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LIST OF ABBREVIATIONS

Approx.	Approximately
°C	Degree Celsius
dB (A)	A weighted Decibel Scale
EIA	Environmental Impact Assessment
ETP	Effluent Treatment Plant
EMMP	Environmental Management and Monitoring Plan
EMP	Environmental Management Program
Engr.	Engineer
EPA	Environmental Protection Agency
EPD	Environmental Protection Department
Hons.	Honors
Km	Kilometer
Ltd.	Limited
m^3/h	Cubic Meter per Hour
NEQS	National Environmental Quality Standards
No.	Number
NOC	No Objection Certificate
PEPA, 1997	Pakistan Environmental Protection Act, 1997
PEPA, 2012	Pakistan Environmental Protection (Amendment) Act, 2012
PKR	Pakistani Rupees

PM	Particulate Matter
PPEs	Personal Protective Equipments
Pvt.	Private
SOPs	Standard Operating Procedures
WAPDA	Water and Power Development Authority
WASA	Water and Sanitation Agency
FESCO	Faisalabad Electric Supply Company

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EXECUTIVE SUMMARY

1. Title and location of Project

This executive summary presents an overview of the main findings of Environmental Impact Assessment (EIA) Report for ***"Manufacturing of Plastic Containers & Printing by M/S Quality Plast (Pvt) Ltd"*** at Plot# 39, Phase-A1, M-3 Industrial City Sahianwala (FIEDMC) , Faisalabad. The purpose of said project is to meet the demand of plastic containers. For this instance, EIA Study of aforesaid project has been conducted to accord Environmental Approval/NOC from Environmental Protection Agency (EPA) under Punjab Environmental Protection (Amendment) Act, 2012 and IEE/EIA Regulations 2000. The process for conducting environmental assessment and the results of EIA Study are described in detail in this document.

Introduction

The aforesaid project fall under ***Category B (9)*** Schedule II i.e., ***Manufacturing and Processing*** **(synthetic resins, plastic & man-made fibers, paper & paperboard, paper pulping, plastic products, textile (except apparel), printing & publishing, paints & dyes, oils & fats, and vegetable ghee project with total cost more than PKR 10 Million)** Review of IEE and EIA Regulations, 2000. Hence, it requires an EIA Study. Thus, an EIA Study has been conducted and report has been prepared for duly submission in EPA to accord Environmental Approval/NOC.

The estimated project cost is **PKR 127 Million** the breakdown of the project cost is given in **Chapter 05** of this EIA Report and the environmental budget allocated for the protection of environment is **PKR 03 Million.**

A brief outline of Project including name of Proponent and organization preparing report

Project Name	Manufacturing of Plastic Containers & Printing by M/S Quality Plast (Pvt) Ltd
Location	Plot# 39, Phase-A1, M-3 Industrial City Sahianwala (FIEDMC) , Faisalabad
Proponent Name	Mr.Abdul Hameed S/o Abdul Rasheed
Project Cost	**127 Million Approx.**
Total Area	3.74 Acre
Consultant Name	SMART SOLUTIONS
Product	Plastic containers
Raw material	Pellets
Product Capacity	7000-10000 Containers of 16 to 210 LTR capacity per 24 hours.
Nature of the Area	Industrial
Waste Management	Domestic solid waste will be managed as per standard practices of area Process waste can be recycle and reuse.
Source of Power	National Grid
Period of Construction	Approx. 01 Year
Site Coordinates	31.6568606 North and 73.2145780 East

5. Major Impacts and Recommended Mitigation Measures

Following impacts are likely to occur during constructional and operational phase of aforesaid project:

5.1 Construction Phase

Anticipated impacts associated with the construction phase included noise (machine noise and vehicular noise), air emissions from earthwork and construction machinery and vehicles, and soil contamination due to leakage from or accidents of the construction or transportation vehicles or during on-site refueling, solid waste from construction activities, municipal water and safety of the workers and employment conflicts as the major adverse environmental impacts. Since the project is to be commenced in a confined area owned by proponent and no human settlement exists within safe radius of selected site, construction related impacts haven't extended to the community.

Mitigation measures recommended adopted during construction phase includes; running the machines/vehicles on good quality fuels, good working order ensuring

regular maintenance, tuning and servicing, moreover providing them with emission control devices, such as mufflers and silencers, etc. Water suppression and covered transportation and storage of the construction materials and slow driving on unpaved roads were adopted to control dust emission. Regular testing for leakage detection will also be ensured. Solid waste of construction activities was used for flooring, while the remaining solid waste will be managed as per practices in the area.

For community safety, irrelevant persons weren't allowed inside the facility. Safety of the workers will be ensured by adopting SOPs for all jobs, training the workers to follow SOPs, discouraging any careless attitude of workers and providing the workers with and encouraging them to use PPEs.

5.2 Operational Phase

No process water consumption, water will only be used in cooling tower that will recirculate. Proper ventilation of building will be ensured to save energy. Domestic solid waste will be handled by the municipality practices of the area. No process waste will be generated it will be reuse in process. Machinery will be regularly serviced and tuned to mitigate noise at source, noise barriers will block noise propagation and receptors will be protected by the use of PPEs. An Emergency Response Plan (ERP) will also be in place and the workers will be trained and guided about it.

7. Proposed Monitoring

During construction, ambient air quality for dust level in particular, vehicle and equipment exhaust, noise level, solid waste management and soil contamination, and community and workers' safety (visual) need to be monitored on regular basis.

During operation, ambient air quality for dust level in particular, noise level and soil contamination, and community & workers safety need to be monitored on quarterly basis (if required). Monitoring Plan has been included in **Chapter 05**.

1 INTRODUCTION

1.1 Purpose of the Report

For any development project to be initiated in Punjab, it is mandatory to accord Environmental Approval from EPA Punjab under **Section-12** of the ***Punjab Environmental Protection (Amendment) Act, 2012*** by filing an IEE or EIA before EPA Punjab, as may be defined in ***Review of IEE/EIA Regulations, 2000*** or recommended by EPA Punjab. This Report represents the Environmental Impact Assessment (EIA) Study for implementation of "Manufacturing of Plastic Containers & Printing by M/S Quality Plast (Pvt) Ltd". For this purpose the proponent engaged environmental consultants; **M/S SMART SOLUTIONS** to conduct EIA Study of aforesaid project. The purpose of this study is to identify the environmental baseline i.e. physical, biological and socio-economic/cultural conditions and assess all possible impacts arising during the construction and operation phase of project and to find out appropriate measures for their mitigation, to either eliminate those impacts or to bring them to acceptable level and formulation of Environmental Management Plan (EMP) for implementation of the project in environment friendly manner.

This EIA Report is prepared by critical examining environmental factors which might be affected due to said project implementation. This report provides the basis for a determination of degree of environmental impacts of project. This report provides relevant information, as required under the officially approved format, to help the decision makers i.e. EPA Punjab before issuing for the Environmental Approval/NOC.

1.2 Identification of the Project & Proponent

The details of proponent of aforesaid project are given below:

Table 1: Details of Proponent

Details of Proponent	
Name	Abdul Hameed
Designation	Chief Executive M/S Quality Plast (Pvt) Ltd
Contact#	03008663116

1.3 Consultant's Details

The proponent has engaged M/S SMART Solutions to conduct the EIA Study for the establishment of aforesaid project in accordance with Punjab-EPA guidelines. For this purpose, Company has engaged the group of professionals which comprises of environmental specialists, environmental engineers. Following list of team members are engaged in conducting this EIA report.

Table 2: Team list along with roles

Sr. no.	Name	Qualification	Roles
1.	Muhammad Adnan Naeem	MSc. Environmental Chemistry	Report writing, data compilation and follow-up
2.	Saman Fatima	MPhil Env. Sciences	Report reviewer
3.	Safi Ahmed	MPhil Env. Sciences	Social survey
4.	Farman Saif	MBA (Marketing)	Baseline data collection
5.	Abdul Hanan	BS (Hons) Botany	Technical input

1.4 Brief description of Nature Size & Project Location

The aforesaid project under study is titled as "Manufacturing of Plastic Containers & Printing by M/S Quality Plast (Pvt) Ltd". The production capacity of aforesaid project is 7000-10000 Containers of 16 to 210 LTR capacity per 24 hours. Polymer will be used as raw material. The total area of aforesaid project is 3.74 Acre.

This project is located at PLOT# 39, Phase-A1, M-3 Industrial City Sahianwala (FIEDMC), Faisalabad. The coordinates of site are; 31.656861 North and 73.2145780"East

The location of the aforesaid project is:

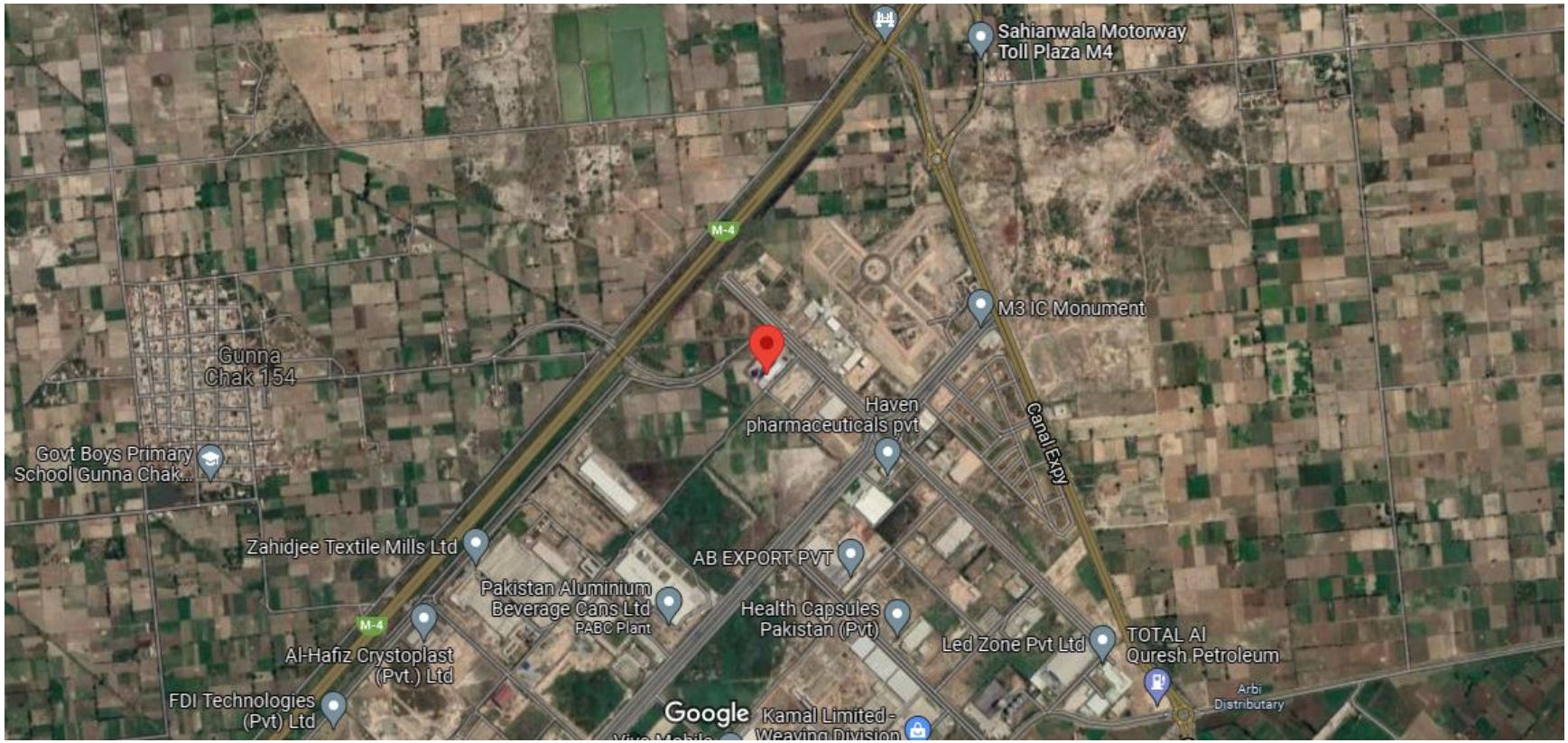


Figure 1: Project Location

1.5 Purpose of Report

The main objectives of this EIA Study were:

- To determine and record the state of the environment of the project area to establish a baseline in order to assess the suitability of the project in the proposed area.
- To identify pre-construction/design, renovation & installation and operation activities and to assess their impacts on environment.
- Provide assistance to the proponent for planning, designing and implementing the project in a way that would eliminate or minimize the negative impact on the biophysical and socio-economic environment and maximizing the benefits to all parties in the cost effective manner.
- To present mitigation and monitoring plan for smooth implementation of the suggested mitigation measures and supervises their efficiency and effectiveness.
- To provide opportunity to the public for understanding the project and its impacts on the community and their environment in the context of sustainable development.
- Prepare an EIA Report for submission to the EPA, Punjab for Environmental Approval (NOC).

