	PhD. Environment	<ul style="list-style-type: none"> <li>• Health and safety arrangements must be provided</li> <li>• All type of waste should be managed to avoid nuisance</li> </ul>
2	DR Umar	PhD. Environment	<ul style="list-style-type: none"> <li>• No waste will be dumped improperly</li> <li>• Quality will be ensured</li> <li>• Leakage mitigation measures should be incorporated</li> </ul>

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Affected and Wider Community			
1	Mr. Khurram	Local NGO	<ul style="list-style-type: none"><li>• Local employment should be ensured</li><li>• Proponent shall work for betterment of community</li></ul>

# **ENVIRONMENT MANAGEMENT & MONITORING PLAN**

This chapter provides a detailed environmental management plan and strategies. The objective of the Environmental Management and Monitoring Plan (EMMP) is to address all the major environmental issues and provide a framework for the implementation of the proposed mitigation measures during the construction and operational phases of the proposed project.

## 9.1. Objective of Environmental Monitoring Plan

The EMP has been prepared with the objectives of:

- Defining roles and responsibilities of the project proponent for the implementation of EMP and identifying areas where these roles and responsibilities can be shared with other parties involved in the execution and monitoring of the project.
- Outlining mitigation measures required for avoiding or minimizing potential impacts assessed by the EIA.
- Developing a monitoring mechanism and identifying requisite monitoring parameters to confirm effectiveness of the mitigation measures recommended in the EIA
- Defining the requirements for communication, documentation, training and monitoring, management, and implementation of the mitigation measures.

## 9.2. Proposed Mitigation Actions

Mitigation planning is the process used by state, tribal, and local leaders to understand risks from natural hazards and develop long-term strategies that will reduce the impacts of future events on people, property, and the environment. It may refer to measures taken to reduce the harmful effects of hazards that remain in potential, or to manage harmful incidents that have already occurred. It is a stage or component of emergency management and of risk management.

### **9.3 Monitoring components**

Baseline environmental monitoring will be carried out for the following essential parameters.

- Noise Levels
- Ambient Particulate Matter
- Ambient Air Gases
- Ground Water
- Wastewater
- Soil Contamination
- Solid Waste
- Vehicular Monitoring
- Flora & Fauna
- Health & Safety
- Machinery Maintenance

ENVIRONMENT MANAGEMENT AND MONITORING PLAN					
S. #.	IMPACT	MITIGATION MEASURE	RESPONSIBILITY		
			IMPLEMENTATION	MONITORING	
A	CONSTRUCTION PHASE				
1.	<b>AIR QUALITY</b>				
	Dust, SO <sub>2</sub> , NO <sub>x</sub> & CO emissions from trucks, cause health issues to workers. Particulate matter will be generated during the Construction.	<ul style="list-style-type: none"> <li>Spray by water trucks to minimize the dust.</li> <li>Maintenance of construction machinery should be made mandatory to reduce emissions.</li> <li>Haul-trucks carrying earth, sand, aggregate and other materials will be kept covered with tarpaulin to reduce dust pollution.</li> </ul>	Contractor	Proponent through Consultant	
2.	<b>NOISE</b>				
	The impact of noise generated during construction	<ul style="list-style-type: none"> <li>Engines of vehicles visiting project site should be properly tuned-up. The green zone of plants will also help decrease sound levels.</li> </ul>	Contractor	Proponent through Consultant	
3.	<b>OCCUPATIONAL HEALTH &amp; SAFETY</b>				
	There will always be the possibility regarding hazard to health and safety of workers to occur during construction stage, lying of piles, and machines installation.	<ul style="list-style-type: none"> <li>First aid facilities should be readily available for the workers at the site. The contractor will ensure the availability of transport and driver to handle any misshape which may occur.</li> <li>Relevant safety devices like belts, gloves and testers should be strictly used by the Labor force at the work site.</li> <li>Implement training programs that support the achievement of the staff and personnel's competency in relation to HSE.</li> </ul>	Contractor	Proponent through Consultant	

