Table of Contents

CHAPTER 1: INTRODUCTION **12**
1.1 Purpose of Report **12**
1.2 Screening: **12**
1.3 The Proponent **12**
1.4 Project Nature and Size **13**
1.5 Project Location **13**
1.6 Regulatory Compliance **13**
1.7 Details of Consultant **14**
CHAPTER 2: PROJECT DESCRIPTION **15**
2.1 Screening/Type and Category of Project **15**
2.2 Objectives of Project **15**
2.3 Alternatives **16**
2.3.1 Relocation Option **16**
2.3.2 Project Alternatives **16**
2.3.2 Site Alternatives **16**
2.4 Location and Layout of Project **17**
2.5 Land Use on Site **17**
2.6 Road Access **17**
2.7 Vegetative Features **18**
2.8 Cost and Magnitude of Operation **18**
2.9 Schedule of implementation **19**
Operational phase 19
2.10 Project Description **19**
2.10.2 Project's Operational Activities 20
2.10.3 Process flow 21
25
25
2.11 Amenities **25**
2.11.1 Electricity **25**
2.11.2 Ground Water Resource **25**
2.12 Management Plans ..... Error! Bookmark not defined.
Air Emissions ..... **Error! Bookmark not defined.**
Wastewater Management and Disposal 26
Waste Management 27
2.13 Staff/Manpower **27**
2.14 Emergency Preparedness **27**
2.14.1 Safety Trainings **28**
2.14.2 Use of Drugs and Narcotics **28**
2.14.3 Personal Protective Equipment **28**
2.14.4 Emergency Response Plan **28**
2.14.5 Fire Management **28**

2. 15 List of Machinery 29
2.16 Relocation and Rehabilitation Plan 29
2.17 Land ownership Documents 29
2.18 Government Approvals 29
CHAPTER 3: DESCRIPTION OF THE ENVIRONMENT 30
3.1 Project Area ..... Error! Bookmark not defined.
3.2 Methodology ..... Error! Bookmark not defined.
3.3 Data Collection ..... Error! Bookmark not defined.
3.4 Social Survey ..... Error! Bookmark not defined.
3.5 Review of Legal and Administrative Framework ..... Error! Bookmark not defined.
3.6 Baseline Conditions ..... Error! Bookmark not defined.
3.7 Physical Environment ..... Error! Bookmark not defined.
3.7.1 Climate ..... Error! Bookmark not defined.
3.7.2 Ground Water and Water Supply ..... Error! Bookmark not defined.
3.7.3 Seismicity and Geology: ..... Error! Bookmark not defined.
3.8 Ecological Resources ..... Error! Bookmark not defined.
3.8.1 Flora ..... Error! Bookmark not defined.
3.8.2 Fauna ..... Error! Bookmark not defined.
3.9 Socio-Economic Resources (Quality of Life Values) ..... Error! Bookmark not defined.
3.9.1 Study Area Profile ..... Error! Bookmark not defined.
3.9.2 Literacy Rate/Education ..... Error! Bookmark not defined.
3.9.3 Income ..... Error! Bookmark not defined.
3.9.4 Occupation ..... Error! Bookmark not defined.
3.9.5 Economic Development ..... Error! Bookmark not defined.
3.9.6 Social and Cultural Resources ..... Error! Bookmark not defined.
3.10 Site Suitability ..... Error! Bookmark not defined.
CHAPTER 4: IMPACT ASSESSMENT MITIGATION 40
4.1 Objectives 40
4.2 Methodology 41
4.2.1 Magnitude 41
4.2.2 Immediacy 41
4.2.3 Sustainability and Reversibility 41
4.3 Purpose of Mitigation Measure 41
4.3.1 What is the problem? 41
4.3.2 When problem will occur and when it should be addressed? 42
4.3.3 Where problem should be addressed? 42
4.3.4 How the problem should be addressed? 42
4.3.5 Ways of Achieving Mitigation Measures? 42
4.3.6 Changing in Planning Design 42

4.4 Improved Management and Monitoring Practices 42
4.5 Impacts Associated with Project Location 43
4.6 Impact Assessment Methodology 43
4.6.1 Screening of Potential Impacts 43
4.6.2 Identification of Mitigation Measures 43
4.6.3 Evaluation of the Residual Impacts 44
4.6.4 Identification of Monitoring Requirements 44
CHAPTER 5: SCREENING OF IMPACTS AND THEIR MITIGATION MEASURE 45
5.1 Impact Evaluation 45
5.1.1 Methodology for Impact Evaluation 45
5.2 Impact and Mitigation Management 49
5.2.1 Approaches for Mitigation Measures 49
5.3 Expected Positive Impacts 50
5.3.2 Efficient and Economic Residential Availability 50
5.4 Adverse Impacts and Mitigation Measures 50
5.5 Impacts Due to Project Location 50
5.5.1 Relocation of People 50
5.5.2 Loss of Vegetation 50
5.5.3 Shifting of Utilities 50
5.5.4 Impact on Archaeological/Cultural Property 50
5.6 Impacts Due to Project Design 50
5.7.1 Contamination of Soil and Water Quality Degradation Error! Bookmark not defined.
5.7.2 Impact on Air Quality ..... Error! Bookmark not defined.
5.7.3 Soil Erosion ..... Error! Bookmark not defined.
5.7.4 Noise Pollution ..... Error! Bookmark not defined.
5.7.5 Traffic Congestion ..... Error! Bookmark not defined.
5.7.6 Solid Waste ..... Error! Bookmark not defined.
5.7.7 Ecological Impact ..... Error! Bookmark not defined.
5.7.8 Social Impacts ..... Error! Bookmark not defined.
5.8 Impacts Due to Project Operation 51
5.8.1 Air Environment 51
5.8.2 Noise 51
5.8.3 Water Environment 51
5.8.4 Solid Waste 52
5.9 Potential Environmental Enhancement Measures 52
5.9.1 Tree Plantation 52
CHAPTER 6: ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS 53
6.1 Objectives 53
6.2 Management Approach 53
6.2.1 Proponent 54
6.2.2 Contractors 54
6.3 Components of EMMP 54

6.3.1 Remedial and Mitigation Measures 54
6.4 Environmental Management and Monitoring Framework 54
6.4.1 Environmental Management Team 58
6.4.2 Impacts Management and Monitoring Plans 60
6.6 Proposed EMP Reporting and Reviewing Procedures 69
6.6.1 Meetings 69
6.6.2 Changes-Record Register 69
6.6 Training and Capacity Building 69
6.7 Impacts and their Mitigation Summary 70
6.8 Equipment Maintenance Details 72
6.9 Environmental Budget 72
CHAPTER 7: PUBLIC CONSULTATION AND INFORMATION DISCLOSURE 72
7.1 Proponent's Environmental Management Team 72
7.2 The Responsible Authority 75
7.3 Objectives of Consultation 75
7.4 Identification of Stakeholders 76
7.4.1 Direct Stakeholders 76
7.4.2 Indirect Stakeholders 76
7.4.3 Other Departments and Agencies 76
7.5 Public Disclosure 77
7.6 Consultation Process 77
7.7 Environmental Practitioners and Experts 78
7.8 Affected and Wider Community 78
7.8.1 Views, Concerns and Suggestions of Various Stakeholders 78
7.9 Addressing Public Concerns 79
7.10 Acceptance Level of the Project 79
CHAPTER 8: CONCLUSION & RECOMMENDATIONS 80
8.1 Merits and Demerits 80
8.2 Recommendations 80

LIST OF TABLES

Table 1: Salient Features of Project 7
Table 2: Details of Proponent 12
Table 3: Consultant Details 14
Table 4: Vegetative Features of the Project Area 18
Table 5: Cost Breakup 19
Table 6: Breakup of Environmental Budget 19
Table 7 List of Chemicals and Dyes 24
Table 8: Concerns and Solutions 31
Table 9: Impact Screening Checklist 46
Table 10: Impact Evaluation Matrix 48
Table 11: Approaches for Mitigation Measures 49
Table 12: Environmental Management & Monitoring Plan 55
Table 13: Environmental Management and Monitoring Plan 56
Table 14: Roles and Responsibilities 58
Table 15: Environmental Monitoring Plan 61
Table 16: Air Quality Management and Monitoring Plan 62
Table 17: Wastewater Management and Monitoring Plan 63
Table 18: Health and Safety Plan Management and Monitoring Plan 67
Table 19: Training and Capacity Building Plan 69
Table 20: Impacts Summary 71

LUBNA PERVIN (librarian) EPA librarian.epa 201.53.234.71 21/11/2020 2:53:40 PM

LIST OF FIGURES

Figure 1: Demarcated Area of M/S Pak Solo Dyeing 13
Figure 2: Design of Dry Scrubber.....26
Figure 3: Manufacturing process.....31
Figure 4: Agro-Ecological Zones of Pakistan.....36
Figure 5: Seismic Zones of Pakistan.....37
Figure 6: Projected Population of Multan.....41
Figure 7: Literacy Rate of Project Area.....42
Figure 8: Income Level.....43
Figure 9: Occupation of the locals.....43
Figure 10: Percentage of people in favor or against the project.....46
Figure 11: Impact Assessment Hierarchy.....58

LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM

EXECUTIVE SUMMARY

This executive summary presents an overview of the main findings of the Environmental Impact Assessment Report for M/S Pak Solo Dyeing at 25 Km-Khori Stop, Waseem Sajjad Road, Muridake, Sheikhupura. The main goal of this project is to installation of machinery for spinning, weaving & dyeing unit to cope with growing market need and remain competitive in the market.

1. Introduction

The said project is the installation of machinery **"M/S Pak Solo Dyeing"**. According to Schedule-II of IEE and EIA Regulations, 2022; the proposed project falls under Category B (6) Textile Unit Comprising of Dying & Printing i.e., the project requires an EIA Study. Thus, an EIA Report is being prepared and submitted accordingly for environmental approval.

The estimated project cost is **PKR 75 Million,** the breakdown of the project cost is given in Chapter 2 of this EIA Report.

2. Project Description

The basic purpose of this project is the installation of machinery, with a focus on manufacturing dyed fabric using cotton as the raw material. Cotton will first be converted into yarn through spinning, then woven into ecru fabric, and finally dyed in an environmentally and economically friendly manner. The total area of the project is 115464 SFT and area around the project is self-develop industrial land. It is located at 25 Km-Khori Stop, Waseem Sajjad Road, Muridake, Sheikhupura. Hence, the EIA of M/S Pak Solo Dyeing is being submitted for environmental approval.

3. Name of Organization Preparing the Report

EnvironTech Consultants (Pvt) Ltd.
Office No. 11, 2nd Floor, Center Point Plaza, Main Boulevard Gulberg, Lahore.
Phone: 0303-4342302

Table 1: Salient Features of Project

Sr#	Project Salient Features	
1.	**Project Title**	M/S Pak Solo Dyeing.
2.	**Purpose of Project**	The basic purpose of this project is the installation of machinery, with a focus on manufacturing dyed fabric using cotton as the raw material. Cotton will first be converted into yarn through spinning, then woven into

		ecru fabric, and finally dyed in an environmentally and economically friendly manner
3.	**Project Location**	25 Km-Khori Stop, Waseem Sajjad Road, Muridake, Sheikhupura. **Coordinates:** 30°11'24.4"N 71°31'53.7"E
4.	**Total Area of Project**	115464 SFT
5.	**Capacity**	20 MTon/day
6.	**Cost of the Project**	PKR 75 Million
7.	**Proponent Name**	Muhammad Qasim S/O Muhammad Shafiq
8.	**CNIC Number**	16202-5844217-7
9.	**Address of Proponent**	R/O Dandoqa, Dak Khana Khas, Dagai, Tehsil Razar, District Sawabi, KPK.
10.	**Consultant Name**	EnvironTech Consultants
11.	**Nature of Area**	Self-develop Industrial
12.	**Seismicity**	2A-Medium Intensity Level
13.	**Tree Planation**	At Designated Green Areas
14.	**Water Source**	Groundwater
15.	**Water Requirements**	Water required for drinking and domestic purpose would be 6-7 m^3/day.
16.	**Wastewater**	Process wastewater generated will be treated through Wastewater Treatment Plant. However, wastewater originated as a result of domestic use is estimated at 0.56m^3/day. The wastewater generated will be treated in septic tank. After treatment it will be discharged in the Municipal drain.
17.	**Solid Waste**	During the operation phases, solid waste will be transported to the city's waste dumping site through solid waste bunkers.
18.	**Source of Power**	WAPDA (GEPCO)
19.	**Manpower/Staff**	20-25 employees
**WAPDA=Water and Power Development Authority;*		