2 SCREENING

For the prediction and mitigation of impacts associated with project implementation at an early stage of project development, it is pre-requisite under the environmental laws to undertake Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Study as the case may be. Based on its nature, size and related impacts, the project under consideration has been categorized for EIA Study as stated in ***Regulation 03 of Statutory Notification (S.R.O 339(1)/2001).*** As per the statutory notification of Review of IEE and EIA Regulations, 2000 made under Section 12 of Punjab Environmental Protection Act, 1997 (Amended 2012), states;

"No proponent of a project shall commence construction or operation unless he has filed with the Government Agency designated by Federal Environmental Protection Agency or Provincial Environmental Protection Agencies, as the case may be or where the project is likely to cause an adverse environmental effects an Environmental Impact Assessment (EIA) and has obtained from the Government Agency approval in respect thereof."

The aforesaid project i.e., ***"Manufacturing of Plastic Containers & Printing by M/S Quality Plast (Pvt) Ltd"*** falls under **Category B (9);** Manufacturing and Processing (*Synthetic resins, plastic and man-made fibers, paper and paper board, paper pulping, plastic products, textile (except apparel), printing & publishing, paints & dyes, oils, fats and vegetable ghee projects, with total cost more than Rs. 10 million)* mentioned under Schedule II.

Thus, an EIA Study has been conducted and report has been prepared for duly submission in EPA to accord Environmental Approval/NOC.

3 SCOPING

3.1 Spatial and temporal boundaries of Environmental Assessment

Due to installation of current project land use will change from open land to Plastic Containers manufacturing & Printing unit by M/S Quality Plast (Pvt) Ltd. Within radius of 5-km several industries and residential areas can be seen in below fig but current project will be installed by adopting proper mitigation measures to avoid disturbance to local community. In current project no significant emissions will be observed because operation will be done in controlled environment and wastewater will be treated before disposal to ensure PEQS. No environmental sensitive area is present within safe distance that could be impacted due to current project installation. The said project is located within designated and approved industrial estate.

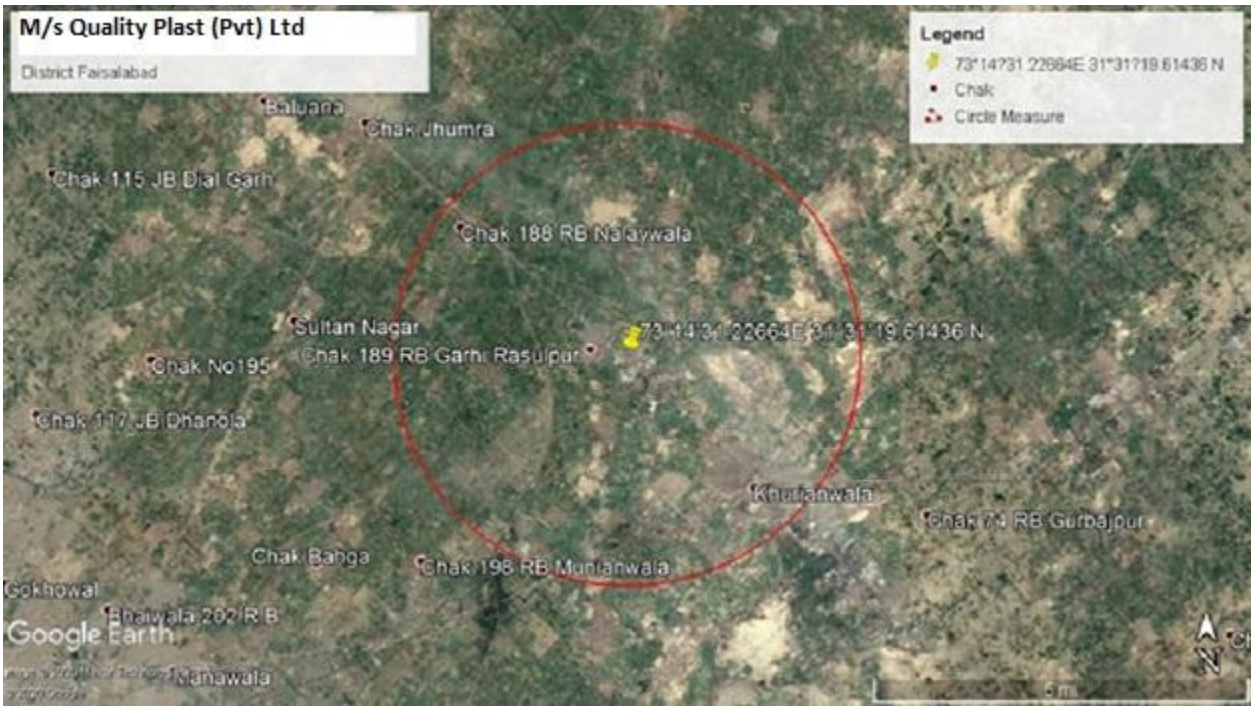


Figure 2: 5-Km radius of Project site

3.2 Important issues and concerns raised during consultation

During consultation it was observed that maximum of people was in favor of project. As said project is located within designated and approved industrial estate so no important issue was raised during consultation. Only few were observed as mentioned below;

- Locals should be preferred for the job opportunities.
- 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.
- Plantation should be carried out at extensive scale.
- Noisy activities should be confined.
- Indigenous tress around the facility should be planted to control air pollution.
- Tree cutting should be avoided to the extent possible.

3.3 Significant impacts and factors to be determined

Main impacts and factors to be determined are

- Occupational Health and safety
- 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

4 CONSIDERATION OF ALTERNATIVES

4.1 Site Alternative their selection and rejection criteria

The selected site for said project is located within designated and approved industrial estate. The area is developed as an industrial and many industries are in operation in project proximity. The selected project site is ideal from the point of view of compatibility with other land use of the area. The site is also spacious enough to accommodate the proposed facility and its infrastructure. Due to existing infrastructure and its strategic location, it is our considered view that the selected site is ideal and suitable for the proposed development. Additionally, the piece of land is owned by Proponent.

4.2 Design/technology alternatives, their selection and rejection criteria

For Installation of current project state of art technology will be selected to avoid emissions. Proponent is doing heavy investment for this project so latest/state of art technology will be preferred to ensure good quality products. List of machinery along with technology specifications is annexed.

4.3 Environmental Alternatives, their selection and rejection criteria

After completion of construction, proper landscaping will be done. Moreover, the proponent is very concerned and conscious about the quality and equally about the environmental protection and resource conservation. The design of building will be done in environmental friendly manner. State of art machinery will be selected with minimum power consumptions and less emissions. Moreover, extensive tree plantation will be done.

4.4 Economic Alternatives, their selection and rejection criteria

- Currently selected technology and design is economically efficient.
- Tree plantation will be done that will reduce temperature of the area and also act as noise barrier.
- Cost effective technology will be adopted for operation of aforementioned unit.
- Building design will be such that maximum use of day light and LED lights will be installed to minimize electricity consumption.

5 DESCRIPTION OF THE PROJECT

General

This section covers the project comprehensively. It holds salient features including; location, project site layout, objectives, process employed, site alternatives, cost and magnitude of operation, etc.

5.1 Project Objective

The objective of aforesaid project i.e., Plastic containers manufacturing and printing unit is to go for forward integration and manufacture high quality plastic containers with good market potential. The project will encompass modern state-of-the-art facility with the objective of producing superior quality products. The project will have following advantages:

- The project will provide additional income and gainful employment to local people.
- It will help to produce superior quality products for end consumers.
- The said project is itself value addition project.
- Socio-economic up-lift of the proponent
- Creation of new job opportunities and promoting income prospects for those engaged in the allied activities associated with operation of project is considered as indirect objectives of the project.

5.2 Project Location and Layout

The site under consideration for the establishment of "Manufacturing of Plastic Containers & Printing by M/S Quality Plast (Pvt) Ltd" is located at PLOT# 39, PHASE-A1, M-3 INDUSTRIAL CITY SAHIANWALA (FIEDMC) , FAISALABAD. The coordinates of site are; 31°39'24.7"North and 73°12'52.5"East.
The location of aforesaid project is given below and the layout of aforesaid project is attached as **Annex-XI**



Figure 3: Google Map showing distance of various Receptors from Proposed Site

5.3 Land use on the site

For above-said project Land use will change from open land to industry. Currently no construction activity has started yet.

5.4 Road Access

The site is accessible through main Pindi bhattian-FSD motorway. The road access map of project is attached below:

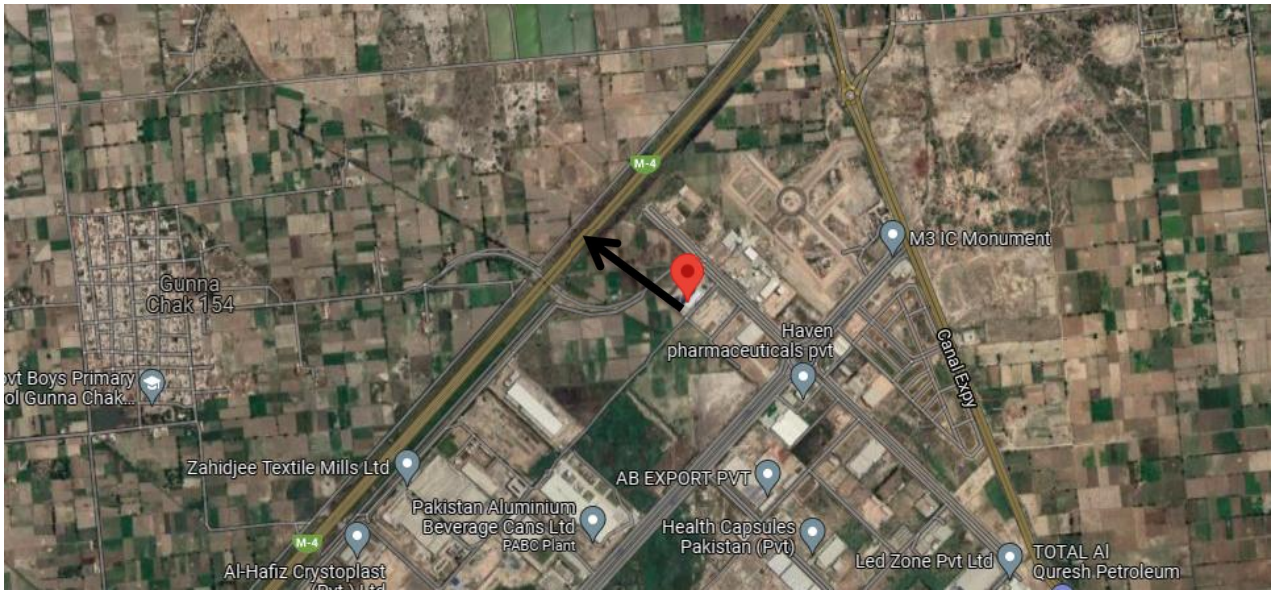


Figure 4: Road Access Map of Proposed Site

5.5 Vegetation Features

Agricultural crops, bushes and wild grasses are present in the nearby surroundings of project area. During operation phase, green belts will be developed and it will serve as a useful buffer to contain the menace of pollution from different sources. As a control measure of atmospheric pollution, as a barriers noise generated within the premises it is recommended to develop green belt.