<b>4.</b>	<b>DISPOSAL OF CONSTRUCTION DEBRIS</b>			
	Each phase of the development shall produce solid waste, disposal of which, if not managed properly could have negative impacts on the site and surrounding area.	<ul style="list-style-type: none"> <li>A site waste management plan should be made the responsibility of the contractor. The wastes should be properly segregated and separated to encourage recycling of some useful waste materials.</li> <li>Train or educate the involved stakeholders on the importance and means of waste management and handling.</li> </ul>	Contractor	Proponent through Consultant
<b>5.</b>	<b>GROUND WATER QUALITY</b>			
	No appreciable impacts on the ground water quality are anticipated.	<ul style="list-style-type: none"> <li>Avoid accidental spills through good work practice.</li> </ul>	Contractor	Proponent through Consultant
<b>6.</b>	<b>SOIL CONTAMINATION</b>			
	Any improper storage or handling of materials including paints, fuels, solvents, oil, cement, etc. would result in soil contamination.	<ul style="list-style-type: none"> <li>The contractor should be required to impart proper training to their workforce in the storage and handling of materials</li> </ul>	Contractor	Proponent through Consultant
<b>7.</b>	<b>FLORA &amp; FAUNA</b>			
	No negative impact on the ecological environment will take place on account of cutting of any trees in the project area and clearing of vegetation from the site.	<ul style="list-style-type: none"> <li>Trees and ornamental plants shall be planted along the project boundary which increase the aesthetic value of the site and will combat pollution.</li> <li>Landscaping is deemed to be a powerful mitigation activity with a positive impact.</li> </ul>	Contractor	Proponent through Consultant
<b>8.</b>	<b>SOCIO-ECONOMIC ENVIRONMENT</b>			

	Several categories of employees will be required during the construction phase. This would have a positive impact on the local economy and on regional unemployment.	<ul style="list-style-type: none"> <li>• Socially responsible attitude of the project management towards local people and resources can make project people friendly.</li> <li>• Awareness and educational programs introduced by the project management can reduce the fear among the people regarding non-skilled people.</li> </ul>	Contractor & Proponent	Manager Canter
B.	<b>OPERATIONAL STAGE</b>			
1.	<b>AIR QUALITY</b>			
	Air pollution due to transport and vehicle. Due to some fumes of chemical the toxic particles mix in the air	<ul style="list-style-type: none"> <li>• Proper maintenance and tuning of the vehicles can reduce it.</li> <li>• Contain the air tight bottles and pack in which chemicals will be stored.</li> <li>• Wet scrubbers will be installed</li> </ul>	Proponent	EPA
2.	<b>NOISE QUALITY</b>			
	Noise due to movement of vehicles, during traffic of materials	<ul style="list-style-type: none"> <li>• Plantation along with boundary will make buffer zone to avoid noise.</li> </ul>	Proponent	EPA
3.	<b>OCCUPATION, HEALTH, AND SAFETY</b>			

	There will always be the possibility regarding hazards to health and safety of workers to occur during the operational phase of the project.	<ul style="list-style-type: none"> <li>All the workers involved in transport of the materials will be suggested to wear boots, gloves, safety cap to avoid injury.</li> <li>Plantation of trees along the boundary walls will help in reducing the noise levels to enough extent. All the vehicles should be properly tuned up and regular maintenance and periodic monitoring must be done.</li> </ul>	Proponent	EPA
4.	<b>SOLID &amp; HAZARDOUS WASTE</b>			
	The solid/chemical waste may negatively impact the site, the workers, the visitors, and the factory surrounding in different ways including aesthetically, occupationally as well as from health, safety and environment point of view.	<ul style="list-style-type: none"> <li>Domestic solid waste will be collected in waste bins. Hazardous waste will be stored in separate bins.</li> <li>Must use protective gloves while carrying the containers to avoid any hazardous effect.</li> <li>Expired or waste chemicals will be collected in non-reactive packs.</li> </ul>	Proponent	EPA
5.	<b>WASTEWATER QUALITY</b>			
	Domestic wastewater will be produced. Also waste water will be produced during project activities including dyeing.	<ul style="list-style-type: none"> <li>Domestic wastewater will be disposed of after treatment.</li> <li>Effluent Treatment Plant (ETP) will be installed.</li> <li>Wastewater will meet PEQ's.</li> </ul>	Proponent	EPA
6.	<b>FLORA AND FAUNA</b>			

	Excessive plantation shall be done on the walls. This will act as buffer zone and bring healthy change in environment during operational phase of project.	<ul style="list-style-type: none"> <li>The process of plantation should be kept sustainable throughout project life.</li> </ul>	Proponent	EPA
7.	<b>SOCIO-ECONOMIC ENVIRONMENT</b>			
	A few employees will be required in the operational phase, and this would have a positive impact on the local economy and on regional unemployment.	<ul style="list-style-type: none"> <li>The management of the project can capitalize the positive attitude of people of the study area towards this project by offering them maximum employment opportunities.</li> <li>Measurements and steps should be taken to keep undisturbed the privacy of adjoining workplaces.</li> </ul>	Proponent	EPA

### 9.3. Schedule for Implementation and Environmental Budget

#### Schedule of Implementation

Project schedule (tentative) is described hereunder.