4. Major Impacts and Recommended Mitigation Measures

In order to identify all the impacts associated with the project during operational activity with potential to cause adverse environmental impacts, a thorough review has been conducted. Although, there is very low chances of any adverse impact's occurrence on the surrounding environment. However, in case of impact arises from the project activity possible necessary measures will be adopted to control the same. Overall, the project has positive social impacts specifically on the local population and generally contributes in Pakistan GDP. The project may have some adverse environmental impacts of minor to moderate magnitude which will be controlled through mitigation measures proposed in Environmental Management and Monitoring Plan (EMMP). Moreover, clearing of the vegetation will be done during site clearance but restoration and reclamation will be carried out by the plantation of native species in specified green areas. Environmental impacts have been identified and mitigation measures are recommended within the Project Area of Influence; which lies within 1 km boundary of the proposed project facilities. The major impacts on physical, biological and social environments are described as under:

Impact Summary

Environmental Parameters	**Impact Assessment during Different Phases**
	Operational
A: Physical	
Land Resources	
Soil Erosion and Contamination	0
Transportation	-1t
Solid Waste and By-Products	-2p
Land Use	NA
Air Resources	
Noise Pollution	-1t
Air Emission	-1t
Dust	-1t
Odor	-2t
Water Resources	
Ground Water	-1p
Surface Water	NA
Wastewater	-2p
B: Ecological	
Flora	
Tree Cutting	+1p
Fauna	
Terrestrial Fauna	+1p

C: Socio-Economic	
Employment Opportunities	+1p
Land Value Appreciation	+2t
D: Hazards	
Biological Hazards	NA
Physical Hazards	-1p
Chemical Hazards	-1p
Health and Safety	-1p
Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable; t= Temporary; p= Permanent; app= Applicable; 0= Negligible	

5. Environmental and Social Monitoring Plan

Environmental Management and Monitoring Plan (EMMP) were developed for effective implementation of the recommended mitigation measures. The EMMP includes check and balance to control and minimize the identified impacts and monitoring programs to oversee residual impacts, if any, during the operational phase. The EMMP describes procedures to be followed throughout the operation of the project. It also identifies the roles and responsibilities of all concerned personnel, including the persons reporting during the different project phases. Mitigations for physical, biological and socio-economic parameters will be measured to determine compliance with standards established in EMMP. The Monitoring Plan will record the inputs provided by various participants in the environmental and social management process. It will also check whether the prescribed national and provincial guidelines and plans are being followed and that the required mitigation measures and activities are being accomplished in time.

6. Monitoring Plans

During operational phase, monitoring is required to be carried out at least once in a month during rainy season to check the soil contamination and surface water level/condition. Moreover, periodic monitoring should also be carried out regarding ambient air quality, noise and dust level and worker safety. A detailed site monitoring plan has been developed and given in Chapter-6 of this EIA Report.

7. Conclusion

The findings of EIA Report showed that although the project is expected to have significant minor to moderate negative impacts on the environment during the operational phase, but the severity of these adverse impacts can be reduced significantly by adopting EMMP with true spirit as proposed in the Chapter 6 of this EIA Report. The impacts were assessed by frequent site visits, studying related projects and by reviewing the documents. Generally, the project is

planned to follow efficient environmental management systems. Specific environmental and social benefits have been mentioned below which depend on the proper application of mitigation measures suggested in EMMP and best engineering practices.

8. Recommendations

The intensity and severity of impacts occurred due to installation of machinery M/S Pak Solo Dyeingvaries with change in the nature and magnitude of the project as well as depends upon the baseline environmental conditions of the area. The mitigation measures will require constant information flow and consultation with the stakeholders to ensure the least adverse social-economic impact to outweigh the "no project development" scenario.

- The adverse environmental impacts can be reduced significantly by adopting best management and monitoring practices as well as by implementation EMMP with true spirit.
- Proper PPEs including gloves, face masks, head gear etc. will be provided.
- No compromise on public health and environment should be allowed.
- Waste minimization practices should be introduced to workers by conducting lectures on spot to aware the workers about the long-term benefits of the same in lieu of surrounding environment.
- A proper tree plantation plan should also be developed in order to make the process environment friendly.
- Small domestic waste storage bins should be placed at different locations for proper collection and disposal of the solid waste.
- It is recommended that the Proponent should obtain an Environmental Approval (NOC) from the Punjab-EPA before proceeding further.

CHAPTER 1: INTRODUCTION

1.1 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 to assess the suitability of the project in that proposed area.
- To identify operation activities and to assess their impacts on environment.
- Aid 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 supervise 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)

LUBNA PERVIN (librarian) EPA librarian.epa 101.53.234.71 21/11/2026 2:53:40 PM

1.2 Screening:

As per Review of Environmental Impact Assessment (IEE) and Environmental Impact Assessment (EIA) Regulations, 2022 According to Schedule-II of IEE and EIA Regulations, 2022; the proposed project falls under ***Category*** B (6) Textile Unit Comprising of Dying & Printing i.e., the project requires an EIA Study.

1.3 The Proponent

The details of the proponent of the proposed project are given below:

Table 2: Details of Proponent

1.	**Name**	**Muhammad Qasim S/O Muhammad Shafiq** **CNIC No: 16202-5844217-7**
2.	Company	M/S Pak Solo Dyeing.
3.	Address	R/O Dandoqa, Dak Khana Khas, Dagai, Tehsil Razar, District Sawabi, KPK.

1.4 Project Nature and Size

The proposed project is the installation of machinery of *"M/S Pak Solo Dyeing"* at 25 Km-Khori Stop, Waseem Sajjad Road, Muridake, Sheikhupura. The proponent's objective is to develop the 115464 SFT of area into a spinning weaving & Dyeing unit.

The estimated project cost is **PKR 75 Million,** the breakdown of the project cost is given in Chapter 2 of this EIA Report.

1.5 Project Location

The Sid location for the installation of machinery of the project of **M/S Pak Solo Dyeing**is at 25 Km-Khori Stop, Waseem Sajjad Road, Muridake, Sheikhupura. The geographical location of the proposed area 31°52'4.64"N 74°14'24.50"E. The total demarcated 2 area is given below;

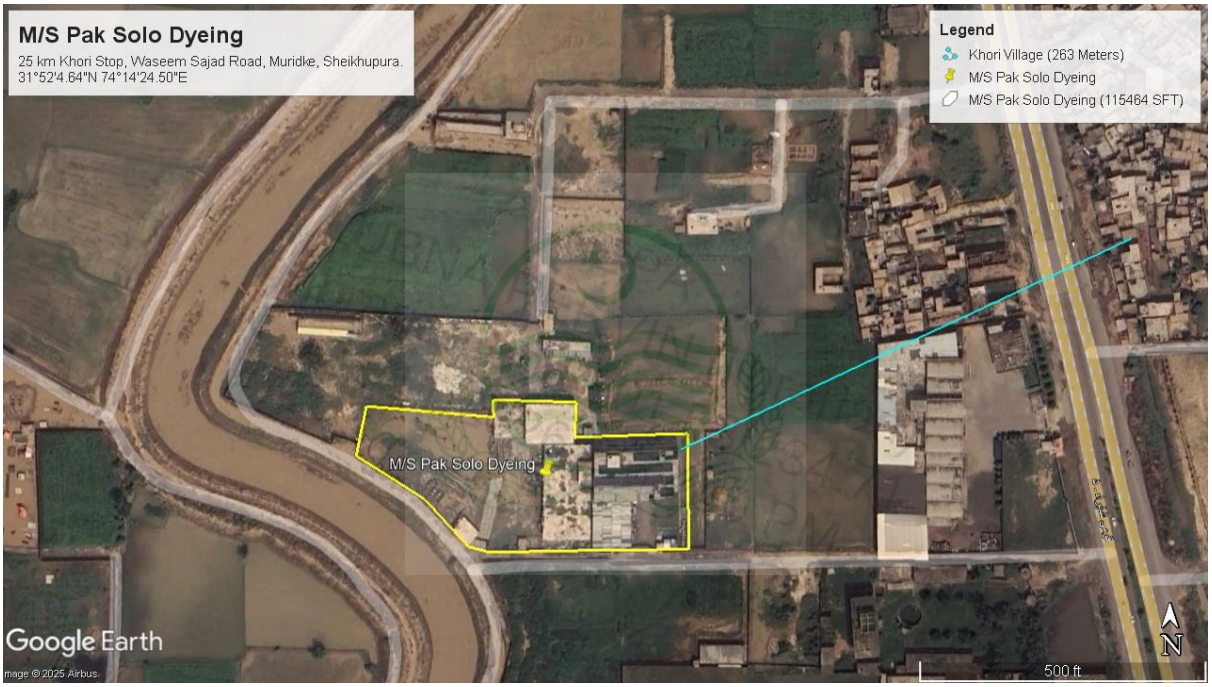


Figure 1: Demarcated Area of M/S Pak Solo Dyeing

Environmental sensitivity of the project includes the distance between the project area periphery from ecologically important features and socially significant infrastructures present in the study area. No ecology sensitive receptor such as; forest or reserved area is present within 4-5 km vicinity that could be impacted due to the installation and operation of the proposed project.

1.6 Regulatory Compliance

As per IEE/EIA Regulations 2022, it is mandatory for the proponent of any development project to obtain Environmental Approval (NOC) from EPA by filing an IEE or EIA as the case may be. For this purpose, the proponent has decided to engage environmental consultants,

M/S EnvironTech Consultants Pvt Ltd to prepare EIA Report. The purpose of this study is to identify the environmental and social baseline of the project and study area i.e., physical, biological, socio-economic, cultural changes and to assess all possible impacts anticipated during the installation and operation phases of the proposed project with the aim to find out appropriate mitigation measures to either eliminate those impacts or to bring them to acceptable level as well as to formulate Environmental Management and Monitoring Plan (EMMP) for implementation in sustainable manner. This EIA 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.

Following rules, regulations and acts are considered for the commencement of the proposed project:

- ⇨ Punjab Environmental Protection Act, 1997 (Amended 2012)
- ⇨ Punjab Environmental Quality Standards (PEQS)
- ⇨ Self-Monitoring and Reporting Rules (SMART)
- ⇨ Environmental, Health and Safety Guidelines

1.7 Details of Consultant

The proponent of **M/S Pak Solo Dyeing** has engaged **EnvironTech Consultant** to carry out the IEE Study for the installation and operation of aforesaid project in accordance with Punjab-EPA guidelines. For this purpose, the company engaged the group of professionals which comprises of environmental specialists and social scientists. The details of the consultant are given below:

Table 3: Consultant Details

Consultant Details	
Consultant	EnvironTech Consultants
Address	Office no.11 (2nd floor) Centre point Plaza, Main Boulevard Lahore.
Contact No.	0301-8176593
Focal Person	
Name	Amna Hafeez

CHAPTER 2: PROJECT DESCRIPTION

This section of the study concentrates on details of the project and its salient features, such as its location, site layout, objectives, selection of alternative sites and technology, cost, and magnitude of operation.

2.1 Screening/Type and Category of Project

Section 12 of Punjab Environmental Protection Act, 1997 (amended 2012) states "No proponent of a project shall commence 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 (IEE), and has obtained from the Government Agency approval in respect thereof." Punjab Environmental Protection Act provided the guidelines for categorizing the projects. According to Schedule-I of IEE and EIA Regulations, 2022; the proposed project falls under *Category* B (6) Textile Unit Comprising of Dying & Printing*)* i.e., the project requires an EIA Study. Thus, an EIA Report is being prepared and submitted accordingly for approval.

The project is constructed & the installation of machinery of Dyeing unit. Total cost of the project 75 million.

2.2 Objectives of Project

Although the principal purpose of the building relates to the economic development of the city at national level, the proposed development also aims to:

- The primary objective of the proposed project is to establish a modern spinning, weaving, and dyeing facility that ensures efficient production and high-quality output. The specific objectives are:
- To utilize cotton as the raw material and manufacture yarn through spinning, fabric through weaving, and value-added dyed fabric through eco-friendly dyeing processes.
- To ensure uniform dyeing with the required color fastness while meeting international quality standards.
- To fully integrate with and support the existing industrial infrastructure of the city.
- To develop a self-contained facility that enables smooth operations and meets customer requirements effectively.
- Remain competitive.

- Create new employment opportunities as a part of the project activities scope.

2.3 Alternatives

The details of the site alternatives and technology alternatives are discussed below:

2.3.1 Relocation Option

Relocation option to a different site is an option available for the project implementation. At present the proponent does not have an alternative site. Looking for the land to accommodate the scale and size of the project and completing official transaction on it may take more than three years although there is no guarantee that the land would be available. This would also lead to a situation like No Project Alternative option.

The other consequence of this is that it would be a discouragement for private/local investors. In consideration of the above concerns and assessment of the current proposed site, relocation of the project is not a viable option.

2.3.2 Project Alternatives

The No Project option in respect to the proposed project implies that the status quo is maintained. This option is the most suitable alternative from an extreme environmental perspective as it ensures non-interference with the existing conditions.