5.6 Cost and Magnitude of Operation

The estimated initial capital cost of aforesaid project is **approximately 127 Million**. Purchase of raw material, operation and maintenance of production machinery are the costly activities involved in the operation phase of said project. Equipment safety will be assured if these operations are carefully managed. No separate fund allocation is required.

Figure 5: Cost Breakup

Sr#	Components	Cost (PKR)
1	Land Cost	40 Million
2	Civil Work (construction,	50 Million

	installation & erection of machinery)	
3	Equipment/Machinery	34 Million
4	Environmental Budget	03 Million
Total		**127 Million Approx.**

However, budget will be allocated for purchase and maintenance of standardized PPEs for workers and for waste management and environmental enhancement. Despite these costs, this project was found to be financially feasible in the feasibility report. Magnitude of operations includes:

- Applying for and getting all necessary approvals and contracts
- Installation of machinery
- Installation of firefighting equipment
- Marking of emergency exits and assembly points
- Tree plantation and landscaping

The allocated environmental budget is **PKR 03 million approx.** as mentioned in project cost breakup. The allocated environmental budget will be spent on landscape/green zone management and solid waste management. The proponent will plant indigenous and ornamental plants to increase the aesthetic value of the area. Thus, the project is also a source of employment for locals and would help in economic development activities of the area.

5.7 Schedule of Implementation

The proponent intended to complete the construction in a period of a year.

Table 3: Schedule of Implementation

Sr. #	Activities	6 Months			6 Months		
		2M	2M	2M	2M	2M	2M
1	Detailed Designing						
2	Mobilization of Contractors						
3	Preparation of site						
4	Civil Works						
6	Installation of facilities						

5.8 Project Description

Extrusion Blow Molding

In extrusion blow molding a round, hollow tube or parison is formed by an extruder. A mold cavity, composed of two halves, closes around the parison and pinches off one end. Compressed air expands the parison to conform against the cold mold cavity walls. When sufficiently cool, the mold opens and the container is removed and trimmed of excess plastic or flash. Flash, a basic characteristic of extrusion blow molding, is formed when the parison is pinched off by the mold. Since most resins can be reprocessed, the flash is not wasted but is used as "regrind." Wall distribution, thickness and weight can be controlled by parison programming. While the parison is extruded, programming changes in the relation of mandrel and die can be used to shift material from heavier, stronger areas to lighter, weaker areas. This method aids significantly in maximizing container performance and minimizing container weight and cost.

Injection Blow Molding

The process of injection blow molding (IBM) is used for the production of hollow plastic objects. Injection blow molding is performed in basically three stages. At the first stage, melted plastic is injected into a mold cavity to produce a preform parison. The preform is shaped like a test tube, but with a molded screw finish at the top. The preform is then transferred to the second, blow-molding stage. Air is blown through a core pin to expand the preform against a cold mold cavity. The container is then transferred to the third station for ejection. Two main types of processes exist:

One-step injection molding – the melted polymer is injected into the final shape of the container in a cold mold, it's then released.

Two-step injection molding – the first step in the injection of melted plastic in a mold, resulting in the creation of a pre-form. The cold preform is then taken onto another machine, enclosed in a mold, heated, stretched with a pin to reach the desired length and then blown in the shape of the chosen mold.

Stretch Blow Molding

Stretch blow molding uses either the injection or extrusion blow molding process as a basic foundation. In either case, a preform parison is molded and then transferred to a blow molding cavity. The parison is stretched biaxially during blow molding to orient and align the molecules. This orientation improves the gas barrier, stiffness, clarity and impact strength of the container. As a result, containers can be reduced in weight. Resins which can be stretch blow molded include PET, PVC and Polypropylene. PET has by far the most common use in carbonated beverage containers.

Injection Molding

Injection molded containers can be straight sided or tapered, narrow or wide mouth shapes such as jars, tubs and vials. Material is injected into a cavity where pressure forces the resin to conform to the mold body. Containers are capable of holding to a tighter dimensional tolerance, and are more uniform in wall distribution. A wide variety of resins can be processed via the injection molding process, the most popular being polypropylene, styrene and polyethylene.

Multi-Layer Bottles - Co-Extrusion

The newest of bottle blowing technology, co-extruded multi-layered bottles bond various plastic resins together with tie layers to produce bottles with barrier and heat-stable qualities suitable for use with hot-filled, hermetically sealed food products. Currently EVOH (ethylene vinyl alcohol) is used as the central layer because of its barrier properties. Polypropylene or polyethylene is used as the inner and outer walls because of their heat tolerance and clarity. The hot-fill process creates a vacuum which will draw in the side walls of a plastic container. This effect must be compensated for in bottle design, either by using an oval shape which will cloak the indentation or by employing strengthening ribs or panels in a round bottle design.

Process flow is given below;

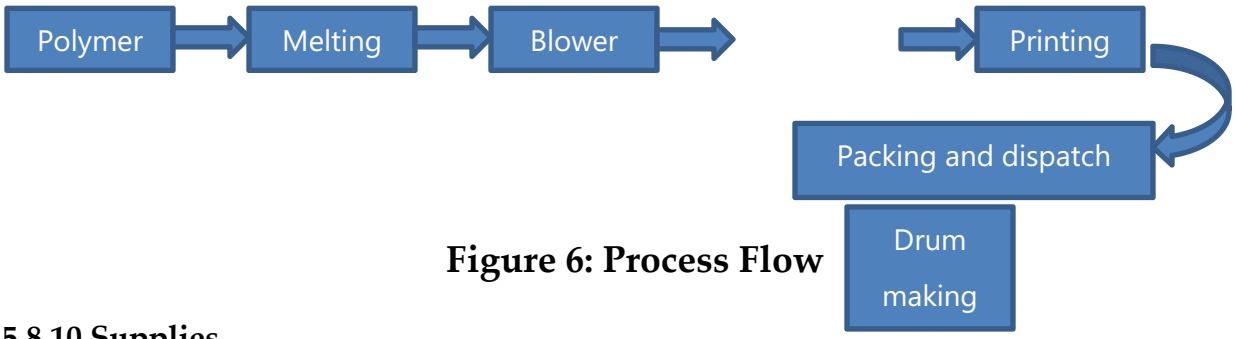


Figure 6: Process Flow

5.8.10 Supplies

Following supplies will be required/utilized for the manufacturing of proposed unit

5.8.11 Water Supply

The source of water for the proposed site is ground water at the depth of 150-200 ft. The water consumption will only be done for domestic purpose. Approximate water consumption for domestic activities will be 1.4m^3/d. Process water consumption will only for cooling purpose in chillers.

5.8.12 Electricity

FESCO (WAPDA) will be the main source of the power.

5.8.13 Manpower

There will be approximately 15-20 workers during construction phase and 40-60 workers on the unit during operational phase.

5.8.14 Personnel Protective Equipment

Following Personnel Protective equipments will be provided to the workers for their safety:

- Protective Gaggles
- Protective leather/rubber shoes
- Gloves-leather, canvas, rubber and plastic
- Gas masks
- Protective shields
- Helmets
- Overcoats

5.8.15 Management Plans

For the management of the wastewater and air emissions following measures will be adopted:

5.8.16 Wastewater

The wastewater will be generated from chillers that can be recycled and used for horticultural activites whereas, wastewater generated from domestic activities will be treated through septic tank before disposal in sewerage system of designated and approved industrial estate.

5.8.17 Air Emissions

No air emission is likely to be released during operation of aforesaid project; except the dust or particulate matter to be produced during floor cleaning and other such operations, which also will not be posing any environmental threat (will not breach the safe standards). Wet suppression will be done to control dust emissions.

5.8.18 Noise

All the machinery will be installed and operated in a closed hall and from operation of machinery; generator noise will not be a problem as the residential area is at adequate distance. Further, administration of unit it will take the precautionary measures to avoid the noise emissions. The project site is located within designated and approved industrial estate. There is no possibility of noise pollution from aforesaid activity. Installation activities will however add great to the noise, but that noise will be temporary and will be mitigated by measures as stated in **Chapter-08**.

Further trees to be planted within the facility which will act as noise absorbers and workers will used as PPEs whenever and wherever might be necessary.

5.8.19 Solid Waste

Waste generated during construction included mostly construction material (mainly steel and wood), empty cement bags, excavated earth and general packaging waste. Waste will be stored within the facility until transfer to the ultimate waste disposal site. Estimated solid waste generated during operational phase comprises of plastic material that can be recycle and reuse in process and this process is known as flashing.

5.9 Relocation and Rehabilitation Plans

There exists no human settlement within a safe radius of the selected project site to be displaced owing to the commencement of the Project. No structure of any significance stands at the site to be relocated or dismantled. Land is already under proponent's ownership, and no fresh land is to be occupied; hence, no relocation and rehabilitation is required.

6 DESCRIPTION OF THE ENVIRONMENT

This chapter provides baseline data (physical, biological and socio-economic parameters) related to the project and study area. The information has been compiled by using primary and secondary data resources. This chapter also refers to the theoretical analysis of the methodology adopted for collection of primary and secondary baseline data. The underlying principles and practices adopted in this regard are also discussed.

Methodology

The methodology employed to collect the baseline data and information regarding the social structure and various related parameters as discussed in sub-sections below:

Data Collection

The primary data was collected by visiting the project area and its nearby communities. The secondary data regarding physical parameters (topography, geology, seismology, and climate) was obtained by visiting relevant various government departments and their official websites. The biological parameters such as flora and fauna were studied by preparing a floristic list based on visual observation and fauna was studied by using opportunities approach. The species were recorded with reference to their existence in the project area. Information on wildlife fauna specie mammals, amphibians, reptiles, birds, etc.) in the assessment area was compiled based on opportunistic observation, gathering the existing information and consultation with local experts, community members and government and Non-Government Organizations (NGOs). The socio-economic aspects were studied and analyzed by conducting socio-economic surveys.

6.1 BASELINE PHYSICAL ENVIRONMENT

Baseline conditions refer to the existing physical, environmental and socio-economic status of the project and study area. On the basis of baseline information, the project interventions are assessed and mitigation measures are proposed accordingly. The baseline information also helps to indicate the specific issues to be monitored during construction and operational phases of project development. The baseline data (physical, biological and socio-economic parameters) related to the project and study area is described in sub-sections below. Information provided is based on primary and secondary data collected by site visits, desk studies and consultation with locals respectively. This section gives the overview of the topology, geology, seismology and meteorological conditions whereas, it gives detailed information about the surface water, ground water (if present in the project area vicinity) and air quality of project area. The detail of each parameter is discussed in sub-sections below:

The physical environment consists of existing land form and land use at the project site including geology, pedology, hydrology, meteorology and climatology. The pre-project

condition (i.e. baseline) of these components of the physical environment is described in detail. To identify the potential impacts on the physical, biological and socio-economic environment that is likely to arise from the project activities.

6.1.1 Physiography

Faisalabad is the 3rd largest city of Pakistan and is situated along the banks of River Chenab. The city of Faisalabad is bound by Chiniot and Hafizabad districts on the North and by Sahiwal and Toba Tek Singh on the South, while on East it is surrounded by Nankana Sahib and to the west Jhang is located. On the Northern side Sheikhupura and Lahore are also present and Okara occupies its South-Eastern side. The aforesaid project includes the "Plastic container manufacturing and printing unit by M/S Quality Plast (Pvt) Ltd.

6.1.2 Topography and Geology

Faisalabad stands in the rolling flat plains of Northeast Punjab, between longitude 73.12600204 East and latitude 31.48099009 North. The City covers an area of approximately 1,230 km^2, while the district covers more than 16,000 km^2. The soil of Faisalabad comprises alluvial deposits mixed with loess having calcareous characteristics, making it very fertile. The topography of the selected project site is flat.