Stage I: The clearing of land, preparation of land for construction activity.

Stage II: During this phase machinery will be brought to the site and installed.

Stage III: In this phase all the outstanding activities will be completed, construction activities will be initiated.

Stage IV: after completing construction, employees will be hired, and staff will be assigned their respective work. The operation activities will be initiated.

Activities	Times Frame									
	Four Week	Four Week	Four Week	Four Week	Four Week	Four Week	Four Week	Four Week	Four Week	Four Week
Preliminary Phase (Land Acquiring etc.)	■	■								
Design Phase		■	■							
Pre-Construction Activities Finalization			■	■						
Construction Phase				■	■	■	■			
Purchasing Phase							■	■		
Machinery Installation								■	■	
Commissioning Phase									■	■
Recruiting Of Staff										■
Operation Phase										■



## Environmental Budget

Table 8 Environmental Budget

Sr.no.	Environmental Components	Quantity	Pak. Rs.	Details/ Basis
1	<b>Tree Plantation</b>	100-500	500,000	Cost includes plantation and maintenance up to three years
2	<b>Solid Waste Management/</b>	L.S.	100,000	Lump sum
3	<b>Wastewater management</b>	L.S.	5 Million	Lump sum
4	<b>Health &amp; Safety Measures</b>	L.S.	30,000	Lump sum
5	<b>Miscellaneous Cost</b>	L.S.	12,000	Lump sum
6	<b>Air Quality Monitoring</b>	2	15,000	Lump sum
7	<b>Water &amp; Wastewater Quality Monitoring</b>	2	12,000	2 samples @ 6000/Sample
8	<b>Noise Level Monitoring</b>	2	10,000	2 samples @ 5000/Sample
9	<b>Soil Tests</b>	2	10,000	2 samples @ 5000/Sample
10	<b>Training</b>		10,000	2 samples @ 5000/Sample
11	<b>External Monitoring</b>		50,000	Lump sum
	<b>Total Environmental and Social Management Cost</b>		<b>Approx. 6 Million PKR</b>	

## **9.4. Environment Management Team**

### **Responsibilities of Proponent**

The project owner (proponent) will be responsible for the environmental management and supervisory affairs during the installation and operational phase of the proposed project. An environment personnel designated by the management of proposed project will look after the environment related issues during the operational phase. The responsibilities of environmental personnel are as follows:

1. Monitoring progress of the project as per planned schedule of activities
  2. Exercising oversight over the implementation of environmental mitigation measures by the contractor
  3. Documenting the experience in the implementation of the environmental process
  4. Preparing training materials and implementing programs
  5. Maintaining interfaces with the other lined departments/ stakeholders
  6. Reporting the status of EMP implementation to the management
-

## **Responsibilities of project contractor:**

Contractor appointed for the commissioning of the project including the auxiliary facilities is responsible for:

- Implementation of all provisions of the EMMP and with any environmental and other codes of conduct required by the project.
- Provision of proper Personal Protective Equipment (PPE) to the workers and train them for their proper use.

## **9.5. Monitoring Program to Assess Performance**

Following functionaries will be involved in the implementation of EMP or to assess output:

1. The project owner (proponent) as the project proponent and owner of the EMP.
  2. Project excavation contractor(s) as executors of the EMP during installation phase of the project.
  3. Transportation & Maintenance (O&M) and the health, safety and environment team of the proposed project as an executor of the EMP during the transportation phase of the project.
-