The No Project Option is the least preferred from the socio-economic and partly environmental perspective due to the following factors:

I. Local skills would remain under-utilized.
II. Reduced interaction both at local, national, and international levels.
III. Discouragement for investors

From the analysis above, it becomes apparent that the No Project alternative is no alternative to the local people and proponent.

2.3.2 Site Alternatives

Since the proposed project is to be located in an industrial area, under the undisputed lease of proponent the site is most feasible in context of environment as well as in achieving the intended objectives. The selected site also houses no ecologically sensitive area within a 10 km radius and status of current Environment is satisfactory, so, it is best suited for the project.

Moreover, the site is considered suitable because of the following features:

- The proposed site falls under the jurisdiction of the proponent and has been acquired for the installation machinery of a unit. It has been observed to be almost level in topography, with sparse vegetation located inside the site area.
- No endangered fauna/flora has been observed near the project site.

- The proposed site does not fall in any category of protected or environmentally sensitive area.

The location of project is best suited for proposed activities. So, no alternative for site is analyzed.

2.4 Location and Layout of Project

The Sid location for the installation of machinery of the project of **M/S Pak Solo Dyeing**is at 25 Km-Khori Stop, Waseem Sajjad Road, Muridake, Sheikhupura. The geographical location of the proposed area 31°52’4.64”N 74°14’24.50”E. The total demarcated project area is given below:

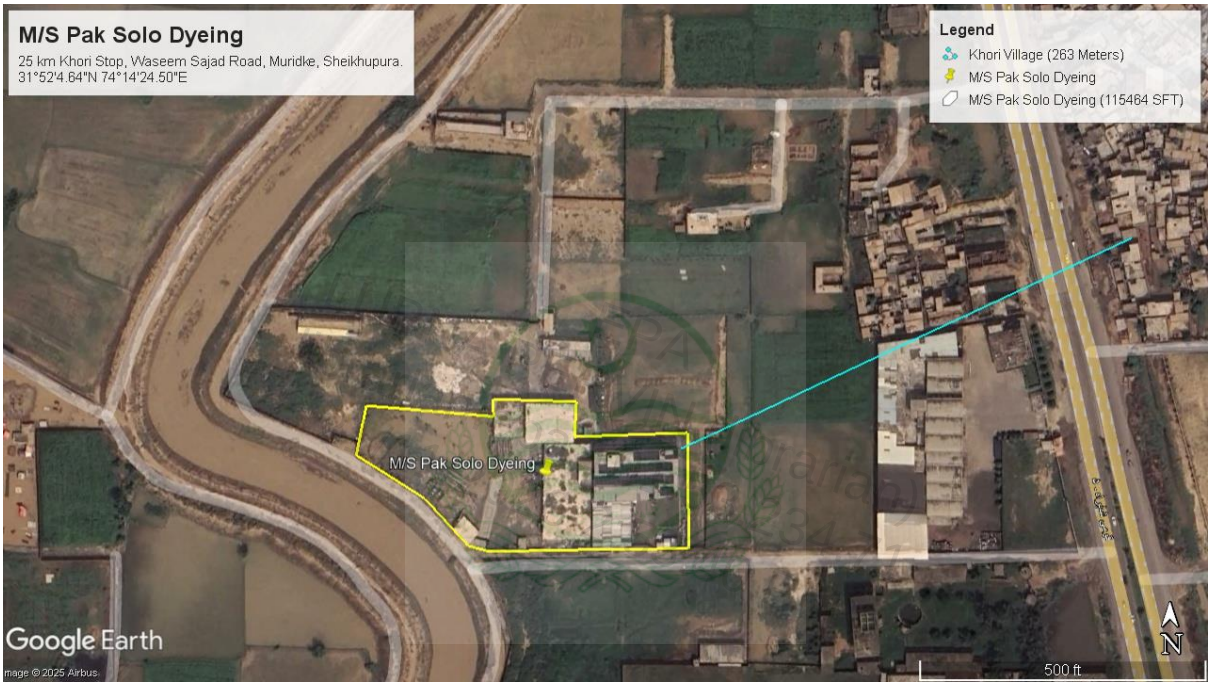


Figure 2: Project Area

The surface land in and around the project area is leveled and fertile being reserved for industrial purpose. No ecology sensitive receptor such as; forest or reserved area is present within **10 km** vicinity that could be impacted due to the installation of machinery of this project.

2.5 Land Use on Site

Constructed Building

2.6 Road Access

The project site is well connected to road network **i.e., G.T Road.** The road network is shown below in Figure.

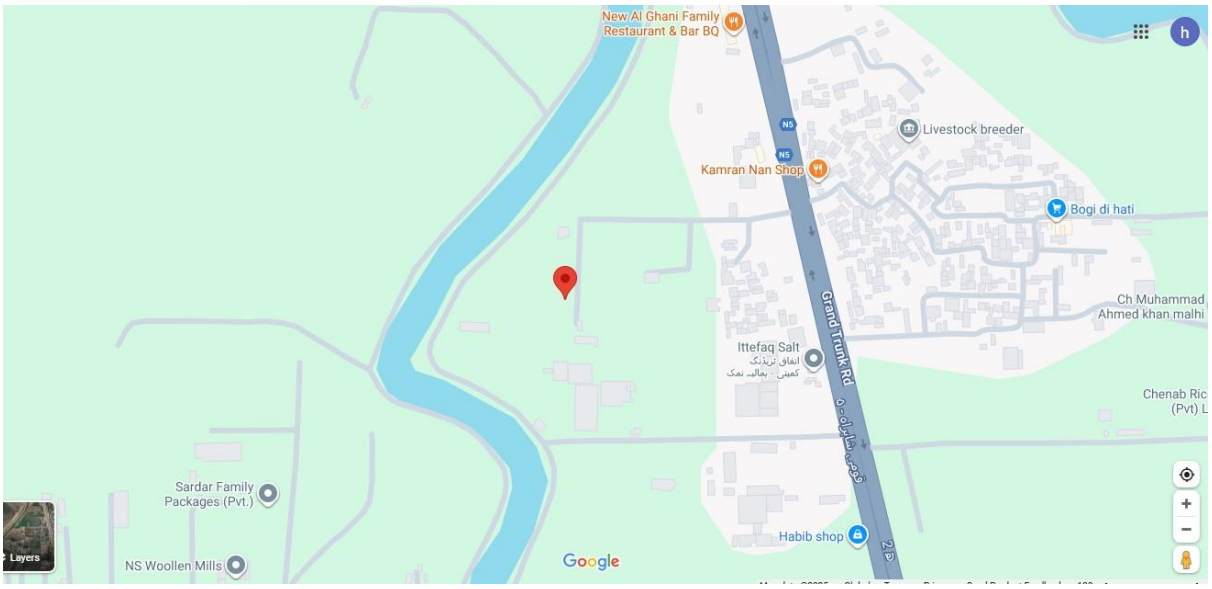


Figure 3: Road Access Plan

2.7 Vegetative Features

The area around the project area is industrial. There are no such vegetative features in or around the area include except some self-growing trees of kikar and wild grass.

Table 4: Vegetative Features of the Project Area

Sr.#	Local Name	Type	Biological Name
1	Kikar	*Throne Tree*	*Prosopis juliflora*
2	Wild Grasses	*Grass*	--

2.8 Cost and Magnitude of Operation

Following fixed and working capital requirements have been identified for operations of the proposed business. The activities will include:

- Land
- Building and Infrastructure
- Furniture and Fixture
- Office Equipment Health and Safety Management at site
- Transportation of raw-material and final product
- Plantation of trees

The cost for the proposed project would be 75 million PKR. Breakdown of cost is given in Table below. Environmental Budget: Approximately 0.1 million.

Table 5: Cost Breakup

S#	Kinds of Cost	Amount
2	Machinery Cost	60 million
3	Land Development, Infrastructure Cost	14.9 million
4	Environmental Budget	0.1 million
5	**Total Cost**	**75 million**

Table 6: Breakup of Environmental Budget

Environmental Budget: 1 million	
Operation	
Environmental Monitoring (Ambient Air, Noise)	50,000/-
Solid waste management	40,000/-
Wastewater management	50,000/-
Plantation/green belt development	60,000/-

LUBNA PERVIN (librarian) EPA librarian.epa@gmail.com 21/11/2026 2:53:40 PM

2.9 Schedule of implementation

The installation of machinery will install is about 6 month. There will be a symmetrical process. The process is divided in to 1 phases.

Operational phase

This phase includes:

- Implementation of fire safety, emergency evacuation plans
- Security management
- Finishing of amenities
- Availability for buying and rental purpose

2.10 Project Description

The basic purpose of this project is the installation of machinery, with a focus on manufacturing dyed fabric using cotton as the raw material. Cotton will first be converted into yarn through spinning, then woven into ecru fabric, and finally dyed in an environmentally and economically friendly manner.

2.10.1 Project's Operational Activities

2.10.1.1 Spinning Weaving & Dyeing Process

a) Raw material Availability:

The main raw materials is

- Harvested raw cotton from agriculture farms will be the raw material.
- Warp Yarn (lengthwise) and Weft Yarn (crosswise).
- ecru fabric (fabric that is undyed /raw) will be outsourced and the final product will be a dyed fabric

b) Production Process

c) Spinning Process:

The spinning process is where cotton fibers are transformed into yarn by stretching and twisting the fiber strands. This process involves multiple stages to create smooth, strong, and uniform yarn.

Steps in Spinning:

- **Blow Room:** After the bales are opened at the spinning mill, the cotton fibers are processed in the blow room to remove dirt and contaminants. This step breaks up clumps of cotton into smaller tufts for further processing.
- **Carding:** Carding is a crucial step that further disentangles and cleans the cotton fibers. The fibers pass through a machine with fine, needle-like wires that align them into a thin web, which is then condensed into a soft, rope-like strand called a carded sliver.
- **Combing (for fine yarns only)**

  Short fibers and leftover impurities are removed. Only long, fine fibers remain → makes stronger and smoother yarn.
- **Drawing**

  Several slivers are combined and drafted (stretched) to make them more uniform.
- **Roving**

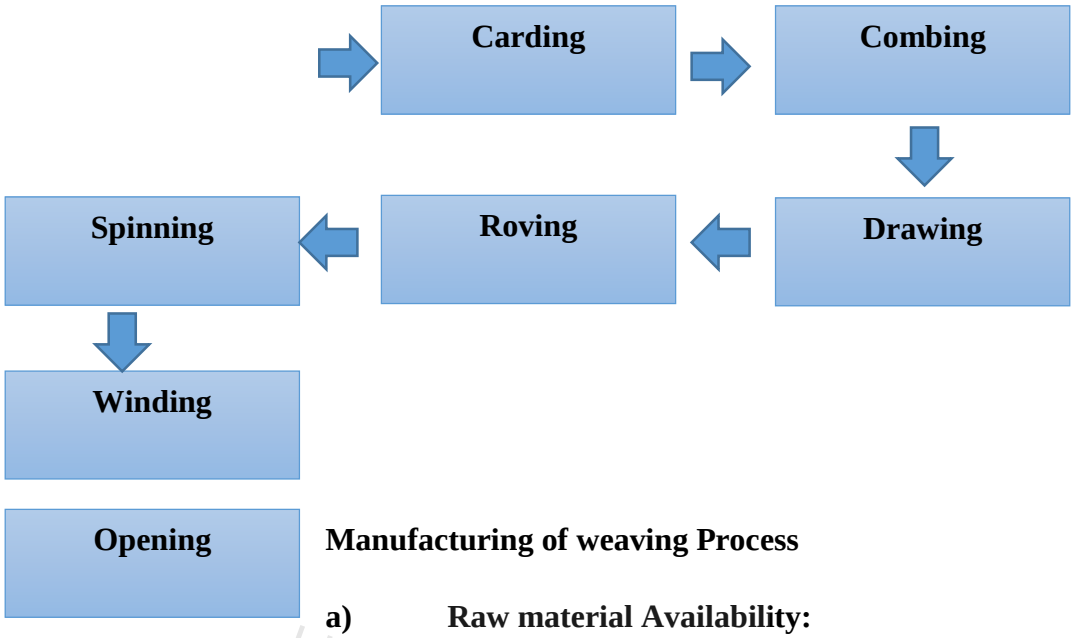
  The drawn sliver is slightly twisted into roving (a loose strand) to give it some strength before final spinning.
- **Spinning (Final Twist)**

  The roving is further drawn out, given the final twist, and wound onto bobbins/cones → forms yarn.

  (Methods: Ring spinning, Rotor spinning, Air-jet spinning, etc.)
- **Winding & Packaging**

The spun yarn is wound onto cones or spools, ready for weaving or knitting.