6.1.3 Seismicity

According to Seismic Zoning of Pakistan, the project area lies in Zone 1 of Modified Mericalli (M.M.) scale and represents minor damage in the past due to the Earthquake. Distant earthquakes may cause damage to structures with fundamental period greater than 1.0 second, corresponds to intensity V and VI of the M.M scale (National Disaster Management Authority). The seismic zoning of Pakistan is given below in Figure 10 below:

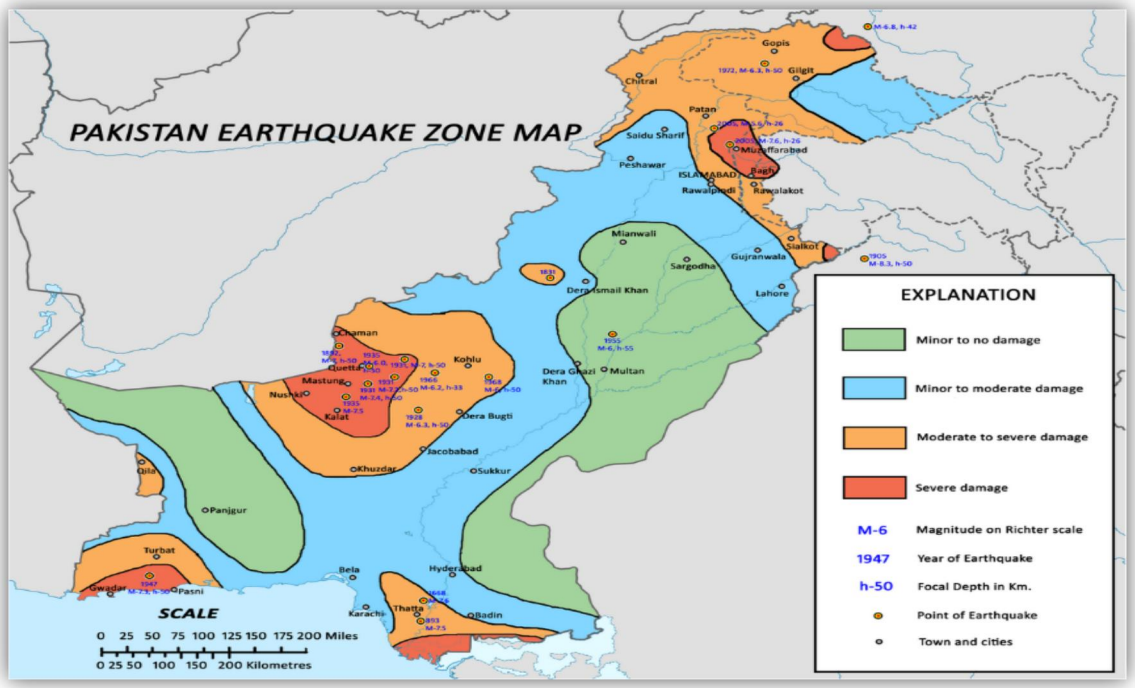


Figure 7: Seismic Zoning of Pakistan

6.1.4 Agriculture and Cropping Pattern

In district Faisalabad, crops that are cropped during various seasons includes; wheat, fodder, sugar-cane, rice and potatoes. Due to aforesaid project establishment agricultural crops will not be impacted as the selected site is located in industrial area. To keep the impacts within acceptable limits trees will be planted in designated green areas.

6.1.5 Meteorology

Due to its high evaporation rate, Faisalabad features hot desert-like climatic conditions according to Köppen-Geiger classification. The climate of the district can see extremes, with a summer maximum temperature **44°C** and a winter temperature of **4.0°C**. The mean maximum and minimum temperature in summer are **43.5°C** and **18.0°C** respectively. In winter it peaks at around **19.4°C** and **4.1°C** respectively. The summer season starts from April and continues till October. May, June and July are the hottest months. The winter season starts from November and continues till March. December, January and February are the coldest months. "The bulk of monsoon precipitation occurs in July and August, with monthly averages of **115.0 mm** and **89.8 mm** respectively. Minimum rainfall occurs in the month of November which is **3.0 mm**" (PMD).

Table 4: Mean Temperature and Precipitation[1]

Month	Mean Temperature		Precipitation (mm)	Relative Humidity (%)
	Maximum	Minimum		

[1] *Source: Pakistan Meteorological Department, 2018*

January	19.4	4.1	11.5	66.0
February	21.9	7.1	20.1	61.2
March	26.7	12.3	25.7	58.2
April	33.5	18.0	16.9	46.5
May	38.4	22.7	16.1	37.5
June	43.5	31.8	27.9	1.7
July	42.1	32.4	115.0	61.5
August	38.1	26.6	89.8	65.9
September	35.7	23.7	28.6	59.9
October	33.0	17.1	3.8	54.7
November	27.2	10.3	3.0	62.7
December	21.4	5.1	8.6	66.5
Annual (Average)	**31.2**	**17.6**	**372.3**	**56.6**

6.1.6 Surface Water Quality

No surface water body/reservoir is located within 2 km of study area. No impact is being envisaged due to proposed project installation.

6.2 BASELINE BIOLOGICAL ENVIRONMENT

The biological environment consists of the flora and fauna present at the study as well as project area. The detail of each parameter is given below.

6.2.1 Flora

Currently, the remnants of the ***Tropical Throne Forest*** are present at some regions of the City. In Faisalabad the green zones are very less, native species are present but in a scares condition. The ornamental plants and tree had been planted at the boundaries of the various residential societies present in vicinity of project area. The detail of the tree species present in the study area is given in **Table 4**:

Table 5: Vegetation Features of Project Area

Sr.#	Local Name	Biological Name
1	Gold Mohar	*Deloxin regia*
2	Sukh Chain	*Pongamia globra*
3	Neem	*Azadircuhta indica*
4	Sheesham	*Dalbergia sissoo*
5	Beri	*Ziziphus mauritiana*
6	Farash	*Tamarix aphylla*

6.2.2 Fauna

The fauna consists of mammals, birds, reptiles and amphibians. Currently, the study area is having few species of the fauna such as; Jungle Cat (*Felis chaus*), Field Mouse (*Mus*

musculus), and Soft Furred Rat *(Millardia mettada).* These species are considered as the pests present in the area due to the agricultural activities in the project area proximity. Reptiles mainly includes; snake and Tree Lizard *(Calotes versicolor).* Only amphibian reported in the City is Bullfrog *(Hoplobatrachus).* The Birds species includes; Common Crow *(Corvus splendens),* House Sparrow *(Passer domesticus)* and King Crow *(Passer domesticus).* Due to the installation of proposed unit at proposed location in District Faisalabad no adverse impact is envisaged on fauna.

6.2.3 Endangered Species

There is no floral or faunal species inhabiting the project area that are included in the Red Data Book of IUCN. The populations of birds are reported to be reduced over time due to excessive pesticide sprays in agricultural crops and loss of habitat.

6.2.4 Archaeological Sites or Wetlands

It is envisaged that no building of archaeological, cultural and historical importance is expected to be damaged due to the installation of said project at the selected site. Moreover, there is no wetland or surface water body reported to be affected due to the installation of the aforesaid project.

6.3 BASELINE SOCIO-ECONOMIC ENVIRONMENT

Faisalabad is the third-most-populous city in Pakistan and it is the second-largest in the eastern province of Punjab. Historically, one of the first planned cities within British India, it has long since developed into a cosmopolitan metropolis. The total area of Faisalabad District is 5,856 km^2 while the area controlled by the Faisalabad Development Authority (FDA) is 1,280 km^2 Faisalabad has grown to become a major industrial and distribution center because of its central location in the region and connecting roads, rails and air transportation. It has been referred to as the "Manchester of Pakistan". Faisalabad's GDP in 2013 was $43 billion (USD). The average annual GDP of Faisalabad is $20.5 billion calculated by averaging GDP projections from 2015 to 2025.

6.3.1 Population

According to census 2017 total population of District Faisalabad is 7873910. Total population males are 4034515, female is 3838854 and Transgender are 541. An average annual growth rate is 1.97 from 1998 to 20172. Other features are shown below:

Table 6: Demographic Profile of Faisalabad

Sr#	Parameters	Rural	Urban	Total
1	Population	4113582	3760328	7873910
2	Male	2102745	1931770	4034515

[2] *http://www.pakinformation.com/population/faisalabad.html*

3	Female	2010623	1828231	3838854
4	Transgender	214	327	541
5	Household	631434	593832	1225266

6.3.2 Religious Setup

Islam is the common heritage in the region with a **97.22%.** Muslim majority according to the 1998 Pakistan census report and 2001 population data sheet. Islamic influences are evident in the fundamental values of various inhabitants including; cultural traditions, marriage, education, ceremonies and policies with may reflect stark differences in rural villages as compared to urban areas.

6.3.3 Industrial Setup

Faisalabad contributes over **05%** toward Pakistan's annual GDP; therefore, it is often referred to as the "Manchester of Pakistan". Faisalabad's average annual GDP is **$20.55 billion (USD)** of which **21%** comes from agriculture. The surrounding countryside, irrigated by the lower Chenab River, produces agricultural commodities such as; cotton, rice, sugarcane, wheat, fruit and vegetables. It is a producer of industrial goods and textile manufacturing including; cotton and silk textiles, super phosphates, hosiery, dyes, industrial chemicals, clothing, pulp and paper, printing, agricultural equipment, ghee (clarified butter), and beverages.

The Faisalabad Chamber of Commerce and Industry monitors industrial activity in the city and reports their findings to the Federation of Pakistan Chamber of Commerce and Industry and provincial government. The city has a major dry ports and international airport.

Faisalabad is recognized as the center of the textile industry in Pakistan, contributing to half of Pakistan’s total textile shipments. At the end of June 2012, Textiles employed **20%** of the nation's workforce and generated **1.3 trillion rupees ($13.8 billion)** in textile products, most of which were exported to the US and Europe. While Punjab's economy is driven primarily by agriculture, the textile industry along with leather products and light engineering goods play an important role, with more than **48,000** industrial units spread across Punjab. In an effort to boost bilateral trade, Romania and Turkey have honorary-consulates in Faisalabad which enable trade links with the city.

6.3.4 Healthcare Facility

Healthcare services are provided to the citizens by both public and private sector hospitals. The government–run hospitals are; THQ Hospital (Chak Jhumra), Tehsil Headquarter Hospital, Social Security Hospital, ABWA Hospital & Research Center, Faisalabad International Hospital, Mian Muhammad Trust Hospital, Prime Care, Saahil Hospital. Moreover, there are a number of private hospitals, clinics and laboratories in the Faisalabad City.

6.3.5 Educational Facilities

Faisalabad has several research and educational institutions, both public and private, such as; the University of Agriculture, Government College University Faisalabad, National Textile University, Nuclear Institute for Agriculture and Biology and University of Faisalabad. In 2014, the University of Agriculture ranked 1st in agriculture and 4th overall for universities in Pakistan according to the Higher Education Commission of Pakistan (HEC) and was ranked 142 in the 2013 Top 200 World Universities for agriculture and forestry by Quacquarelli Symonds (QS).

In 2013, Faisalabad's literacy rate of 46% for females was noticeably lower than the 69% for males; rural literacy was 49% compared to 74% in urban areas.

6.4 LAB REPORTS OF ENVIRONMENTAL ANALYSIS

M/S WELCOSE was engaged to carry out environmental monitoring of ambient air quality, ground water quality, noise level and particulate matter concentration in the project area. Laboratory analysis reports of ambient air quality, ambient noise and surface water analysis results are annexed at **Annex-IV** of this EIA Report and the detail information related to the testing results is given below:

6.4.1 Sampling Sites

The sampling was carried out at the project site which is identified to collect samples of water, noise and air for testing according to the testing guidelines of Punjab-EPA. It also defines number of samples and the site from where samples were collected.

Table 7: Sampling Sites Details

Sr#	Particulars	Details
1	Number of Samples	03 (Three)
2	Parameters of Monitoring	Ambient Noise, Ambient Air and Ground Water Quality
3	Sampling Sites	01 (One)

6.4.2 Ambient Air Quality

The atmosphere of Faisalabad City is considered to be un-healthy due to the large number of the industries present in the City. The cause of the visual pollution is dust and smoke being generated from industrial processing, brick-kilns and construction related activities. Another reasons for pollution is vehicular movement, existing poor road conditions and passageways huge quantity of suspended particulate matters is released into the environment. It is envisaged that the project will not cause any pollution problem in the area.