## 9.6. EMP Reporting and Review Procedure

Category	Impact	Project Activity	Monitoring Mechanism	Frequency	Monitoring Agency
<b>Construction and Operational Phase</b>					
Land Resource	Solid Waste	Implementation of Solid waste Management system	Record keeping and timely transfer of waste from bags to the disposal Site for disposal	Daily	Manager HSE/Project Proponent
	Soil Contamination	Implementation of Management Plan	Visual monitoring and complete soil analysis	Daily and annually	
Ecological	Flora	Uprooting of trees	Inventory of uprooted	During Baseline	
Air Resource	Air Emission	Dust emissions during Construction and Operation	Monitoring of the emissions as per applicable standards Water sprinkling will be done regularly to avoid dust emissions	Once before start of operation and after that as when required during operation	
	Dust				
Noise	Noise Pollution	Development/operational material transportation	As per applicable standards	Fortnightly	
Water Quality	Wastewater generation	Domestic wastewater, due to construction activities	Water quality testing	Monthly	
Health and Safety	Health risk	During construction and operational phase mainly due to more chemical usage	Keep record of workers as they use PPE's and follow safety signs and instructions	Daily	
Resource		During construction phase	Trees and vegetation during operation phase	Survey, once in a year and after the completion of the Project	

## 9.7. Training Schedule

Proponent provides periodic Environmental and HSE trainings to workers working in their existing plants. The management of Proponent feels HSE is important for moral, legal, and financial reasons. The management of proponent has developed strict SOPs for Health and Safety of workers. These SOPs includes SOPs for Personal protective equipment's, Risk Assessment, permitto work, SOP for work at height, Fire Safety and Prevention, Confined Space entry etc. A comprehensive annual training calendar has also been developed for training on topics of HSE for management as well as labors. A training log will be maintained by Site engineer and contractors.

Participants	Date, Time & Location	Training Topics	Schedule	Responsible Authority
Staff of team management and contractor	As specified	<ul style="list-style-type: none"> <li>• Introduction to the project and EMMP.</li> <li>• EMMP communication, documentation, monitoring and reporting requirements.</li> </ul>	Every month	Project manager
All site personnel	As specified	<ul style="list-style-type: none"> <li>• Site induction training on HSE system and requirements</li> <li>• Environmental sensitivities of the project area</li> <li>• Communication of environmental problems to corresponding officials</li> <li>• Waste disposal</li> </ul>	After every week	Project manager
Drivers	As specified	<ul style="list-style-type: none"> <li>• Road safety</li> <li>• Road restrictions</li> <li>• Vehicle restrictions</li> <li>• Waste disposal</li> <li>• Defensive driving</li> </ul>	After every 3 months	Project manager
Camp Staff	As specified	<ul style="list-style-type: none"> <li>• Camp operations</li> <li>• Waste disposal</li> <li>• Good housekeeping</li> </ul>	Monthly	Project manager

### 1.1. Environmental Monitoring program

It will be in the fitness of the things to operate this project under the Environmental Management plan (EMP). The EMP will ensure that even all type of pollutants from project is within the prescribed limiting values of the PEQs. Thus, the environment and human health around the project will be safeguarded.

Regular monitoring of all the significant environmental issues is essential to check the compliance status of EMP.

The main objective of the monitoring will be;

- To verify the results of the environmental study with respects to the proposed project.
- To estimate the trends of concentrated values of the issues, which have been identified as critical and then planning the mitigating measures.
- To assess the efficiency of pollution control mechanism.
- To ensure that any additional parameters, other than those identified in the IEE report, do not turn critical after the commissioning of proposed project.

Sr. no.	Parameter/ receptor	Location	Monitoring Mechanism	Monitoring and Reporting Frequency
1	Water quality	<ul style="list-style-type: none"> <li>• Ground water</li> <li>• Surface water</li> </ul>	Discrete grab sampling and laboratory testing of water sample	Sampling and laboratory testing should be done on monthly basis during the Operation

				<p>Discharge from the unit should be tested for temperature, pH and turbidity.</p> <p>Treated effluent discharges from the worker's camp and process water to be tested for pH, TSS and BOD5</p>
2	Dust emission	<p>Track along the roads during construction periods</p> <p>During Operational</p>	Ambient particulate matter monitoring	<p>Sampling and laboratory testing should be done on monthly basis during the construction and annually during the operational stage</p>
3	Noise levels	<ul style="list-style-type: none"> <li>• Camp sites</li> <li>• Selected locations along the</li> </ul> <p>Access</p>	Noise meter	<p>Monthly during the operational stage</p>
4	Stack emissions	<p>Silencer of heavy machinery, trucks and other</p> <p>Vehicles</p>	<p>Emissions monitoring system.</p> <p>Monitoring of ambient air quality</p>	<p>Quarterly monitoring of PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>x</sub>, CO, VOCs during the operation Stage</p>