- **Process Flow of Cotton Yarn Production**



Manufacturing of weaving Process

a) Raw material Availability:

The raw materials required for the weaving unit are Warp Yarn (lengthwise) and Weft Yarn (crosswise). These yarns will be procured from local spinning mills or yarn suppliers in cone or beam form. Approximately 500 kg of yarn per month will be used in the manufacturing process. The yarn is typically transported via trucks and unloaded manually. An area of 2500 SFT will be designated as a raw material storage unit for temporarily storing yarn before it is processed.

b) Warping

In this stage, the warp yarns are wound onto a large beam in parallel alignment using a warping machine. This step is essential to prepare the yarns for the weaving process. Proper warping ensures that the yarns are evenly aligned, which directly affects fabric quality.

c) Sizing

For certain types of yarn (especially cotton), sizing may be applied. This involves coating the warp yarns with a protective film to reduce breakage during weaving. This process enhances yarn strength and elasticity. A sizing machine may be used, or pre-sized yarns may be purchased directly from the supplier.

d) Drawing-In / Denting

After warping, each warp yarn is drawn through the heddles and the reed of the loom. This process determines the fabric pattern and design. Drawing-in is a precise manual or semi-automatic process and is necessary to prepare the loom for continuous weaving

d) Weaving

Weaving involves interlacing warp and weft yarns at right angles to produce fabric. The process will be carried out on automatic power looms or shuttle-less looms, depending on the unit setup. The yarns are interwoven to form various fabric types such as plain, twill, or satin weaves. The woven fabric is wound onto cloth rolls at the end of the loom.

Each loom will be operated by skilled workers, with routine quality checks carried out during production to ensure defect-free fabric output.

e) Fabric Inspection and Storage

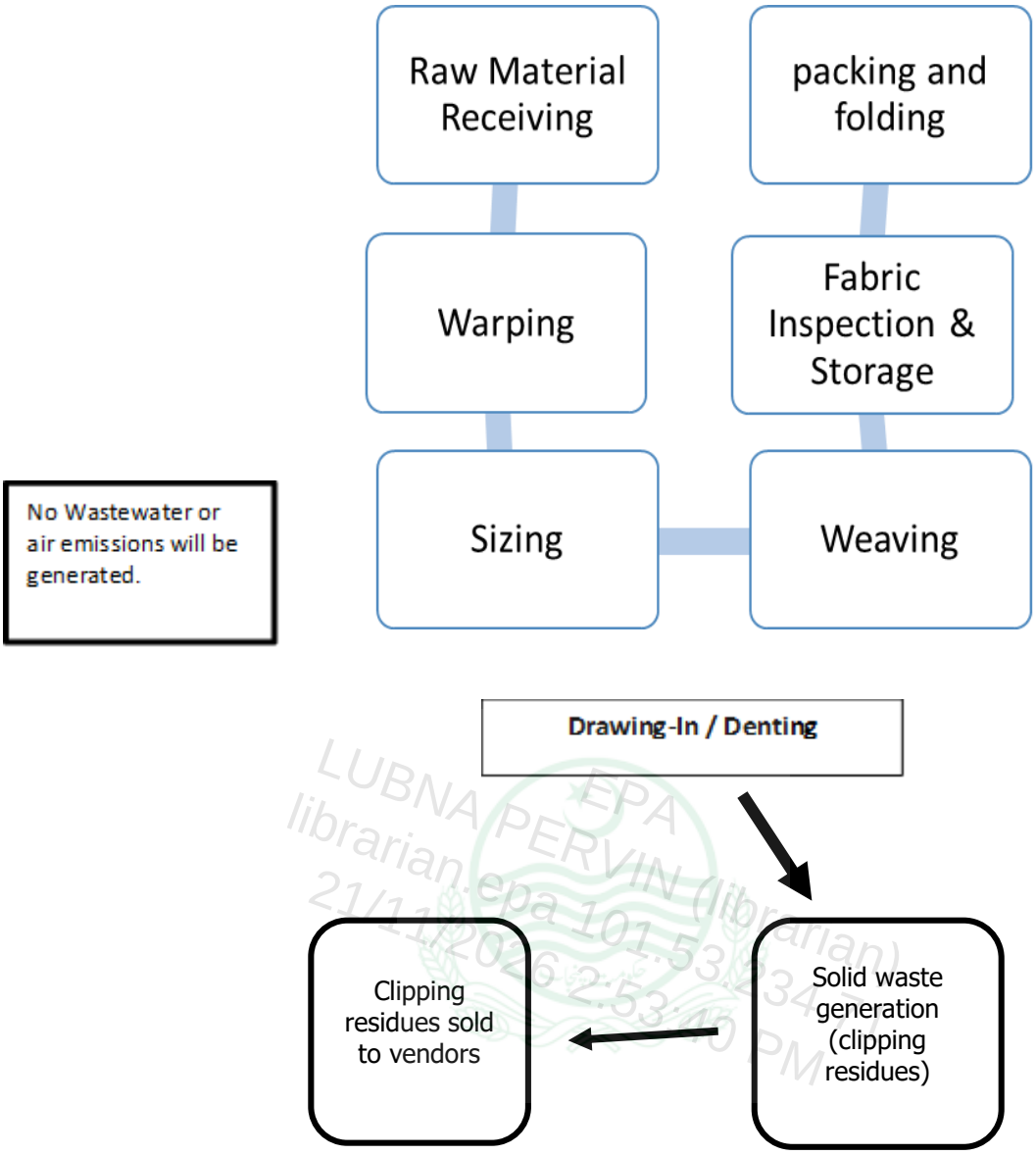
Once weaving is complete, the fabric rolls are inspected for any defects such as broken threads, stains, or weaving faults. Inspection is performed visually or using inspection machines. Accepted fabric is then neatly rolled, labeled, and moved to the finished goods storage area for dispatch to buyers or further processing units (like dyeing or printing).

f) Packing and Folding

At last, each greige (unfinished) woven fabric will be folded with tissue or cardboard. Folding varies from product to product and from buyer to buyer. Hang tags, special tags and price stickers will be attached with plastic Kimble or threads in this step. Folded and tagged garments will then be packed into poly bags. During packing, garments will be randomly checked by internal quality controllers to ensure that only quality goods are being packed.

LUBNA PERVIN (librarian)
librarian.epa 101.53.64.71
21/11/2026 3:53:49 P.M

Process Flow Weaving



LUBNA PERVIN (librarian) EPA librarian.epa 101.53234 21/11/2026 2:53:40 PM

Manufacturing of Dyeing Process

a) Raw material Availability:

The raw materials i.e., ecru fabric (fabric that is undyed /raw) will be outsourced and the final product will be a dyed fabric

Table 7 List of Chemicals and Dyes

SR.	CHEMICALS	DYES
1	ACETIC ACID	BAD ACTIVE BLACK CNN
2	CRYSTAL SALT/COMMON SALT	BAD ACTIVE NAVY GB
3	HYDROGEN	BAD ACTIVE YELLOW C4GL
4	POLY CREASE	COLVAZOL BLACK B 150 %
5	SODA ASH ICI	DISPERSE LEMON YELLOW
6	SULPHURIC ACID	COLVAZOL BLUE KNRXN
7	SODIUM HYDRO SULPHATE	DISPERSE ORANGE S4RL
8	FORMIC ACID	SYNOZOL RED HF GD
9	POLYESTER LECO	REMAZOL MID NIGHT BLACK RGBN
10	GLOBAL SALT/SODIUM SALT	REMZOLULTRA BLUE RGB
11	WET CROWING	REMZOL CORMICEN RGB
12	XYLENE	SYNOLON ROBINE SGFL

a) Dyeing

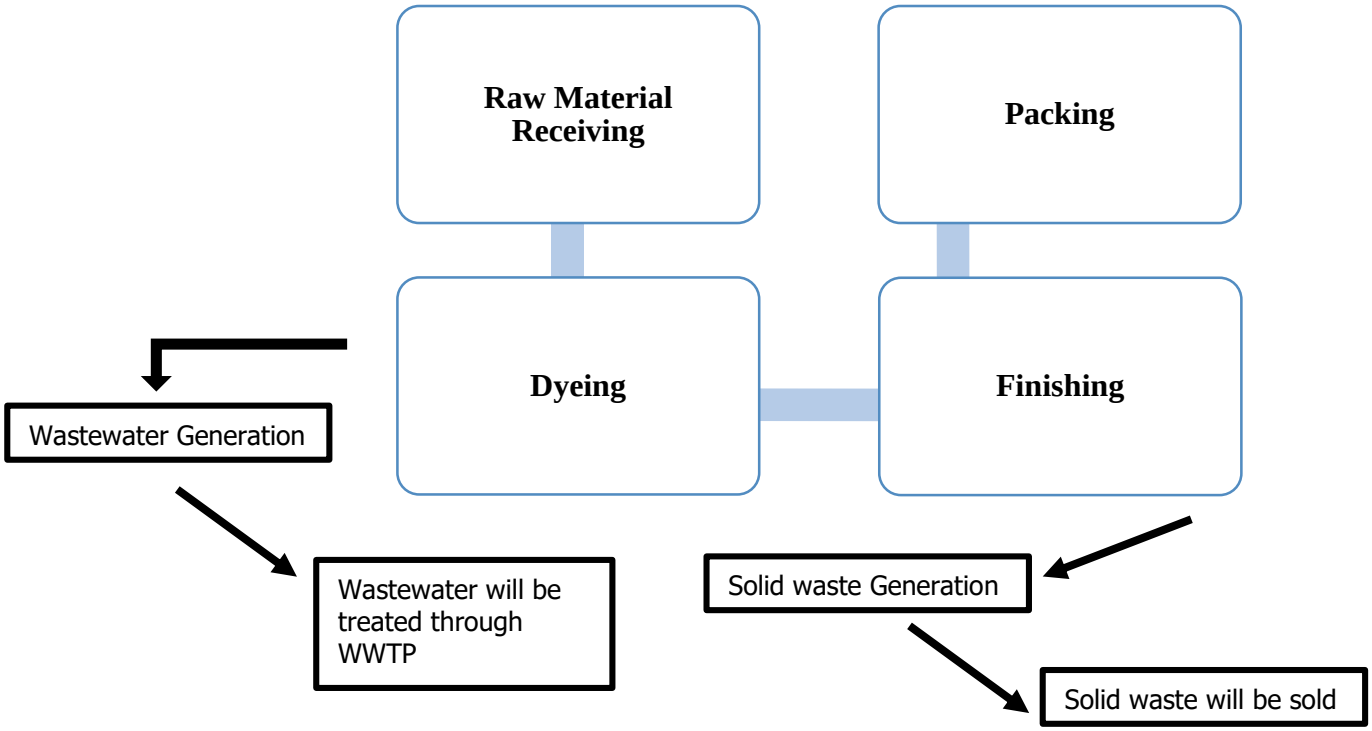
Dyeing is the process of adding Color to Fabric. It will be done by soaking the fabric in a liquid that contains a dyestuff.

b) Finishing

This process will include checking of the dyed fabrics by the quality checker to ensure that fabric have been dyed as per buyer quality standards.

LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM

2.10.2 Process flow



2.11 Amenities

The following social amenities are present at site and the management of the waste (solid waste and effluents) is explained in sub-sections below:

2.11.1 Electricity

During Operational phase, Electricity will be supplied by industrial estate which will be purchased from WAPDA (LESCO).

2.11.2 Ground Water Resource

Water required for drinking and domestic purpose and processing would be 6-7 m^3/day. To supply the anticipated demand during operations, and for firefighting purpose 2 overhead water tanks of 75000 gallons each (one reserved for firefighting) & 1 underground water tank (15000 gallons capacity) for personal and industrial use will be constructed.

2.11.3 Dry Scrubber deign and working principle

Dry scrubbers work similarly to other scrubbers. The system sprays a collection of dry reagents into an exhaust stream. These chemicals can react differently depending on which material they are specifically targeting for removal. Some of these materials neutralize harmful pollutants in the stream through a chemical reaction, while others cause a material to react and turn into a different substance. That substance then falls out of the gas stream or is caught in a particle screen.

Dry scrubbers remove acid gases, this is done by introducing a series of dry reactants to exhaust gas at high speeds. This neutralizes the pollutants in the gas. This task is done in three steps: gas cooling, reagent injection, and filtering. First, gas cooling will be done to prepare exhaust gases. In the gas cooling system, emission gases are cooled to make it easier to remove pollutants and other toxins from the gas. The exhaust gas is diluted using an evaporative cooler. Once the gas has been significantly cooled the reagent injection can begin. It is in this step that the harmful components are actually removed from the gas. Components of the dry reagent are generally chosen because of their neutralizing properties; thus, sodium bicarbonate is included for the said project scrubber. A variety of powders are mixed together and fired at high pressures into the exhaust gas. Chemical reactions occur that reduce the acidity of the gas and remove harmful pollutants. The final step is using a fabric filter to capture the used scrubbing powder as the cleaned gas exits the scrubbing chamber.