The primary source of air pollution at the project sites is the vehicular emissions, industrial processing and the key pollutants likely to be found at project locations are;

Carbon Monoxide (CO), Oxides of Nitrogen (NOx), Sulphur Dioxide (SOx), and Particulate Matter (PM). In order to determine the air quality of the area, Laboratory had the requisite air sampling device and expertise for collection of samples. Sampling of the air was carried out and the reports of ambient air quality are attached at **Annex-IV** of this EIA Report.

6.4.3 Noise

Noise level of the project area was monitored at project site using digital sound level meter and results of the monitoring are attached as **Annex-IV.**

6.4.4 Water Resource

Ground water is the principal source of municipal water supply in Faisalabad City. The City's drinking water is obtained from groundwater aquifer by means of tube wells located throughout the area. Ground water samples were collected from project area from the depth of 120-150ft. Water samples were tested for physio-chemical parameters (Temperature, pH, TDS, EC, Color, Odor, and Taste).

The results of the groundwater analysis showed that all the parameters were within the limits.

6.5 SUITABILITY OF THE SITE

As the site is surrounded by various other industrial activities and no relocation is required for establishment of current project. The site do no fall in environmental sensitive area and all commodities are at a suitable distance from project site as they will not impacted by the construction activities even locals will get more benefits and job opportunities. No replacement, relocation and rehabilitation is required for the development of above-said project.

Favor for the Project

Respondents were inquired about their views regarding the proposed project. Almost 83% respondents of were in favor of the aforesaid project commencement as establishment of the proposed project will provide the job opportunity to the locals and it will help in earning the foreign exchange.

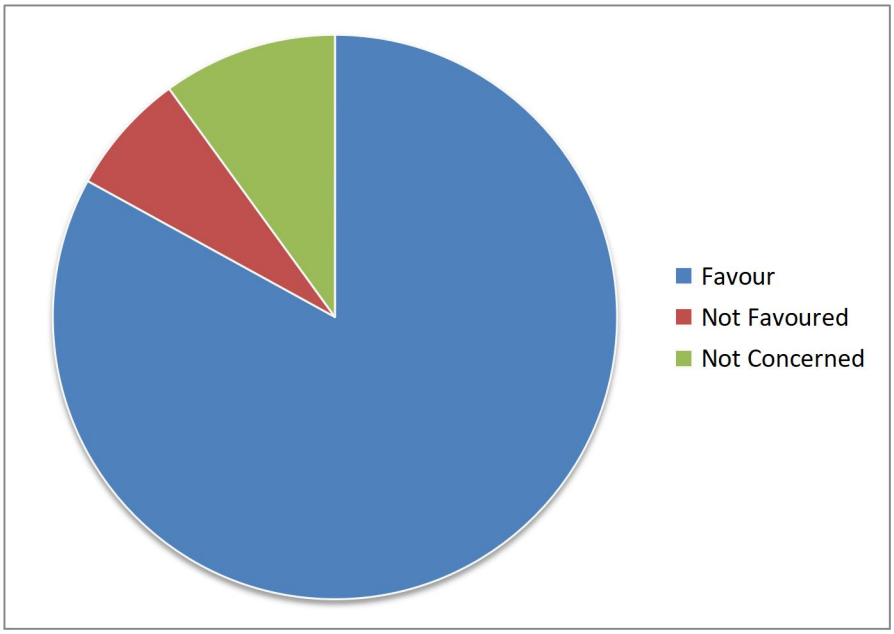


Figure 8: Project Acceptance Level

Common Diseases

Respondents were asked about the common diseases prevailing within their area. Majority of the respondents suffered from diarrhea, cough, diabetes and hypertension. Hepatitis also prevailed in the few communities.

Community Issues

Community was asked about the burning issues they are facing. Majority of the respondents complained about lack of safe drinking water and lack of the job opportunities.

Quality of Life Values

Respondents were inquired about the quality of life values available in their respective areas during socio-economic survey of the study area. Most of the respondents had the basic amenities to sustain life such as; electricity, water supply services, sewerage collection system, gas and transport facilities. Adequate educational facilities such as Government College University Faisalabad, Agricultural University Faisalabad, National Textile University, Nuclear Institute for Agriculture and Biology, University of Faisalabad, and the University of Engineering & Technology of Lahore. The healthcare facilities include; Allied Hospital, Institute of Child Care, PINUM Cancer Hospital, Faisalabad Institute of Cardiology (FIC) and General Hospitals in Ghulam Muhammadabad and Samanabad. There are a number of private hospitals, clinics and laboratories in the city.

7 IMPACT ASSESSMENT METHODOLOGY

This section discusses the potential environmental impact for the establishment of plastic container manufacturing unit by M/S Quality Plast (Pvt) Ltd. The impacts may include; soil contamination, water resources depletion, biological resources disturbance and socio-economic impacts and, where applicable, identifies mitigation measures that will reduce significantly, 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

The objective of screening is identification of the adverse as well as beneficial impacts and then mitigating the effect of adverse impacts up to acceptable limits or within PEQS. Following are the objectives of screening out all significant environmental and social impacts:

- To find different alternatives and ways of carrying out the project activities, this may cause adverse environmental and social impacts on the surroundings.
- To enhance the Environmental and Social benefits of project.
- To avoid, minimize and remediate adverse impacts.
- To ensure that residual adverse impacts are kept within acceptable limits.

In the sub-sections below the impacts assessment methodology for the operation of above stated project has been defined. It includes the magnitude, the extent of the impact and the nature of the anticipated impact that is likely to be occurred from the proposed project activity.

Methodology

This Section discusses the project's potential environmental impact of establishment of plastic container manufacturing unit. The adverse impact may occur on; the area's geomorphology, soil, water resources, air resource, biological resources and socio-economic condition and where applicable, identifies mitigation measures that will reduce significantly, if not eliminate, its adverse impact. The assessment carried out in the sub-sections below is based on potential impacts on overall environmental receptors within the project area. Impacts are evaluated on the basis of magnitude, immediacy and sustainability.

Evaluation of the Residual Impacts

Incorporation of suggested mitigation measures may reduce the magnitude of the environmental impacts of above stated project but sometimes, it may fail in bringing them within the acceptable limits. This step refers to the identification of the anticipated remaining impacts after mitigation measures have been applied.

It can be concluded in view of these reasons that the selected site is best suited for the project and the technology adopted for the production of passenger vehicles. The said project will not pose any adverse impact or threat on any component of the environment. The impact assessment criteria are given below along with their impacts:

Table 8: Impact Significance Criteria

Impact	Criteria
No Impact	When the proposed activity will have no impact
Long Term	When the impact is of high intensity with high spread and high duration or of high intensity with medium spread and medium
Moderate Term	When the impact is of moderate intensity with high spread and high duration or of high intensity with low/ moderate spread and low
Short Term	When the impact is of low intensity but with moderate spread and moderate duration or of moderate intensity
Insignificant	When the impact is of low intensity, low spread and low duration
Adverse	When the impact is of large intensity, spread easily and long-term
Beneficial	When the impacts are positive and improve the environmental conditions

Table 9: Impact Matrix Checklist for Designing Phase

Environmental Sensitivities	Intensity of Impact						Impact Nature		Impact Significance				
	Low Intensity	Moderate Intensity	High Intensity	Local	National	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long Term
Physical Parameters													
Topography													
Land Acquisitions													
Seismicity													
Biological Parameters													
Land Environment													
Flora													
Fauna													
Social Parameters													
Local Economy													
Social Impacts													

Table 10: Impact Matrix Checklist for Construction Phase

Environmental Sensitivities	Intensity of Impact						Impact Nature		Impact Significance				
	Low Intensity	Moderate Intensity	High Intensity	Local	Moderate	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long Term
Physical Parameters													
Air Quality													
Noise													
Water Quality													
Biological Parameters													
Land Environment													
Flora													
Fauna													
Physical Parameters													
Local Economy													
Social Impacts													
Health & Safety													

Table 11: Impact Matrix Checklist for Operational Phase

Environmental Sensitivities	Intensity of Impact						Impact Nature		Impact Significance				
	Low Intensity	Moderate Intensity	High Intensity	Local	Moderate	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long Term
Physical Parameters													
Noise													
Water Quality													
Biological Parameters													
Land Environment													
Flora													
Fauna													
Physical Parameters													
Local Economy													
Social Impacts													
Health & Safety													

Identification of Monitoring Requirements

The last step in the assessment process is the identification of minimum monitoring requirements. The scope and frequency of monitoring depends on the residual impacts. The purpose of monitoring is to confirm that the impact is within the prescribed limits and to provide timely information if acceptable limits are being breached.

Methodology for Impact Evaluation

These tools have been used to identify the significance and magnitude of the impact as well as the nature, reversibility and extent:

- An Impact Screening Checklist
- Project Impact Evaluation Matrix

Following is given a brief description of assessment tools:

a. Impact Screening Checklist

The impact screening checklist is developed to screen out potentially insignificant environmental and social impacts from potentially significant adverse environmental and social impacts during planning & designing, construction and operational phases of the project. The objective of impact screening process is to assess the significance of issues related to the air, water, noise, soil, transportation, civil work, communication, the hazards and external constraints. The beneficial and adverse impacts of project during planning & designing, construction and operational phases are identified based on their duration, location, frequency, extent, significance and reversibility. The impact of each activity on various environmental parameters is given below:

Table 12: Characteristics of Impacts

Sr#	Environmental Component	Impact Characteristics												
		Duration		Location		Frequency		Extent		Significance			Reversibility	
		Long	Short	Direct	Indirect	Cont.	Intermittent	Wide	Local	Large	Moderate	Minor	Rev.	Irrev.
Beneficial Impacts														
1	Employment	◙		◙		◙			◙		◙		◙	
2	Export of finished goods	◙		◙		◙			◙		◙		◙	
3	Appreciation in Land	◙			◙	◙			◙			◙		◙
4	Tree Plantation	◙		◙		◙			◙		◙		◙	
Adverse Impacts														
1	Air Pollution		●	●			●		●			●	●	
2	Wastewater		●	●		●			●			●		●
3	Solid Waste and By-Products	●		●		●			●		●			●
4	Health and Safety		●		●		●		●			●		●
5	Physical Hazards		●	●			●		●			●		●
6	Security Risks		●		●		●		●		●		●	

b. Project Impact Evaluation Matrix

The Project Impact Evaluation Matrix was developed by placing different environmental parameters that are likely to be affected by the proposed project actions, grouped into categories i.e., physical, ecological, socio-economic environment and hazards. For assessment of associated impact risk assessment methodology was used. Moreover, the risk assessment was done on the basis of project phases (planning & designing, construction and operation). A Project Impact Evaluation Matrix is attached as **Table 12** below:

Table 13: Impact Evaluation Matrix

Environmental Parameters	**Impact Assessment during Different Phases**	
	Construction	**Operational**
Planning and Designing		
i. Location	+2p	+2p
ii. Design	+1p	+1p
A: : Physical		
1. Land Resources		
i. Soil Erosion and Contamination	-2t	-2p
ii. Transportation	-1t	-1t
iii. Solid Waste and By-Products	-2t	-2p
iv. Land Use	NA	NA
2. Air Resources		
i. Noise Pollution	-1t	-1t
ii. Air Pollution	-1t	-1t
iii. Dust Emissions	-1t	NA
3. Water Resources		
i. Ground Water	-1p	-2p
ii. Surface Water	0	NA
iii. Wastewater	-1p	-1p
B : Ecological		
Flora		
i. Tree Cutting	-1p	+1p

Fauna		
ii. Terrestrial Fauna	NA	NA
C: Socio-Economic		
i. Employment Opportunities	+1t	+3p
ii. Land Value Appreciation	+1t	+2t
iii. Economic Uplift of Study Area	+1p	+3p
D: Hazards		
i. Physical Hazards	-1t	-1p
ii. Health and Safety	-1t	-1p
Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable; t= Temporary; p= Permanent; app= Applicable; 0= Negligible		

8 SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

General

This Chapter identifies the potential impacts (positive and adverse) on the physical, biological and socio-economic environment of project area due to the establishment of plastic container manufacturing and printing unit. It also identifies measures that will help to mitigate the adverse environmental and social impacts as well as it will enhance positive impacts of aforesaid project. Impacts are assessed by analyzing their magnitude and sensitivity, which is a legal requirement as discussed in **Chapter 0**7

Objectives

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

- To find different alternatives and ways of doing 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 and Mitigation Management

Purpose of mitigation is to evade, reduce or balance the expected antagonistic effects in suitable way and to integrate these for devising environmental management strategy or plan. At every stage of project, mitigation plan for all the adverse impacts should be predicted to find out the best alternative. The objectives of mitigation are to:

- Invent of best substitution, better alternatives and ways to reduce the adverse environmental and social impacts in immediate surroundings.
- To improve the environmental and societal payback of project.
- To prevaricate, remedy/reduce and pro-vocative impacts.
- To certify that remaining negative influences are kept within permissible limits.