# Reporting

<b>Sr. No</b>		<b>Detail</b>
5.1	Clear reporting style supported by maps or other descriptive details	The said instructions have been followed in this report.
5.2	Specific term of references should be present in report	This is attached with this report.
	Appendices  Glossary	This is attached with this report.
	1- List of Abbreviations	This is attached with this report.
	2- List of individuals or organizations consulted along with their written feed back	This is attached with this report.
	3- Sources of data and full list of all reference material used	This is attached with this report.
	4- Terms of references for environmental reports	This is attached with this report.
	5- List of names, qualifications and roles of team members carrying out the IEE/EIA study	This is given at Page 12 of this report.

# Annexure

## **REFERENCES**

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- Pakistan Environmental Protection Agency (Review of IEE/EIA) Regulations, 2022.
- The Land Acquisition Act, 1894
- The Punjab Local Government Ordinance, 2001

**LIST OF ABBRIVIATIONS**

SO <sub>2</sub>	Sulphur Dioxide
PP	Polypropylene
°C	Degree Celsius
PM10	Particulate Matter >10
EIA	Environmental Impact Assessment
EMMP	Environment Management & Monitoring Plan
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
EPD	Environment Protection Department
PEQS	Punjab Environmental Quality Standards
SPM	Suspended Particulate Matter
HSE	Health Safety and Environment
UDT	Urban Development and Tourism
SEP	Standard Engineering Practices
ERP	Emergency Response Plan
SWM	Solid Waste Management
IEE	Initial Environmental Examination
km	Kilometer
CUM	Cubic Unit per Meter
GWT	Ground Water Table

Ltd.	Limited
HC	Hydrocarbon
mm	Millimeter
NEQS	National Environmental Quality Standards
No.	Number
NOC	No Objection Certificate
NO <sub>x</sub>	Oxides of Nitrogen
PA	Protected Area
PEPA, 1997	Pakistan Environmental Protection Act, 1997
PEPA, 2012	Punjab Environmental Protection (Amendment) Act, 2012
PEPO	Pakistan Environmental Protection Ordinance
PKR	Pakistani Rupees
PM	Particulate Matter
PPEs	Personal Protective Equipments
Pvt.	Private
SFT	Square Foot
SOPs	Standard Operation Procedures
SO <sub>x</sub>	Oxides of Sulphur
TMA	Town Municipal Authority
WAPDA	Water and Power Development Authority
WASA	Water and Sanitation Agency
WHO	World Health Organization

**LIST OF EIA STUDY TEAM WITH QUALIFICATION AND POSITION IN  
TEAM.**

Name	Qualification	Position in the EIA/EIA Team
<b>Muhammad Rehman Majeed</b>	M.Phil (Environmental Science) GCU Lahore	Project Incharge And Supervisor
<b>Ammara Anwar</b>	MS Environmental Science PU-Lahore	Team Leader and Coordinator (Author of the Report)
<b>Mohsin Ali</b>	M.Phil Environmental Science GCU Lahore	Senior Environmentalist (Field Analyst)
<b>Faisal Irshad</b>	BS (Hons) Environmental Engineering (UET Lahore)	Environmental Engineer
<b>Anum Waheed</b>	BS (Hons) Environmental Science (GCU Lahore)	Research Associate (Author of the Report)

## **SOCIAL SURVEY FORM**

Questionnaire for the project of

**M/S “Canter Pvt Ltd**

**(Dyeing Unit)”**

### STAKE HOLDER’S INFORMATION:

1	Name	
2	Father’s Name	
3	CNIC Number (Optional)	
4	Age	Years
5	Gender	Male          Female
6	Qualification	Under matric Matriculation Graduate Post graduate
7	Marital status	Married          Single
8	Employment status	Employed Unemployed
9	Income group	Below Rs: 20,000 / month Between 20,000- 30000 Above Rs: 30000 / month
10	Do you know about proposed unit establishment	Yes          No
11	Should it be done?	Yes          No
12	What social change it will result?	Improvement No change Deterioration
13	What economical change it will result?	Improvement No change

			Deterioration
14	What environmental change it will result?	Without precautionary measures	Improvement No change Deterioration
		If adequate precautionary measures are adopted	Improvement No change Deterioration
15	Your suggestions to care for Environment		
16	Any other suggestion for benefit of the community?		

Signature:\_\_\_\_\_