Dry scrubbing has been embraced widely, and one of the biggest advantages to using it is the positive environmental impact. The removal of hazardous substances from exhaust gas is important as it prevents a large number of pollutants from escaping into the air. Dry scrubbers are also more commonly used than wet scrubbers mainly because they produce comparatively little waste material. Most of this material that is sprayed into the exhaust is burned off in the heat of the stream or is caught in a filter. The use of dry scrubbers is less expensive as there is no associated cost with removing, transporting, and storing waste water from wet scrubbers.

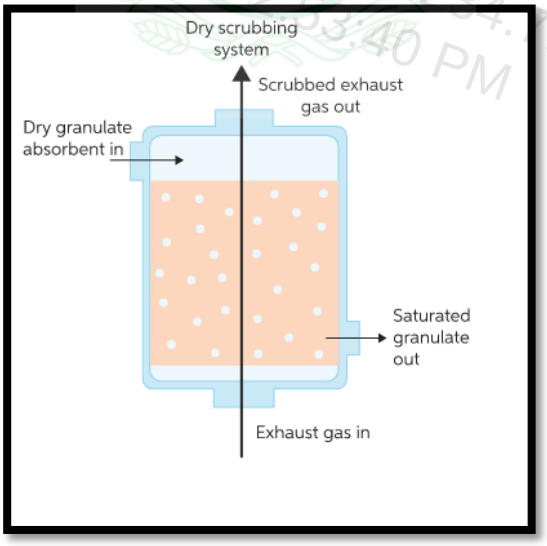


Figure 4: Design of Dry Scrubber

Wastewater Management and Disposal

The wastewater generated from the operation of proposed project would be of two types one is from process activities and second will be municipal in nature. For treatment of wastewater

generated by the process activities a Wastewater Treatment Plant (WWTP) will be installed whose capacity will be 60m^3/hour while the chemical used for treatment will be alum and Polyelectrolyte, complete design and specification of Wastewater are attached as Annexure of this EIA Report. Municipal wastewater will be treated through septic tanks. This involves the concrete-made tanks (septic tanks) to store the sludge. The wastewater from the septic tanks is then channeled to main sewer. Given the size and magnitude of the project, this is a viable option to treat wastewater. The detailed design of septic is given in layout plan attached as Annexure.

Waste Management

Most of the solid wastes that will be generated during the daily work can be divided into 3 main categories:

i. The ordinary household wastes that the workers and the staff generate all-day around, e.g., kitchen and food residues, papers je sort, personal unneeded articles, etc.
ii. Municipal residues, e.g., cardboard, strings, scraps, sort, etc.
iii. While during operational phase household waste and processing waste (cuttings of fabrics) will be generated.

An integrated solid waste management system is recommendable. First, the proponent will give priority to Reduction at Source of the materials. Recycling and reuse will be the second alternative in priority. The recyclable waste includes cuttings of fabrics that will be sold to authorized waste buyers (furniture manufacturing vendors). It will be used in fillings of sofas and cushions etc. The waste that is not recyclable will be sent to designate sanitary landfilling.

2.13 Staff/Manpower

The staff for operational phase will be hired with respect to concern department according to their qualification and almost 100-150 persons will be required.

2.14 Emergency Preparedness

Emergency response preparedness committee will be formulated consisted of heads of all departments and nominated members. Project Manager will be the head of the team who will chair the Committee. In the case of emergency, he will immediately inform the concerned authorities. HSE Manager will be responsible for on-site HSE management.

First aid facilities will be available at facility which will include blankets, hot water bottles, sterilized dressing, snake bite kit, cotton, and iodine (2% alcohol).

2.14.1 Safety Trainings

Skilled, semi-skilled and un-skilled staff will be provided with proper training about the work and safety practices that need to adopt during the process activities.

2.14.2 Use of Drugs and Narcotics

Drugs and narcotics are strictly prohibited during working hours in working area. Smoking will be only allowed during rest timings at properly isolated places.

2.14.3 Personal Protective Equipment

Following Personal Protective Equipment (PPEs) will be provided to the workers:

- ➔ Safety Helmet
- ➔ Safety Shoes/Dry Shoes
- ➔ Dust Mask
- ➔ Safety Gloves
- ➔ Safety Jackets
- ➔ Earmuffs
- ➔ Insulating Gloves and Suits

2.14.4 Emergency Response Plan

Emergency response will be determined in corresponding instructions.

- There would be an evacuation plan, technical means/equipment necessary for handling small-scale emergency situations, protective and communication means (phone, fax machine) for personnel to protect themselves and call for corresponding emergency services (fire-fighting squad, ambulance).
- Every accident will be registered, and its causes will be investigated. If necessary, remediation will also be ensured.

2.14.5 Fire Management

The Management shall ensure that:

- The Fire Safety Management needs are considered for all areas.
- Hydrants and fire extinguisher will be available at site.
- Layout plan will be displayed at the site.
- Fire exit will be readily accessible which would not be used otherwise.
- Necessary emergency lighting system along with emergency power back up system shall be provided. In addition, emergency public address system arrangement and signage for emergency exit route shall be provided.

- Necessary auto glow signage at all appropriate places shall be provided to guide the people towards exits and assembly points during the unforeseen emergency and untoward conditions.
- Training to the staff for the first aid and firefighting along with regular mock drill shall be made.

2. 15 List of Machinery

Details of machinery that will be used in the proposed project is described in a list.

Sr.	List of Machinery	Quantity	Fuel
1	Fong 2004	3	Electricity
2	Boiler	2	Oil heated/ Steam heated
3	Open Jiggers 95”	3 Nos	
4	Pressure Jiggers 96”	2 Nos	
5	Fabric Rolling Machine	1 Nos	
6	Fabric Folding Machine	1 Nos	
7	Bale Pressing Machine	1 Nos	

2.16 Relocation and Rehabilitation Plan

There exists no human settlement of the selected project site to be displaced owing to the commencement of the proposed project. Moreover, no structure of any significance stands at the site is proposed to be relocated or dismantled. The project area is allotted to the proponent. The allotment letter is attached with the EIA report so, no restoration and rehabilitation are required.

2.17 Land ownership Documents

Land ownership documents have been attached as Annexure of this EIA Report along with the form-29, which clearly shows that the selected area for the installation of machinery of M/S Pak Solo Dyeing has been allotted to the proponent.

2.18 Government Approvals

They have applied for environmental approval from EPA Punjab.

CHAPTER 3: 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 baseline data. The underlying principles and practices adopted in this regard are also discussed.

3.1 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:

3.1.1 Data Collection

The primary data was collected by visiting the project area and its communities in its nearby vicinity. 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 species (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 socioeconomic aspects were studied and analyzed by studying detailed village profile and by conducting household surveys.

3.1.2 Social Survey

The purpose of social survey was to record the present condition of the people living in the project area and to assess the expected project impacts on their life, subsistence systems and socio-cultural conditions. Prior to conducting the field surveys, the following steps were taken:

- Clear boundaries of the project area were identified
- Decided the sampling procedure in order to draw a representative sample size of the target population and households
- Developed the tools for data collection i.e. questionnaires to access the socio-economic status of the area

3.1.3 Sampling Design

Social baseline data of the persons residing in the study area has been estimated and collected through random sampling by using pre-developed questionnaires.

3.1.4 Questionnaires

In order to test the validity and reliability of the proposed questionnaires, they were reviewed to assess whether questions needed to be clarified, changed or re-sequenced and then a final editing of questionnaires was conducted prior to their application in the project area. The sample of socio-economic questionnaires used is attached as Annexure.

3.1.5 Data Editing and Analysis

The filled questionnaires and recorded information were compiled by the same field investigators who were involved in the data collection. This was done immediately after completing the field investigations. Data sets were processed. Analysis of the data and preparation of conclusions in the minimum possible time was done using statistical techniques of data analysis.

3.2 Review of Legal and Administrative Framework

The objective of reviewing legal and administrative framework is to obtain information on all legislation pertaining project development. The Socio-Environment Team of EnvironTech Consultants (PVT) Ltd. reviewed the environmental policies, national, international and provincial laws and guidelines relevant to the development of project which helped in systematic identification of impacts.

3.3 Baseline Conditions

This chapter provides baseline data (physical, biological and socio-economic parameters) related to the project and study area

3.4 Physical Environment

Pakistan Can be divided into five broad physiographical regions. These are the mountainous regions of the north, the western highlands and plateaus, the sub-mountains Indus region, the Potohar Plateau, Salt Range, and the Indus Plain. Brief description of these regions is given below:

Region	Characteristics	Location	Height
Northern Mountainous	Hindu Kush Karakoram and Himalayan Mountain Ranges	Northern Part of KPK, Gilgit Agency, Northern Areas and Kashmir.	Rises above 8,000m
Western Highlands and Plateaus	Toba Kakar, Sulaiman, Central Baruhi, Saihan, Central Makran, Makran Coastal and Kirthar Ranges	Mainly in Baluchistan, also parts of Sindh and KPK	Between 1,200 to 3,000 m

Sub-Mountains Indus	Alluvial filled Basins	Plains of Peshawar Kohat and Bannu	Less than 1,000 m
Potohar Plateau and Salt Range	Flat to gently undulating surface, broken by gullies,	Mainly northern parts of Punjab, some parts of KPK	Less than 1,000 m
Indus Plain	Flood plains of the Indus, Jhelum, Chenab Ravi and Sutlej Rivers	Punjab and Sindh	Less than 1,000 m

3.4.1 Topography

Sheikhupura the city of Punjab province, eastern Pakistan. In the town center stands a fort of the Mughal emperor Jahangir (completed 1619) that also served as the 19th-century residence of one of Ranjit Singh's queens; outside the city, the massive Hiran Minar tower overlooks the countryside. Sheikhupura is connected by road and rail with Lahore (25 miles [40 km] southeast) and various other cities. It is an industrial center that makes food products and textiles. The city is in a section of alluvial plain known as the Bar tract, which is irrigated by the Chenab Canal system.

Sheikhupura is an industrial city in the northwest of Punjab province, Pakistan. The city is also the administrative headquarter of the Sheikhupura district and is approximately 38 km from Punjab's provincial capital, Lahore. The town is famous for its historical monuments and also known as the city of Mughals, where emperors come for hunting. The city is also well-known for its booming industry. District Sheikhupura is bounded on the North by Gujranwala and Hafizabad districts, on the North-East by Narowal district, on the West and South-West by Nankana Sahib District, on the East by Lahore district.

Project Site:

The proposed project site is located in District Sheikhupura.

3.4.2 Hydrology

Groundwater from depth of 100 ft can be used for drinking and other purpose. Groundwater is the major source of water in the study area, which is extracted with the help of pumps and motors. The groundwater extracted is used to fulfill various domestic, irrigation and industrial needs. Ground water quality report of area is annexed. No surface water body is present within 5 km radius of the project site.

3.4.3 Seismicity

According to Seismic Zoning of Pakistan, the project area lies in Zone 2A and represents minor to moderate damage due to earthquakes.

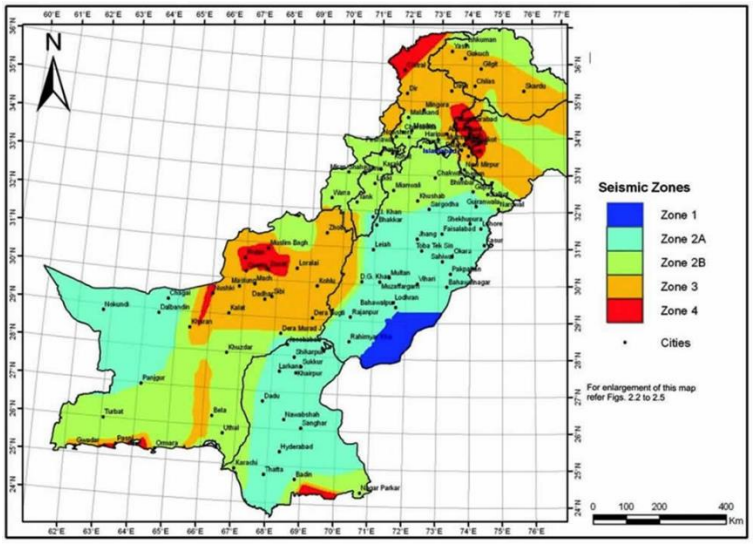


Figure 5: Seismic Zoning Map of Pakistan

3.4.4 Climate

Due to its high evaporation rate, Sheikhupura features hot desert-like climatic conditions according to Koppen-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).