In this part of the EIA Report, a number of complications including; cleanliness, environmental health and safety, societal and environmental managing and inspection, industrial vulnerability, tools and apparatuses and during operational activities, influx of workers and procurement of land have been deeply elaborated.

Approaches for Mitigation Measures

Following approaches may be used to mitigate the impacts of the project:

Table 14: Approaches for Mitigation Measures

Avoid: Change of route or site details, to avoid damage important ecological or archaeological features.
Replace: Regenerate similar habitat of equivalent ecological value in different location.
Reduce: Filters, cyclones, noise barriers, dust, enclosures, visual screening, wildlife corridors and changed time of activities to reduce the impact.
Restore: Site restoration at the end of the operational activities.
Compensate: Relocation of displaced communities, facilities for the affected communities, financial compensation for the affected individuals, etc.

Expected Positive Impacts

Following are the expected outcome for installation of above stated project:

a) Increase in Employment Opportunities

Due to installation of aforesaid project, the employment opportunity will be slightly enhanced. During construction phase, 15-20 workers will be hired from local community include; skilled and un-skilled workers. During operational phase, approximately 40-60 persons will be required. It will include hiring of technical and non-technical staff. Locals will also have the opportunity to diversify their income by being employed. Hence, there will be an increased employment opportunity for the local people which will have a positive impact on the socio-economic status of the area.

b) Tree Plantation

At the end of the construction phase, 3-5 times of removed trees will be planted in the designated green areas, this will enhance the aesthetic beauty of the area.

c) Adverse Impacts and Mitigation Measures

This section identifies the potentially significant and in-significant adverse environmental and social impacts anticipated during the operation phase of said unit. Appropriate mitigation and management measures, where applicable, have also been suggested to reduce the severity of anticipated impact up to the extent possible.

8.1 Impacts and Mitigations due to Project Location

During planning and designing phase most of the associated impacts will be associated with the selection of appropriate location and design that would have minimal impact on the environment and society. It will include:

i. Impacts of Location

The project site is located within designated and approved industrial estate. There is no human settlement, heritage building, social structure, grassland or preserved area in the project vicinity that could be damaged, dislocated or dismantled due to the project activity in proposed area. Hence, the impact of location is considered to be in-significant as the project site is away from the surface water body (within 2.0 km of project area), residential area (at safe distance) and no protected area (is reported in 5.0 km vicinity of the project area).

Nature of Impact

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

Mitigation Measures

Following mitigation measures has been adopted to reduce the impact of said project location on sensitive receptors:

- The selected site located at adequate distance from the various sensitive receptors.
- The site is accessible through metaled road network.
- The selected site is located in industrial area and due to establishment of aforesaid project no change in the land use of area is being envisaged.
- The site is owned by the proponent and no dispute is associated.
- No significant air emissions from proposed project.
- The generated solid waste will be disposed off through the standard practices of area.

It is envisaged that no mitigation measures will required as the said project had been constructed in industrial area and no adverse impacts on its surroundings due to significant distances from all sensitive receptors.

ii. Impacts and Mitigations due to Project Designing

During designing phase of aforesaid project optimized the use of best available technology in order to prevent or minimize potentially significant environmental

impacts associated with the project as well as to ensure high level business and environmental performances were adopted. In pre-construction/design phase, a management system was provided at design level to control all anticipated impacts. For project designing highly qualified engineer will be hired.

The aforesaid project will adhere to all standards, technical and legal requirements in order to avoid adverse impacts on the socio-environment and human health. Efficient infra-structure has been developed. Construction materials have been procured from approved dealer. The technology adopted for the manufacturing of plastic container is the state of the art. This process is employed because of the following reasons:

- Construction material has been procured from approved dealers.
- For the protection of workers PPEs (dust masks, gloves & shoes) has been provided during construction and it will be provided during operational phase too.
- The proposed emergency system is semi-automatic which is being control through computerized systems and it is connected with smoke alarms.
- In this process almost 98% of raw-material will be converted into the final good.
- Through the selected system high quality of goods will be produced.
- Plastic recycle and reuse will be ensured.
- The generated wastewater will be treated prior to final disposal.
- The Proponent intends to reduce the environmental and social issues up to practically possible safe limit. The Client will adopt SOPs for Emergency Reponses Plan, Fire Fighting Plan and Disaster Management Plan
- Planning principles and design considerations have been reviewed and incorporated into the site planning process to the extent possible. The concepts considered in the design of the proposed project are:
- No additional land acquisition will be required.
- Substantial reduction of environmental degradation in project area.

Nature of Impact

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

Mitigation

No additional mitigation measure will be required as state of art technology is being adopted for the aforesaid unit.

8.3 Impacts and Mitigation during Construction Phase

Project construction phase will be of 01 year whose activities will surely show effects on land environment, water, air, noise level, soil quality, socio-economic trend of area, etc. These impacts had been controlled effectively by adopting best management practices.

By the implementation of said project, a positive impact on the socio-economic culture for the people has been observed. The chance for local employment, fabrication, brick masonry, painting and machinery erection works had been increased.

The construction phase of aforesaid project will include activities associated with the site leveling, construction of civil structures, architectural works and building services. The construction phase would bring in immediate but short term changes on various components of environment near the project site. This section explains how aforesaid project will affect different environmental aspects and its mitigation measures to manage the impact. The impacts during construction phase will be temporary and localized. Even though, the measures proposed to minimize such impacts.

8.4 Impacts & Mitigation during Operational Phase

This section delineates the potential impacts during operation phase of the project and the mitigation measures to counteract these impacts. The summary of the impacts and possible mitigation measures are as follows:

i. Impact on Ecology

Currently, the site is open plot and located in designated and approved industrial estate. After the completion of said project different native and ornamental plants species will be planted in designated green spaces and along boundary of project site. The overall aesthetic beauty of the area will be enhanced and it will have a significant impact on the overall ecology, aesthetic and landscape of the area.

Nature of Impact

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

Mitigation Measures

This impact is considered to be positive, long-term and significant. Hence, it doesn't require any mitigation measure.

ii. Impact on Air Environment

Dust will be generated due to the frequent movement of vehicles carrying the raw-material and finished goods. During operational phase, suspended particulate matter and gaseous emissions will be the main pollutant.

Due to increased vehicular movement increase in NOx, SO_X, VOC and CO concentrations will be observed at the project site. As most of the construction equipment will be mobile, the emissions are likely to be fugitive and not concentrated on a single source or place. As the impacts will be localized in nature, the areas outside the said project boundary are not likely to face any significant adverse impacts with respect to ambient air quality. No significant emissions from plastic container manufacturing unit. Machinery will be serviced on regular basis.

Nature of Impact

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

Mitigation Measures

Following mitigation measures will be adopted:

- For dust suppression regular sprinkling of water will be carried out.
- Vehicles used for transportation of raw material as well as finished product and the utility vehicles will be regularly serviced and maintained in order to keep the environmental impact on account of their exhaust emissions to its minimum level.
- Native tree would be planted along the boundary of project area to keep environment healthy. For removal one tree, 3-5 trees will be planted.

iii. Noise Environment

Noise, an unwanted sound, affects human being. Excessive exposure to noise produces varying degree of damage to hearing system. It leads to headache, fatigue, etc. Continuous exposure of increased level of noise will have an adverse impact on the health of workers as well as the people residing in surrounding area. Noise will only be generated from machinery.

Nature of Impact

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

Mitigation Measures

In general the following methods will be adopted to control the noise pollution from the proposed units;

- Proper encasement of noise generating sources will be done to control the noise levels within prescribe PEQS limits.
- A thick greenbelt will be developed all around the plant which will be acting as noise barrier.
- The use of concrete and masonry walls & barriers keeping in view the benefits of stiffness weight & cavity construction & the need to provide well sealed sound attenuating doors & windows.
- The use of complete or partial enclosures, as and if required.
- Attenuation by use of sound absorbents on walls and fixed or suspended ceilings.
- The use of mufflers, sound attenuation and acoustic louvers in air flow paths, taking particular care to direct inlet and discharge an opening away from critical areas wherever possible, so as to take advantage of direct effects.
- All the workers will be provided with ear plugs/ear muffs, masks, gloves and safety shoes.
- All the transporters will be advised to carry out regular maintenance of their vehicles

iv. Solid Waste Management

The key solid wastes and by-products that is recyclable matter (such as; containers, waste papers, used materials, waste packaging materials, plastic material and polypropylene) will be recycled and reuse in process known as flashing. The domestic solid waste will be handled as per practices of area.

Nature of Impact

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

Mitigation

Following mitigations should be adopted to manage generated solid waste:

- Waste bins will be placed in the facility at the strategic position for the collection of solid waste.

- The installed bins will be covered in order to reduce the chances of the disease vector production.
- Record of generated waste during the project activity should be maintained on the regular basis. Quantity of the waste disposed, recycled or reuse will be logged on a waste tracking register.
- Regular training will be given to the workers dealing with the waste management it will include; identification, segregation and management of waste.

v. Water Environment

Wastewater will be generated from chillers. This generated wastewater has no impact on surface & ground water quality.

Nature of Impact

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

Mitigation

Following mitigations should be adopted to manage generated wastewater:

- The domestic wastewater will be treated through septic tank prior to disposing off in sewerage system of FIEDMC.
- Water conservation activities will be adopted for the preservation of water.
- Wastewater generated from chillers will be reuse for horticultural activities.
- Water conserving methods will be applied by placing taps and toilets.
- All faults will be monitored and fixed.
- Freshwater conservation techniques should be adopted to ensure sustainable development
- 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.

vi. Health & Safety of Workers

Improper handling of machinery may cause various health issues. It can cause of severe accidents. To ensure the safety of workers these impacts need to be managed effectively.

Nature of Impact

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

Mitigation

Following mitigations should be adopted to improve the health and safety:

- Regular inspection and maintenance of the plant will be carried out to eliminate the risk and associated hazards of any unfortunate incident.
- Workers will be trained on the regular basis regarding personal safety, disaster management and physical hazards.
- Operators operating the plant should be fully trained and equipped.
- Training regarding HSE should be given on the regular basis.
- Workers will be given PPEs such as; helmets, mask, ear-plugs/muffs, safety boots, etc.
- It should be strictly enforced to wear PPEs while working.
- Incidents should be reported directly to the concerned authority.
- Spillage prevention plan should be adopted and it should be implemented effectively.
- Floor surfaces shall be maintained and cleaned on regular basis.
- Floor should be kept clean and free of oil spills, other slippery fluids or materials and obstructions.
- The effective use of hearing-protection devices shall be ensured.
- Protective measures and emergency rescue procedures should be followed strictly.
- Only authorized persons shall be allowed in the processing areas.
- Unloading of the raw-material and loads of the final products should be controlled, supervised, slow and smooth.

viii. Security Risks

A large number of workers will be hired including; skilled and un-skilled laborers. The increase in the number of the individuals residing in the area, may lead to an increase in crime and violence in surrounding areas. The nature of the impact is considered to be low as the locals will be preferred for hiring.