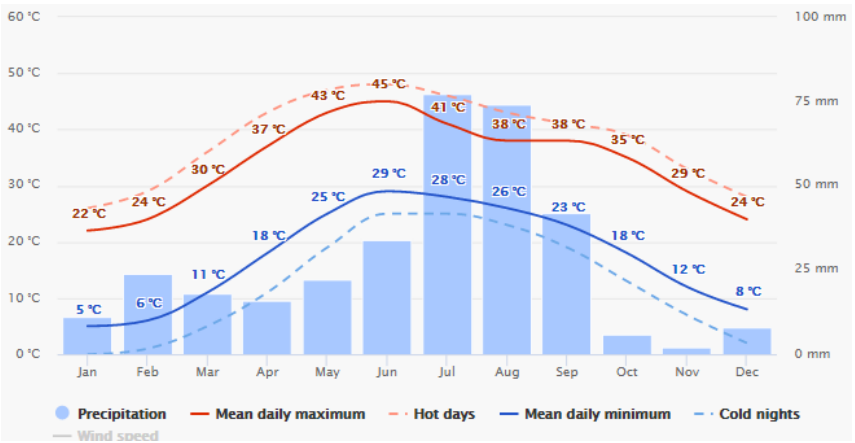


Figure 6: Average Annual Temperatures and precipitation in Sheikhupura

The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month for Sheikhupura. Likewise, "mean daily minimum" (solid blue line) shows

the average minimum temperature. Weather in Sheikhupura is influenced by Subtropical Dry Semiarid Steppe climate. Low-latitude dry climate. Evaporation exceeds precipitation on average but is less than potential evaporation.

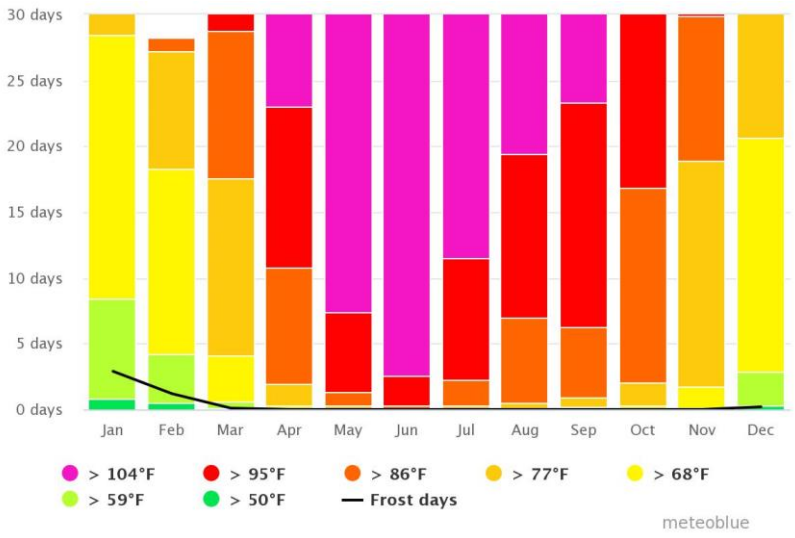


Figure 7: Maximum temperature ranges in Sheikhupura

The graph shows the monthly number of sunny, partly cloudy, overcast and precipitation days. Days with less than 20% cloud cover are considered as sunny, with 20-80% cloud cover as partly cloudy and with more than 80% as overcast.



Figure 8: Annual Precipitation amounts in Sheikhupura

3.4.5 Wind

The diagram for Sheikhupura shows the Max and Average Wind speed and Wind Gust.

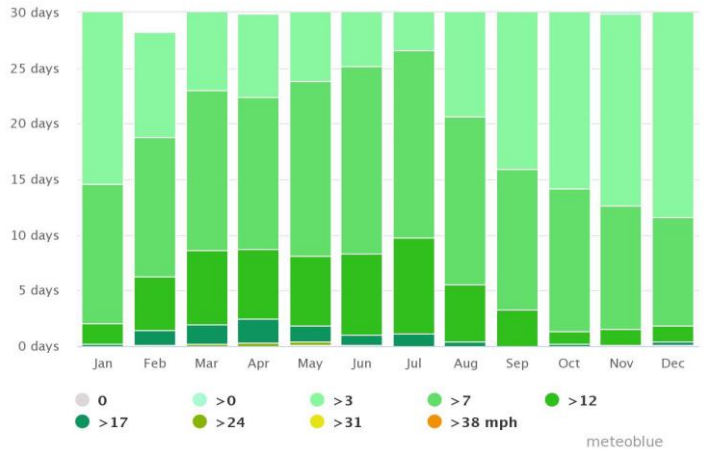


Figure 9: Annual average wind speed in Sheikhupura

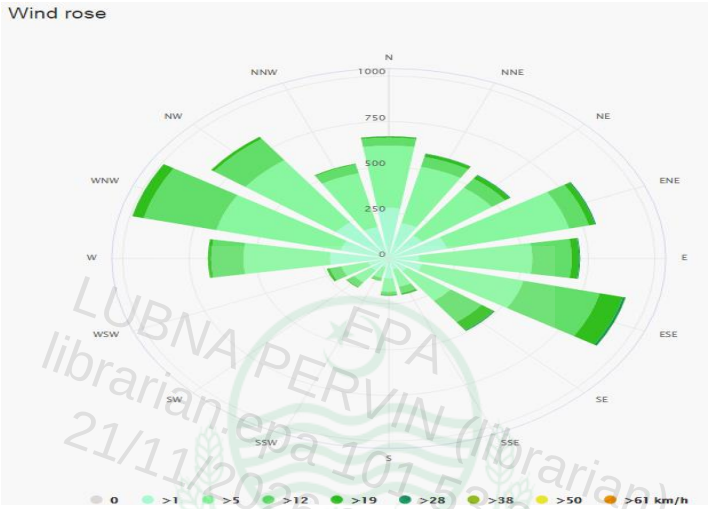


Figure 10: Wind Rose diagram of Sheikhupura

The wind rose for Sheikhupura shows how many hours per year the wind blows from the indicated direction. Example SW: Wind is blowing from South-West (SW) to North-East (NE).

3.5 Ecological Environment

Sheikhupura is enriched with the presence of natural flora and fauna, although with the growing population and development activities, the presence of some has been somewhat affected. They are discussed in detail below.

3.5.1 Aquatic Flora & Fauna

No aquatic ecosystem (i.e. canal, stream, river or pond) observed within or around the study area, which omits the possibility of any kind of aquatic species that may be harmed due to the establishment of proposed project.

3.5.2 Flora

The project is located in industrial area. The project site has no vegetative cover, hence, no trees or vegetation will be removed. The dominant tree species in study area include; Eucalyptus, Neem, and Kikar. The crops present around project site include wheat, sugarcane

and common grass. The nomenclature including common, English, local and botanical names of the flora found in the study area are presented in Table

Table 8: Flora of the Study Site

S#	Common Name	Scientific Name
1	Neem	*Azadirachta indica*
2	Kikar	*Vachellia nilotica*
3	Safeda	*Eucalyptus globulus*

3.8.3 Fauna

For study of fauna in the project area, field guides and books were consulted. On the other hand field observations were conducted along with the interviews of local community members about the fauna of the area. The equipment used in field included cameras, binoculars and GPS device (wherever required). It is important to note that there is a number of factors which can change the findings of such survey. It may be pointed out that the pattern of seasonal migration of small birds varies depending upon each specie. During the construction activity in project area, no important biological feature will be damaged or disturbed as the project falls in industrial area.

The fauna commonly found in District Sheikhupura includes; Hares, Falcon, Eagle, Quail, Starling, Jungle Pigeon, Russian Sparrow, Doves, King Fisher, Parrot, Crow and Local Sparrow.

Commonly found mammals in the area include; dogs, cats, horses, house-rats, squirrels, porcupines and bats. However, Small Indian Mongoose and Indian Palm Squirrel are also found in the District Sheikhupura.

Table 9: Mammals in Study Area

S#	Common Name	Scientific Name
1	Rat	*Rattus*
2	Bat	*Chiroptera*
3	Small Indian Mongoose	*Herpestes javanicus*
4	Indian Palm Squirrel	*Funambulus palmarum*
5	Porcupines	*Erethizon dorsatum*
6	Squirrels	*Sciuridae*

The commonly found bird's species include; House Sparrow, Crow and some of them are mentioned below with scientific names.

In District Sheikhupura reptiles such as Snakes (Cobra and Kraits), Spiny Tailed Lizard and Fringed Toed Lizard are common in the tract, but cases of snake bites are very rare, as these reptiles have been either killed by expanding urbanization or they have moved away.

Table 10: Birds in Study Area

S#	Common Name	Scientific Name
1	House Sparrow	*Passer domesticus*
2	House Crow	*Corvus splenders*
3	Pigeon	*Columbidae*
4	Bulbul	*Pycno notidae*
5	Teetar	*Francolinus francolinus*
6	Parrot	*Psittaci forms*
7	Titodi	*Vanellus indicus*

Table 11: Reptiles in the Study Area

S#	Common Name	Scientific Name
1	Snake	*Serpentes*
2	Spiny Tailed Lizard	*Uromastix hardwickii*
3	Fingered Toed Lizard	*Acanthodactylus cantoris*
4	Earthworm	*Lumbricina*

The amphibians commonly seen around the project area, especially during the rainy season includes;

Table 12: Amphibians in the Study Area

S#	Common Name	Scientific Name
1	Common Frog	*Rana temporaria*
2	Indus Valley Toad	*Bufo stomaticus*

A large number of insects are present due to open fields in the project site. Few of these insects are known to cause diseases in local population. Following is a list of commonly observed insects at the site:

Table 13: Insects in Study Area

S#	Common Name	Scientific Name
1	Black Ants	*Paratracheaiognicornis*
2	Dragon Fly	*Dragon Fly*
3	House Flies	*Musca domestica*

4	Butter Flies	*Parnassiusbalucha*
5	Honey Bees	*Apismellifera*
6	Wasps	*Anagyrus pseudococci*
7	Grasshopper	*Melanoplus differentialis*
8	Mosquito	*Anophlese sp.*

No endangered species are found at the site. The area has not been identified as ecologically sensitive area by wildlife department.

3.8.4 Water Resource

The main source of the water consumption is the ground water which is being pumped from 200 ft borehole and its being used in the study area for domestic purposes. To check the quality of the water in the area, ground water was collected and analyzed. The ground water was collected from bore hole adjacent to the project area.

3.9 Socio-Economic Resources

This section provides collective information about the existing socio-economic and environmental condition of the project area within the AOI. The different types of socio-economic aspects were covered such as demographic profile, occupation, education and health facilities. This data helped in identifying major interventions for the development of Environmental Management and Monitoring Plan (EMMP). The study also helped to assess the positive or adverse impacts on local community.

3.10 Socio-Economic Profile of Study Area

This topic provides an overview of the baseline information relating to the socio-economic environment of the project area and the AOI. The socio-economic study gives information about the demographic profile, occupation, education and health facilities in the project area.

3.11 Demographic Profile

The Demographic Studies are the major source of any city's Socio-Economic profile. Demographic Studies relate to population. Population studies are extremely important from Town Planning point of view. Until and unless we know about population in detail, we cannot do successful planning. All aspects of population, such as sex-age composition, trend of migration, social, cultural, political, economic and administrative works, values and facilities have to be related to planning considerations and decisions. Individuals are the raw material of society; therefore, society is directly affected by size, growth, composition and distribution of

its individuals. The term population refers to the number of individuals living within a geographical area at a given time.

Different community individuals in the vicinity of the project area have different family sizes depending upon their living setups. Average family size is however 5-7 individuals per family with 1-2 earning hands per family.

3.11.1 Health Facilities

As the project site is in an Industrial zone. DHQ Hospital Faisalabad is located at the distance of approx. 16 Km radius. Some other private health center is present as Villages area present in the vicinity of the project site.

3.11.2 Educational Facilities

As the project site is not located in any residential area. However, the villages located around project site have few governments primary schools.

3.11.3 Cultural, Religious & Other Structures

No cultural, religious and other structures are present in the close proximity of the project area that needs to be relocated. Villages present around the project site have mosques and imam bargah.

3.12 Lab Reports of Environmental Analysis

Testing of different parameters was done from a certified laboratory named SEAL to check the quality of different environmental parameters. The copy of the lab reports of these parameters (ambient air analysis, water quality analysis and noise) is attached at Annexure of this IEE Report.

3.13 Suitability of Site:

Comprising all assessment of above baseline data there will be no significant ecological/ environmental impact expected in and around the present selected project site, hence it is suitable for the proposed project.

LUBNA PERVIN (librarian)
EPA
librarian.epa 101 [illegible]234.71
21/11/2016 2:53:46 PM

CHAPTER 4: IMPACT ASSESSMENT MITIGATION

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

4.1 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 which may cause adverse impacts.
- 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 impact's assessment methodology for the installation of machinery of Dyeing Unit located in Multan has been defined. It includes the magnitude, the extent of the impact and the nature of the anticipated impact.

4.2 Methodology

This Section discusses the project's potential environmental impact of installation of machinery on the area's geomorphology, soil, water resources, air resource, biological resources, and socioeconomic condition and, where applicable, identifies mitigation measures that will reduce, if not eliminate, its adverse impact. The assessment carried out in the sub-sections below is based on potential impacts on overall environmental receptors within the project area. Impacts are evaluated based on magnitude, immediacy and sustainability. Evaluation criteria are as follows:

4.2.1 Magnitude

The magnitude of the impacts associated with the installation of machinery of the M/S Pak Solo Dyeing, include the type of impact project commencement will cause to its immediate environment and social structure. It could be direct, indirect, and cumulative.

LUBNA PERVIN (librarian) EPA librarian epa 101.53.234.71 21/11/2026 3:53:40 PM

4.2.2 Immediacy

Immediacy of the impact focus on the following parameters:

- Temporal Extent (during operation)
- Spatial Extent (local or widespread)

4.2.3 Sustainability and Reversibility

Sustainability and reversibility of the impact focused on the following parameters:

- Mitigability (Fully/Partially)
- Monitoring (Fully/Partially)

4.3 Purpose of Mitigation Measure

The basic purpose of mitigation measures is to reduce the impacts of the installation of machinery of M/S Pak Solo Dyeing on the socio-environment up to the maximum possible extent. The mitigation measures are suggested based on the following parameters:

4.3.1 What is the problem?

The proposed project is the installation of machinery M/S Pak Solo Dyeing. The study area is leveled and industrial land. In addition, to the noise and fugitive dust emissions during the development phase solid waste also requires proper management. The major impact associated with the operation of building includes wastewater and the management of the solid waste.

4.3.2 When problem will occur and when it should be addressed?

The impacts from the installation of machinery for spinning, weaving & dyeing unit of M/S Pak Solo Dyeing will occur during the operation. These issues include noise generation, fugitive dust emissions, solid waste management, wastewater disposal, top-soil removal, Health and Safety issues and change in the geographic features of the area. These all problems should be addressed on-site where they are being generated, to avoid the residual or adverse impacts.

4.3.3 Where problem should be addressed?

The problem will be generated from site development and operation of the unit. So, it should be addressed on source i.e., at site within the same timeframe.

4.3.4 How the problem should be addressed?

Proper mitigations measures will be provided according to the nature of the impacts/problems.

4.3.5 Ways of Achieving Mitigation Measures?

Following ways will be adopted to reduce the impacts of the manufacturing unit:

4.3.6 Changing in Planning Design

There is no endangered and threatened species present in the project area. Moreover, there is not any human settlement or infra-structure that will be dislocated or dismantled due to the proposed project development. Hence, there is no need to change the design of project.

4.4 Improved Management and Monitoring Practices

The anticipated impacts had been reduced significantly by adopting better management activities, as it will be carried out for betterment of the society. While environmental monitoring will be conducted on the regular basis to keep the sources of the air pollution, wastewater generation, noise, and public nuisances in-check. Following practices that need to be adopted to reduce the impact significantly:

a. Compensation in Money Terms

Due to the installation of proposed project, the vegetation present on-site will be removed and the geography/landscape of the area will be changed on the permanent basis, however, there is no protected or environmentally sensitive area present within 10.0 km vicinity of the project that could be impacted. Hence, no compensation in the monetary terms will be required. However, for the removal of the one tree from the project area 3-5 trees will be planted as the compensation.

b. Replacement/Relocation/Rehabilitation

The proposed project site is located in industrial area reserved for the installation of machinery aforesaid unit. No replacement, relocation and rehabilitation will be required for the commencement of the aforesaid project.

4.5 Impacts Associated with Project Location

The proponent has selected the site owing to the following reasons:

- There is no community or human settlement present on-site or in the project proximity that could be impacted due to the commencement of the proposed project.
- There is no fauna or flora belonging to an endangered species present on-site.
- The site has accessible through road network i.e., connected to the main road via access roads.
- There are no ecologically sensitive or declared protected areas like; Reserved Forest, Fish Hatcheries, Wildlife or Game Reserves. Moreover, there is no socio-cultural significant structure (historical or archaeological site or religious structures; Masjid, temples, etc.) located within 5 km of the selected site that could be impacted.

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

4.6 Impact Assessment Methodology

The impact assessment methodology for the installation of machinery of M/S Pak Solo Dyeing is given below:

4.6.1 Screening of Potential Impacts

Based on site visit, observation, brain storming, provided information and social interviews, significant impacts were anticipated and evaluated. Then qualitative and quantitative (where possible) assessment of these anticipated impacts is to be carried out.

4.6.2 Identification of Mitigation Measures

After anticipation and screening of significant impacts, certain mitigation measures are to be provided in order to enhance benefits of project and reducing impacts. These measures can be classified as:

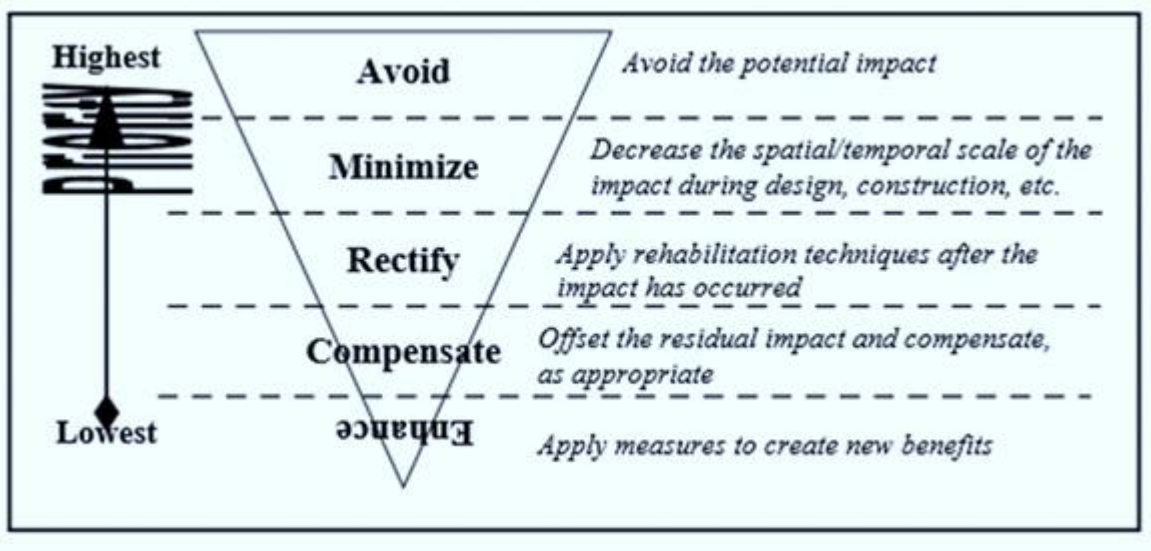


Figure 11: Hierarchy of Mitigations

4.6.3 Evaluation of the Residual Impacts

Incorporation of suggested mitigation measures may reduce the magnitude of the environmental impacts of the 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.

4.6.4 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 the monitoring is to confirm that the impact is within the prescribed limits and to provide timely information if acceptable limits are being breached.

CHAPTER 5: SCREENING OF IMPACTS AND THEIR MITIGATION MEASURE

This Chapter identifies the potential impacts (positive and adverse) on the physical, biological and socio-economic environment of project area due to the installation of machinery of M/S Pak Solo Dyeing. It also identifies measures that will help to mitigate the adverse environmental impacts and will enhance positive impacts of the project. Impacts are assessed by analyzing their magnitude and sensitivity, which is a legal requirement.

5.1 Impact Evaluation

Impact screening checklist and project impact evaluation matrix have been developed to evaluate the potential impacts of the installation of machinery of M/S Pak Solo Dyeing on the basis of set procedures as given in the environmental guidelines by Punjab EPA.

5.1.1 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:

1. An Impact Screening Checklist
2. Project Impact Evaluation Matrix

LUBNA PERVIN (librarian) EPA library.epa 101.03234.71 21/11/2026 2:53:40 PM

Following is given a brief description of assessment tools:

a) Impact Screening Checklist

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

Table 14: Impact Screening Checklist

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 Opportunity	◙		◙		◙			◙		◙		◙	
2	Availability of Raw-Material	◙		◙		◙			◙		◙		◙	
3	Appreciation in Land Value	◙			◙	◙			◙			◙		◙
4	Energy Availability	◙		◙		◙			◙		◙		◙	

LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM
EPA

Adverse Impacts														
1	Air Pollution		●	●			●		●			●	●	
2	Wastewater		●	●		●			●			●		●
3	Solid Waste and By-Products	●		●		●			●		●			●
4	Health and Safety		●		●		●		●			●	●	
5	Chemical Hazards		●	●		●			●		●		●	
6	Physical Hazards		●	●			●		●			●		●
7	Security Risks		●		●		●		●		●		●	

LUBNA PERVIN (librarian)
EPA
librarian.epa 101 53.234 71
21/11/2026 2:53:40 PM

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 and socio-economic environment. For the impact assessment risk assessment methodology was used. Moreover, the risk assessment was done on the basis of project phases (planning & designing, and operation). A Project Impact Evaluation Matrix is attached as Table below:

Table 15: Impact Evaluation Matrix

Environmental Parameters	Impact Assessment during operational Phase
A: Physical	
Land Resources	
Soil Erosion and Contamination	0
Transportation	-1t
Solid Waste and By-Products	-1p
Land Use	NA
Air Resources	
Noise Pollution	-1t
Air Pollution	-1p
Dust Emissions	-1t
Water Resources	
Ground Water	-1p
Surface Water	NA
Wastewater	-2p
B : Ecological	
Flora	
Tree Cutting	+1p
Fauna	
Terrestrial Fauna	+1p
C: Socio-Economic	
Employment Opportunities	+3p
Land Value Appreciation	+2t
Availability of Local Raw-Material	+2p

LUBNA PERVIN (librarian)
EPA librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM

Economic Uplift	+3p
D: Hazards	
Physical Hazards	-1p
Chemical Hazards	-1p
Health and Safety	-1p
Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable; t= Temporary; p= Permanent; app= Applicable; 0= Negligible	

5.2 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 the project, mitigation plan for all the adverse impacts should be predicted to find out the best alternative. The objectives of mitigation are to:

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

In this part of the EIA Report, several 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.

5.2.1 Approaches for Mitigation Measures

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

Table 16: Approaches for Mitigation Measures

Avoid: Change of route or site details, to avoid damage
Replace: Regenerate similar habitat of equivalent ecological value in different location
Reduce: Filters, precipitators, 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.

5.3 Expected Positive Impacts

Following are the expected outcomes of the installation of machinery of the M/S Pak Solo Dyeing:

5.3.1 Efficient and Economic Residential Availability

In addition to all these benefits, the project will result in the general economic and social uplift in the areas of the Lahore.

5.4 Adverse Impacts and Mitigation Measures

This section identifies the potentially significant and insignificant adverse environmental and social impacts anticipated during the operation phase for the installation of machinery of M/S Pak Solo Dyeing. Appropriate mitigation and management measures, where applicable, have also been suggested to reduce the severity of the anticipated impact up to the extent possible.

5.5 Impacts Due to Project Location

The development will have both socio-economic and environmental implications as discussed in the sub-sections below.

LUBNA PERVIN (librarian) EPA librarian.epa 101.53.234.71 21/11/2026 2:53:40 PM

5.5.1 Relocation of People

Currently, there are no infringements on the project site that may be affected therefore relocation exercises are not required.

5.5.2 Loss of Vegetation

Considering the scale of the project and commonly found flora and fauna within the project influence area, no significant adverse effects are envisaged on the ecology of the area.

5.5.3 Shifting of Utilities.

There will not be any shifting of existing utilities such as water supply pipelines, sewers, electrical lines, etc. due to the proposed project.

5.5.4 Impact on Archaeological/Cultural Property

Within the project influence area there are no significant archaeological properties, hence no impact in this area is anticipated.

5.6 Impacts Due to Project Design

The Building is already constructed

5.8 Impacts Due to Project Operation

During the operation phase, there will be impacts on the air, water, and land environment, as well as on socio-economic aspects. The following sub-sections present the impacts due to the operation of the proposed project.

5.8.1 Air Environment

During operational phase, air environment may be affected by:

Generator emission: NO_x and SO_x will be generated. The level of Sulphur Oxides (SO_X) depends on the percentage Sulphur in the oil being used in the generator.

Vehicular emissions: Carbon Monoxide (CO) is the major pollutant emitted by motor vehicle exhaust systems. This is highest when vehicles are poorly maintained, causing incomplete combustion to take place.

Mitigation Measures

- To control air pollutants to intact with environment dry scrubber will be installed.
- Proper maintenance and tuning of vehicles will be ensured to reduce emissions.
- Internal roads will be maintained properly to reduce fugitive dust and for the smooth movement of vehicles.
- Adequate greenbelt will be developed and maintained.
- High quality fuel having low sulfur contents will be used.