Nature of Impact

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

Mitigation Measures

Following mitigation measures will be adopted:

- Proper security will be provided to the workers working in the premises of proposed project.
- Before hiring any worker and his criminal record may be checked.
- CNIC of all the workers will be kept by the proponent.
- Strict law will be enforced to control the crime at site.
- Security to the workers should be provided.

ix. Emergency Response

Emergency response preparedness committee will be formulated consisted of heads of all the departments. Emergency Response Leader will be the head of the team assisted by safety team and safety supervisors. Emergency Response Leader along with his team will ensure that in the case of emergency, team is prepared for fire-fighting and the first aid kits will be provided which may include; blankets, hot water bottles, stretchers, benches, sterilized dressing, snake bite kit, cotton and iodine (2% alcohol).

Incidents and accidents may take place unexpectedly during project operations no matter how effective, strong and efficient the mitigation measures for all adverse impacts; especially the safety issues may be adopted. These may include; accident and natural disasters.

Nature of Impact

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

Mitigation

Following mitigation measure will be adopted:

- Site in-charge should be responsible to ensure that fire-fighting plan has been implemented with true spirit.
- Safety team will be responsible to monitor the activities and to act on the approved firefighting plan in the case of fire.
- Designated area fire marshals will be responsible to monitor their respective areas and act on firefighting plan in case of fire.
- Workers should be given adequate training of handling machinery.
- Emergency call service must be made available.
- The drills to check the response of the workers against any emergency situation will be carried out on the regular basis.
- Safety and hazards signs will be displayed with the facility to avoid any unfortunate incident.

- Only authorized persons will be allowed for the handling of the machinery.

Socioeconomic Impact

It is envisaged that the adverse impacts associated with the operation of said project includes; local community will be disturbed due to increase in the traffic load (i.e., vehicles carrying raw material and final products), wastewater management, solid waste management & disposal, soil pollution, etc. The intensity of the aforesaid project will be quite low. The commencement of the aforesaid project will have a beneficial impact on the surrounding community such as; increase in employment opportunity, increase in the wages of the local area employees, increase in revenue generation, provision of social welfare funds of the employees and appreciation of land value.

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

Mitigation Measure

No mitigation measures will be required.

5.7 Environmental Enhancement Measures

The said project will be result in following benefits:

- Direct and indirect employment opportunities,
- Gains in the local and national economy,
- Industrial development in region
- Business spin-offs in the factory area,

Tree plantation along boundary of project will act as environmental enhancement measure. Trees including; Shatoot, Jaman, Moor Pankh, Fish Paam, Trysenia, etc. will be grown on all open spaces and along boundary of project.

9 ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM

This EIA Report provides the Environmental Management and Monitoring Plan (EMMP) for implementation of aforesaid project in order to keep anticipated environmental and social impacts in check by adopting suggested mitigation measures and monitoring of the certain parameters moreover, to ensure the compliance of EMMP. As per the environmental legislation in Pakistan, the EMMP for the operations phase, along with other documents, is to be submitted in EPA, Punjab to obtain confirmation for compliance and Environmental Approval/NOC for project execution. Even after implementation of the suggested mitigation measures, the impact may remain significant and require regular environmental monitoring. This section also underlines the monitoring framework for operation phase to check compliance of EMMP and to take timely actions for correction in case any negligence & accidence of significant criteria, requirements or goals is found.

Objectives of Environmental Management Program

The primary objectives of the EMP are to:

- Facilitate the implementation of the mitigation measures identified in this EIA Study.
- Define the responsibilities of the project proponent and contractor and provide a means of effective communication of environmental issues between them.
- Identify monitoring parameters in order to ensure the effectiveness of the mitigation measures.
- Provide a mechanism for taking timely action in the face of unanticipated environmental situations.
- Identify training requirements at various levels.

Components of EMMP

Components of EMP are as follows

- Management plan
- Monitoring Plan
- Communication and documentation
- Institutional capacity
- Environmental training

8.1 Proposed Mitigation actions

It lists all the mitigation measures identified in the EIA and the associated environmental or social aspect in line during operational phase with the administrative framework involving all the responsible implementing authorities who are required to take the planned actions/measures and monitor it accordingly. It enhances project benefits by reducing its impacts and making it environmental friendly.

Table 15: Environmental Management Plan

Project Activities	Type of Impact	Potential Impacts On Environment	Extent / Magnitude	Proposed Mitigation actions	Institutional Responsibility	
					Implementing Body	Supervision
PRE-CONSTRUCTION						
Land acquirement and land use	Physical , Social and Aesthetical	Positive use of land but proper planning will be required	More/at community level and to Proponent	• Land is owned by proponent and there is no settlement so no impact will be there. • Land will be improved from open land to industry and located in approved industrial estate.	Contractor	Proponent
Use of local manpower	Social	Employment Generation	Less/Adjacent area	• Local people will be hired for less technical work or non-skilled work. Proper training will be provided to non-skilled persons.	Contractor	Proponent
CONSTRUCTION						
Civil works	Physical, Social,	Soil Erosion, Emissions,	More/	• Record keeping and timely transfer of SW from bins to the disposal site for	Contractor	Proponent

	Biological Aesthetical	Water Contamination, Noise &Vibration, Wildlife affected, Employment, Health &Safety of Workers	Adjacent area	ultimate management and disposal • Dust emission from soil piles and aggregate storage stockpiles will be reduced by keeping the material moist by sprinkling of water at appropriate frequency • Covering the pile, for example with tarpaulin or thick plastic sheets, to prevent emission. • Noise control measures will be implemented • Paved roads are already there that will be used for transportation of raw material. • Camping site will be established during construction		
Movement and fueling of vehicles	Physical & Aesthetical	Soil &Water Contamination due to Fuel Leakages &Spillage, Emissions, Noise &Vibration	Moderate/ at the site	• Periodic maintenance and inspection of vehicles will be done • Vehicles with leaks will be operated after maintenance. • Vehicles should not be washed or serviced in the field.	Contractor	Proponent
Transportation of construction material	Bio-physical	Dust and Particulate Emissions, Noise Generation,	Moderate/ Adjacent area	• Excessive use of horns will be avoided • PPE's will be provided to workers • Covering of trucks carrying transporting material	Contractor	Proponent

		Safety and Health Effects		• Night time driving of project vehicles will be limited where possible • Low speed limit will be maintained on the section of the access road that is adjacent to the community and site. • The fence surrounding the site will be put in on during the construction to prevent access to the construction site		
Ecological Resource	Physical, aesthetical and biological	Flora & Fauna	Moderate/ adjacent area	• More tree plantation will be done at designated green areas.	Project Manager	Project Manager
POST-CONSTRUCTION/OPERATION						
Wastewater management	Physical/social	Degradation of water quality	Moderate/local	• Wastewater generated from domestic activities will be treated through septic tank and dispose off in sewerage system of designated Industrial Estate. • Wastewater generated from chillers can be used for irrigation purpose.	Environment officer	Proponent
Air quality management	Physical	Dust and PM	Moderate/adjacent areas	• No waste should be burnt at the premises. • Regular monitoring of ambient air and maintenance of machinery should be done on regular interval.	Environment officer	Proponent

Noise generation	Physical, social, biological	Psychological and hearing problems	Moderate/local	▪ There will be ban on the use of horn in the area. ▪ Proponent has planned a proper plantation plan which will also act as barrier for noise. ▪ Regular maintenance of machinery will be done	Environment officer	Proponent
Solid Waste Generation	Physical, Biological, Social	Soil Contamination, effecting GW Quality, vectors production, odor, Health, Welfare	Severe/ local and global	• The solid waste from the project should not be allowed to pile up. • Solid waste should be disposed off properly as per local practice • Recyclable waste should be dispose off through certified contractor	Environment officer	Proponent
Health and safety	Biological	Injury may happen while handling machines	Severe	• Personal Protective equipments (PPE's) i.e. surgical masks, gloves and sanitizers will be provided to the workers • Warning signs will be placed in local language. • First aid kits and other necessary equipment will be kept available at site. • COVID-19 SOP's must be implemented	HSE Manager	Proponent
DECOMISSIONING PHASE						

Solid waste	Physical, Biological, social	Soil Contamination, vectors production, odor, Health, Welfare	Local	• Used building materials and other waste from decommissioning must be transported and dumped in approved sites.	Contractor	Proponent
Dust emissions	Physical, Biological, social	Dust and PM	Local	• Ensure strict enforcement of on-site speed limit regulations. • Avoid demolition work in extremely dry weathers. • Sprinkle water on graded access routes when necessary to reduce dust generation by machines. • Personal Protective equipment to be worn. • Demolished materials on site to be covered to prevent to be blown off by wind.	Contractor/HSE manager	Proponent
Exhaust emissions	Physical, Biological, social	Enhance air pollution	Moderate/at the site	• Sensitize truck drivers to avoid unnecessary racing of vehicle engines at loading/offloading points and parking areas, and to switch off or keep vehicle engines at these points, using mufflers. • Vehicle idling time shall be minimized.	Contractor/Engineer	Proponent
Noise and vibration	Biological, Social	Effect human health	Adjacent areas	• Sensitize machinery drivers and machinery operators to switch off engines of vehicles or machinery not being used.	HSE manager/contractor	Proponent

Rehabilitation of project site	Physical, Social, Aesthetical, Biological	Site clearance	Positive	• Average lifespan of a well-constructed building is about 80 years after that rehabilitation of site will be done if needed. • Implement an appropriate re-vegetation program to restore the site to its original status. • Consider use of indigenous plant species in re-vegetation. • Trees should be planted at suitable locations so as to interrupt slight lines (screen planting), between the adjacent area and the development.	Contractor	Proponent

8.2 Schedule for Implementation of Environmental Budget

The allocated environmental budget is **PKR 03 million approx.** as mentioned in project cost breakup. The allocated environmental budget will be spent on landscape/green zone management and solid waste management. The proponent will plant indigenous and ornamental plants to increase the aesthetic value of the area. Thus, the project is also a source of employment for locals and would help in economic development activities of the area.

8.3 Environmental Management Team along with their roles and responsibilities

As it is proposed project so hiring will be done after construction of aforesaid project whereas, the organizational roles and responsibilities of the key players are summarized below:

Table 16: Responsibilities of Management

Sr.#	Managers	Responsibilities

1.	**Contract Manager**	• Ensure EMP development. • Maintenance of EMP • Environmental issues identification within pre construction phase. • Communication of EMP with other employees.
2.	**Contractor**	• Ensuring that the control measures identified from environmental surveys are implemented as they are relevant to their work/visit. • Ensuring that the project management team is notified of any non-conformance of control measures or environmental incident where the environment has been put at risk.
3.	**Site Manager**	• Ensure site material and chemicals are safe • Controlled access arrangement to avoid hazards • Emergency egress arrangements to avoid dangerous situation. • Provide first aid facilities.
4.	**Site HSE Advisor**	• Ensure work is carried out in safe manner • Ensure good standards of workmanship • Health and safety advisor to complete the site waste management plan to be followed. • Ensure EMP implementation • Daily checks • Weekly checks • Consultation with workers
5.	**Site Environment Advisor**	• According to legislation and consent develop EMP • Ensure application of EMP • Carry out site inspection

6.	**Public Contact Officer**	• First point of contact for members of the public • Arrange and manage public forums • Maintain relation with stakeholders • Door to door surveys as appropriate • Coordination with work

8.4 Proposed Monitoring Program

Proposed monitoring has been mentioned in Environmental Management Plan. Moreover, during construction, monitoring of ambient air, noise and water quality will be done by EPA certified Lab as per requirement/condition of Environmental Approval/NOC.

8.5 Proposed EMP reporting and reviewing procedure

During construction, EMP reporting and reviewing will be done by the contractor/HSE department. Regular monitoring will be done and reports will be submitted in EPA as per condition of Environmental Approval of construction phase.

Monitoring reports will be reviewed by EMP team and HSE department of M/S Quality Plast (Pvt) Ltd and then will be shared by EPA.

Photographic records will also be maintained

Recorded data will be reviewed by supervisory contractor/proponent so that it can be further improved if required.

Regular monitoring will be conducted and submitted to EPA. Moreover, copy of NOC and EIA report will be provided to contractor for compliance of EMP and conditions of NOC.

8.6 Environmental Training

Training is an integral part of a preventive strategy. Environmental and disaster management training will be required to ensure proper implementation of effective environmental management and monitoring plan; and disaster management plan. However, training could be organized by proponent involving relevant staff. As a trainer, competent Consultant can be outsourced. Important training under the spectrum needs to include:

- Training on fire fighting and safety management;
- Training on environmental safeguards and compliance;
- Staff training on environmental monitoring and reporting;
- Training on occupational health and safety measure.

Table 17: Training Schedule

Target Audience	Trainers	Contents	Schedule
Selected Management Staff	Subject Expert	Key finding of mitigation measure	After every five months
All Personnel	HSE Officer	Mitigation measures especially firefighting, safety, health and environment (emissions & discharges) etc.	Monthly
Technical Staff	HSE Officer	Waste disposal, vehicle movement restriction and other mitigation measures	After every three month
Other Staff	HSE Officer	Waste disposal, resource conservation and other mitigation workers	Monthly

10 PUBLIC CONSULTATION AND PUBLIC DISCLOSURE

Public consultation refers to the process by which the concerns of various stakeholders and local community who have a plausible stake in the environmental management & associated impacts of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. According to the Review of IEE and EIA Review Regulations, 2000 public consultation is mandatory for any socio-environmental study for the commencement of any project.

General

Impact assessment survey and public consultation sessions held with different stakeholder groups that may be impacted by the proposed project commencement were carried out. The consultation process was carried out in accordance with the guidelines laid by EPA, Punjab. The objectives of this process were to:

- Share information with stakeholders on proposed project establishment.
- Access the impacts on the physical, biological and socio-economic environment.
- Understand stakeholder concerns regarding various aspects of the project commencement.
- Note valuable suggestions of local stakeholders to improve the proposed project design.
- Understand the perceptions, assessment of social impacts and concerns of the affected people/communities of the project area.
- Find out the awareness level and situation of acceptability to identify any issues for the implementation of the proposed project.
- Invite people to express their views about the positive/negative impacts on their lifestyles and environment.
- Disclose information about contact offices/officers for any complaints/queries.

It is envisaged, there will be no social impact being foreseen due to the commencement of aforesaid project at aforesaid location, the nearest community is located at safe distance from the project area. This EIA Report includes all the comments, which were taken into account during the social survey and preparing the definitive development concept for the installation and operation of proposed project. Public consultation performas is attached as **Annex-V** of this EIA Report.

Objectives of Consultation

Public consultation plays a vital role in studying the impacts of the proposed project on stakeholders in successful implementation and execution of project. It provides an opportunity to exchange knowledge with the beneficiaries and affected parties. Referring particularly to a project related to environmental assessment, involvement of the public is all the more essential, as it leads to better and more acceptable decision-making. The overall objective of consultation with stakeholders is to help verify the environmental and social issues, besides technical ones, that have been presumed to arise and to identify those which are not known or are specific to project. In fact, discourse with many who have thoroughly observed the site conditions in the pre-development phase, goes a long way in updating the knowledge and understanding.

Consultation Process

Information disclosure, public consultation and discussion regarding the various aspects of project with the people of area are necessary. This process is intensified during the EIA Studies and separate rounds of public consultations were held with local community and various government departments as listed below. Surveys were carried out in order to investigate physical, biological and socio-economic resources falling within the immediate AOI of the project. Primary data collection included:

- Data collection regarding the socio-economic condition of study area.
- Pre-testing of socioeconomic survey tools in the field.
- To consult the locals for collection of information on biological environment.

Various meetings with the stakeholders were held the following objectives:

- Share information with stakeholders regarding said project and expected impacts on community in project vicinity.
- Understand stakeholders' concerns regarding various aspects of the project, including the existing condition of the upgrading requirements, and the likely impact of construction and operation activities.
- Provide an opportunity to the public to influence the project design in a positive manner.
- Obtain local and traditional knowledge, before decision making.
- Increase public confidence about the proponent, reviewers and decision makers.

- Reduce conflict through the early identification of controversial issues and work through them to find acceptable solutions.
- Dissemination of information through discussions, education and liaison.
- Documentation of information narrated by the stakeholders and mitigation measures proposed by the stakeholders.
- Incorporation of public concerns and their address in the EIA and eliciting their comments and feedback.
- Create a sense of ownership of the proposal in the mind of the stakeholders.

10.1 Proponent's Environmental Management Team

Consultation regarding Establishment of plastic container manufacturing and printing unit by M/S Quality Plast (Pvt) Ltd was done with Proponent's Environmental management Team and anticipated impacts were discussed. Concerns of locals, Environmental Practitioners & experts and Government departments were discussed and asked to consider them while construction of above-said project. Locals will be preferred for employment after providing proper training. Mitigations measures mentioned in EMP will be truly implemented.

10.2 The responsible authority

Overall responsibility for implementation of EMP will be that of project proponent. He will appoint a HSE/Project Manager of relevant qualification. HSE/Project Manager will act as Environmental Manager and will manage the all HSE condition at the PEQS.

10.3 Other department and agencies

Following officers of government departments were consulted by the socio-environmental team of the consultants and concerned details about the project were noted down through personal interviews, group meetings, etc., in their offices, for instance, see **Table 17** below.

Table 18: Views of Participants of Public Sector Stakeholders

Sr#	Participant	CNIC/Designation	Concerns/Remarks
Environmental Protection Department			

1	**Mr. Waseem Cheema**	**Deputy Director (Field), EPA**	Following comments area summarized to control the pollution: • Solid waste should be managed in environmentally friendly manner. • Wastewater should be treated effectively prior to final disposal • HSE* at the site should be managed effectively. • No impact is being foreseen due to the selected location. • Locals should be given job opportunity.
2	**Mazhar Farid**	**Environmental Inspector**	
Social Welfare Department			
3	**Zill-e-Huma**	**Deputy Director Officer**	Following comments are suggested by the Deputy Director on the behalf of Social Welfare Department: • Final goods should be affordable for the locals. • The proposed product should facilitate locals and they should be economical. • Job opportunities should be given to the locals. • Wages should be given according to the work assign to them. • Life insurance of the workers should be given as well as all the facilities should be given as per labor laws.
Irrigation Department			
4	**Malik Anwar**	**Superintendent Engineer**	Following comments were suggested: • Untreated wastewater should not be disposed off • Beneficial as job opportunities will

			be available to the local residents.
Forest Department			
5	**Mazhar Masood**	**Divisional Forest Officer Faisalabad**	Following recommendation were suggested by the forest department: • Planation and landscape activities should be carried out on broader scale. • Indigenous species such as; Arjarn, Barna, Neem, Suharjna, Amaltas and Jaman should be planted. • Proper drainage system must be available at site.
** HSE= Health, Safety and Environment*			

10.4 Environmental Practitioners and experts

Consultation with Environmental Practitioners and experts was done and following comments and suggestions were noticed.

Sr. No	Name	Designation	Comments/Suggestions
1.	**Engr. Taha Raheem**	Environmental Engineer	Following comments are summarized to control the air pollution generation during operational phase • It should be ensured that the pollution abatement technique must be adopted to control emissions. • Site must be re-vegetated.
2.	**Ms. Humaira Nawaz**	Environmentalist	• She said that Installation of aforementioned unit will have positive impact on economy but its construction should be done in Environmental Friendly way • During construction and operation emissions must be controlled properly • Basic facilities should be provided to local community
3.	**Ms. Rabbia**	Ph.D. Scholar Environmental Sciences	Following mitigation measures should be adopted: • Tree plantation in designated green zones should be carried out

			• Proper disposal of the solid waste • HSE management measures should be adopted and implemented effectively.
4.	**Mr. Mehmood**	Environmentalist	• He said that locals should be preferred for employment. • Value addition of area • In case of outsiders residence must be provided • Proper mitigation measures must be adopted while construction and operation of this project

10.5 Consultation with Affected and wider community

In addition, to the use of direct methods to evince the response of the various stakeholders in targeted population residing in study area was ascertained by conducting a sample survey, through specially formatted questionnaires (attached in the **Annex-V** of this EIA Report). Questions posed to the public were related to creation of possible impacts, adverse impacts and beneficial impacts, including; employment opportunities, income generation activities, change in living standards and provision of the basic amenity.

Personal views of the respondents on the establishment of aforementioned unit possible disturbance to the residents near the AOI and infringement of their privacy were also recorded. The various rounds of public meetings and consultations were arranged in project and study area. The objectives of consultation with the affected persons are given in the table below:

- Disclose the proponent plan for the construction/operation of said facility.
- To share information on the design and specifications of project works.
- To analyze the expected impact on the socio-economic environment.
- To understand their concerns regarding various aspects of project commencement.

4.8 Views, Concerns and Suggestions of Various Stakeholders

The major socio-economic concerns and problems of the affected persons of various communities have been given in tabulated form below (**Table 19**) along with their main

concerns and remarks. Community showed a lot of concerns; a few are being mentioned here:

- Removal of shrubs and trees should be avoided to the extent possible in the case of clearance green zones should be established within the facility.
- Indigenous tress around the facility should be planted to control air pollution and as the compensation of removed trees.
- The project will become the source of income for local to earn their livelihood easily and honorably, so locals should be preferred.
- The area will inhabit and will be used for the beneficial purposes.
- For the solid waste management and waste disposal, proper disposal techniques should be adopted.
- Water spraying/sprinkling should be done on the regular basis for dust suppression.
- Employment opportunities will be generated and locals should be hired on the priority basis.
- The air pollution is one of the major impact from which Punjab is being affected at the large scale. So, ambient air quality should be monitored regularly and air pollution expected to generate from the operation should be mitigated beforehand.
- Good relations with the local communities will be promoted by encouraging Contractor to provide opportunities for skilled and unskilled employment to the locals as well as on-job training.
- Noise generated activities should be carried out during day hours.

The views and the concerns of the local communities, direct and indirect stakeholders has been complied and are presented in the tabular form below:

Table 19: Views and Concerns of Stakeholders

Sr#	Respondents	CNIC/Contact Nos.	Concerns
1	Ashfaq Ashraf	33100-5586905-9	During the survey in the study area following concerns of the local community were noted: • Air pollution should be controlled effectively such as emissions generated from power generating activities. • Locals should be preferred for the job opportunities. • Wastewater should be treated prior to final disposal in nearby drain. • 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. • Planation should be carried out at extensive scale. • Construction activity should be carried out during day hours. • Noisy activities should be confined. • Workers should be hired from local
2	Akbar Ali	34101-6996979-5	
3	Asghar Ali	35502-0115975-3	
4	Azhar Hussain	35404-1583563-7	
5	Ali Faiyz	35404-9639820-1	
6	Azhar Javed	0348-7530319	
7	Azhar Ali	35501-0320261-5	
8	Ajaz Ahmed	33100-6629033-3	
9	Hasseb-ur-Rehman	33103-0407065-7	
10	Hafiz M. Naseem	35201-8203359-3	
11	M. Hassan	33100-7069780-7 0308-8301104	
12	Hajhat Ali	35403-1152260-1	
13	Iftikhar Ashraf	33100-0960726-9	
14	Jalal Raiz	35404-0851938-1	
15	M. Tayyab	33102-94494070-1	
16	M. Qasim	33103-5708449-5	
17	M. Imran Ali	33100-3718960-1	
18	M. Asif	33102-4405857-9	
19	M. Bilal	33102-6879266-9	
20	M. Jameel	35404-6472528-5	
21	Mehran Ali	33102-0749901-7	

22	Mehmood Ahmed	35404-5098871-1	community. • Proper disposal of solid waste should be practiced. • Indigenous tress around the facility should be planted to control air pollution. • Safeeda can be planted in the project area as the area in known to be affected by the logging and salinity. • Removal of shrubs and bushes should be avoided to the extent possible.
23	M. Hussain	35404-9874025-7	
24	Tahir Mahmood	35404-4675969-3	
25	Naseer Masshi	35404-8149454-3	
26	Shahbaz	35502-0145928-7	
27	Saif-ur-Rehman	0321-6616660	
28	Sakhawat Ali	31203-8256953-1	
29	Usman Haider	36602-3574677-3	
30	Uzair Hassan	35404-5501547-7	
31	Waqar Ahmed	33102-20354307	
32	Zunair Hassan	33103-8161080-1	
33	Zeeshan Liaqat	0308-3225030	