LUBNA PERVIN (librarian)
EPA
librarian.epa 101.53.634.71
21/11/2026 2:53:40 PM

5.8.2 Noise

During operational phase, issue of noise is envisaged related to project activities.

Mitigation Measures

- All operations will be carried out inside the premises.
- Proper PPE's will be provided to all workers and their use will be made mandatory.

5.8.3 Water Environment

Water will be required for various purposes at proposed project like for drinking and domestic use and floor cleaning and washing. During operation of unit process as well as domestic wastewater will be generated.

Mitigation Measures

- Installation of WWTP for process wastewater.

- Domestic wastewater generated will be treated in septic tank and then discharged to main industrial drain.
- 3rd party monitoring will be carried out on quarterly basis.

5.8.4 Solid Waste

It is expected that certain quantum of solid waste, domestic in nature will be generated during the operation stage. An integrated solid waste management system is recommendable. First, the proponent will give priority to Reduction at Source of the materials. Recycling and reuse will be the second alternative in priority. The recyclable waste includes cuttings of fabrics that will be sold to authorized waste buyers (furniture manufacturing vendors). It will be used in fillings of sofas and cushions etc. The waste that is not recyclable will be sent to designate sanitary landfilling.

Mitigation Measures

- For the collection of solid waste, receptacles will be provided at each floor and arrangements will be made to manage waste properly.
- Waste from such containers shall be collected separately daily.
- All the collection bins shall be properly maintained on regular bases.
- The recyclables i.e., fabric cuttings shall be stored separately and sold to furniture manufacturing vendors. These will be used in fillings of sofas and cushions etc.

5.9 Potential Environmental Enhancement Measures

5.9.1 Tree Plantation

Shade trees including sheesham, neem will be grown outside boundary of project. Grasses, median plants, and median shrubs will also be grown. Aesthetic and beauty plants including roses and jasmine will be planted. Tree's height will be between 3-7 ft. Spacing between plants will be 6-8m. Tree plantation will be done in open spaces and along boundary of project site.

CHAPTER 6: ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS

This chapter summarizes the various mitigation measures as outlined previously in this EIA Report that will be implemented during the operational and decommissioning stages of project. It does not discuss further the mitigation measures which have been adopted within the design and planning of the project, as these are comprehensively covered in previous section of this EIA Report.

Outline and key features of the EMMP for operations phase is presented. As per the environmental legislation in Pakistan, the EMMP for the operations phase, along with other documents, is to be submitted to the environmental protection agency to obtain confirmation for compliance and Environmental Approval for project operation. Even after implementation of the suggested mitigation measures, the impact may remain significant, and require monitoring.

6.1 Objectives

An Environmental Monitoring Plan was outlined alongside Environmental Management Plan to ensure all the corrective actions to counter adverse impacts which gives a detailed EMMP. The EMMP will serve as a principal execution module of the project that would not only mitigate adverse environmental impacts during the operational phase of the project but also ensures that environmental standards and good in-housekeeping are being practiced. Continuous environmental monitoring is exercised to ensure that preventive measures are in place and effective to sustain environmental integrity. The key objectives of EMMP are:

- To outline functions and responsibilities of persons
- To state and implement standards and guidelines which are required under environmental legislations particular in context to the Project.
- To facilitate the implementation of the mitigation measures by providing the technical details of each Project's impact and proposing implementation schedule of the proposed mitigation measures
- Define a monitoring mechanism and identify monitoring parameters to ensure that all proposed mitigation measures are completely and effectively implemented.
- Identify the resources required to implement the EMMP and outline corresponding financing arrangements.

6.2 Management Approach

The organizational roles and responsibilities of the key players are summarized below:

6.2.1 Proponent

The project proponent will undertake overall responsibility for compliance with the EMMP. The concerned departments will carry out verification checks to ensure that the contractors are effectively implementing their environmental and social requirements.

6.2.2 Contractors

The contractors will implement most environmental and social mitigation measures. The contractors will carry out field activities as part of the project. The contractors are subject to certain liabilities under the environmental laws of the country, and under its contract with proponent.

6.3 Components of EMMP

The EMMP consists of the following:

- ⇨ Institutional arrangements
- ⇨ Mitigation plan to reduce the severity of associated impacts.
- ⇨ Monitoring plan to monitor the impacts and their severity.
- ⇨ Environmental and social trainings to raise awareness.

6.3.1 Remedial and Mitigation Measures

The objective of remedial and mitigation measures in any project is to identify practices, technologies or activities that would prevent, minimize, or mitigate all significant negativities that are likely to occur due to the proposed project.

6.4 Environmental Management and Monitoring Framework

The purpose of the environmental management and monitoring framework is to facilitate the implementation of environmental commitments, included in the environmental impact assessment. The proponent is committed for the protection of the environment and to the sustainable management of its related operations and activities.

Table 17: Environmental Management & Monitoring Plan

Sr. No.	Project Activities	Potential Impacts	Mitigation Measures	Monitoring Measures	Frequency	Responsible Authority	Environmental Budget

LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM
EPA

Table 18: Environmental Management and Monitoring Plan

Category	Impact	Project Activity	Monitoring Mechanism	Frequency	Monitoring Agency
Operational Phases					
Land Resource	Solid Waste and By-Products	Implementation of SW* Management System	Record keeping and timely transfer of SW from bins to the disposal site for ultimate management and disposal. Selling of the scrap dust to the small refineries	Weekly and annually	Proponent
	Soil Contamination	Implementation of Management Plans	Visual monitoring and regular site inspection	Daily and annually	Project Manager
Air Resource	Air Emission	Air quality will deteriorate due to transportation related activities	Monitor the emissions as per PEQ standards	Once before start of operation and after that as when required during operational phase	EA**
Ecological Resource	Flora	Uprooting of trees during Construction phase and maintenance of photographic record	Re-vegetation during operation phase	During Baseline Survey, once in a year and after the completion of the Project	Project Manager

Wastewater	Wastewater will be generated mainly from domestic use and process activities	Installation of the WWTP, septic tanks and regular testing of the effluents that are being discharged	On the monthly basis	Project Manager
**SW= Solid Waste, **EA= Executive Agency*				

EPA
LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM

6.4.1 Environmental Management Team

The proposed institutional arrangement for the implementation of EMMP is based on the discussions held with the Forest Department, Environmental Protection Department, Local Union Council Office and Proponent. The discussion concluded that three types of institutional arrangements are essential for the effective implementation of EMMP, these are follows:

- installation of machinery of Environment/Social Management Group
- External Monitoring by EPA certified laboratory
- EMC established by Proponent after consultation with consultant.

a. Roles and Responsibilities

Following are the designated roles and responsibilities of the employees involved in the monitoring and management of the adverse impacts:

Table 19: Roles and Responsibilities

Roles and Responsibilities		
Sr#	**Concerned Persons**	**Duties**
1	The Project Manager	Following will be the responsibilities of the Project Manager. • Monitor the implementation of the EMMP throughout the project by means of site inspections and meetings. This will be documented as part of the minutes of the site meeting documents. • Ensuring project execution within defined budget and timelines • Conducting regular check of the project status and meetings with project team • Provide support and guidance to project team as and when needed. • Project Manager is expected to continually monitor and improve the overall performance of their operation
2	HSE Manager	In addition to the health and safety responsibilities held by staff, managers and supervisors must do whatever is reasonably

LUBNA PERVIN (librarian) EPA librarian.epa 101.53.234.71 21/11/2023 2:53:46 PM

		practical to ensure that both the workplace and the work itself are safe. This includes: • Ensuring that staff are appropriately trained and supervised. • Identifying, assessing, and managing health and safety risks • Consulting with workers (including staff, affiliates, and contractors): i. Health and safety risk assessments ii. Decisions are made about the measures to be taken to eliminate or control these risks. iii. Health and safety risk assessments • Implementing health and safety risk management programs relevant to their operations, teaching, research and consulting functions and work environment • Reporting (to the Human Resources Unit), investigating and responding to all hazards, accidents, incidents and taking action to control the risk. • Assisting with the development, implementation and maintenance of a return-to-work program for injured staff. • Be fully conversant with the IEE and conditions of its approval. • Be fully conversant with the EMMP. • Be fully conversant with all relevant environmental legislation, policies, and procedures, and ensure compliance. • Undertake regular and comprehensive inspection of the site and surrounding areas in order to monitor compliance with the EMMP. • Take appropriate action if the specifications contained in the EMMP are not followed. • Monitor and verify that environmental impacts are kept to a minimum, as far as possible. • Ensure that activities on site comply with all relevant environmental legislation.

LUBNA PERVIN (librarian) EPA
librarian.epa 101.33.234.71
21/11/2026 2:53:40 PM

		• Compile progress reports on regular basis, with input from the Site Manager, for submission to the Project Manager, including a final post excavation audit. • Liaise with the Site Manager regarding the monitoring of the site. • Report any non-compliance or remedial measures that need to be applied

6.4.2 Impacts Management and Monitoring Plans

The following environmental issues are considered to warrant specific management actions for the implementation of project. These issues have specific regulatory requirements (contained in the development consent or Environmental Approval) and/or are considered to have the potential to result in a non-compliance with a legislative requirement or generate community complaints.

6.5 Proposed Monitoring to Assess the Performance of EMP

An environmental monitoring plan provides a delivery mechanism to address the adverse environmental impacts of a project during its execution, to enhance project benefits, and to introduce standards of good practice to be adopted for all project works. An environmental monitoring program is important as it provides useful information and helps to:

- Assist in detecting the development of any unwanted environmental situation, and thus, provides opportunities for adopting appropriate control measures, and
- Define the responsibilities of the project proponents, contractors and environmental monitors and provides means of effectively communicating environmental issues among them.
- Define monitoring mechanism and identify monitoring parameters.
- Evaluate the performance and effectiveness of mitigation measures proposed in the Environment Management Plan (EMP) and suggest improvements in management plan, if required,
- Identify training requirement at various levels.

  Following environmental record should be maintained:
- Incident record of all moderate and major spills and other incidents and accidents. The record will include:
  - ✓ Location of spill or Spilled material
  - ✓ Estimated quantity or the amount of injury.
  - ✓ Nature of injury or loss (temporary or permanent)

- ✓ Restoration measures
- ✓ Photographs

- Description of any damage to vegetation, water resource, or community asset.
- Corrective measures taken if any
- Records of water consumption with usage breakdown
- Survey reports, in particular, the following:
  - ✓ Vehicle and equipment noise.
  - ✓ Ambient noise survey reports.
  - ✓ Ambient level of PM
  - ✓ Vendor data—all vendors disturbed by the project and compensation paid Public infrastructure: Record of all damages and repair work undertaken.
  - ✓ Employment
  - ✓ Name and domicile of the employed staff.
  - ✓ Project and Community Interface
  - ✓ Record of community complains, and the measures taken to address them.
  - ✓ Number of meetings held in various communities and data of persons who attended
  - ✓ Environmental and social training records.

Table 20: Environmental Monitoring Plan

Environmental Quality	Parameters	Details of Location	Standards/Guidelines	Frequency	Responsibility
OPERATIONAL PHASE					
Ambient Air Quality	NO_X, SO_X,	Stack of generator	PEQS	Quarterly	Environment Officer /manager
Noise Level	Noise level on dB (A) Scale	Noise level near the receptor	PEQS	Quarterly	Environment Officer /manager
Waste disposal, procedure for waste collection, storage, and disposal	Inspection of waste generation, collection, storage, and disposal will be undertaken at each site of the project activity	Visual inspection	Statutory Requirements	Once daily	Administration Officer

Safety	Injuries	Injuries will be recorded		Daily	Administrator

Table 21: Air Quality Management and Monitoring Plan

Air Quality Management and Monitoring Plan				
Potential Impacts	**Operational Phase**			**Environmental Budget**
	Installation of Dry scrubber			
Mitigation	Installation of dust collection and control equipment to minimize the emissions			
Plan	• The transporting vehicles will be maintained on the regular basis. • Enforce strict speed limits to reduce airborne fugitive dust emission from vehicular movement. • Minimize the land disturbance as much as possible by re-vegetating disturbed areas as soon as possible. • Cover dump trucks before travelling on public roads. • Train workers to handle loose materials and debris to reduce fugitive emissions. • Good quality (low Sulphur) fuel will be used in the vehicle to ensure less emissions. • Indigenous trees around the facility will be planted to control the odour and air pollution. • Rehabilitation of areas outside of the site security fence will be undertaken by the successful implementation of the landscaping plan • Tree species *like Dalbergia sissoo, Cassia seamea, Acaccia mangium* and *Peltaphorum* can be planted in areas as they have high growing rate as well they will help in noise, dust and pollution reductions.			
Monitoring	Responsibility	Responsible	Monitoring Duration	
	• Preparation of required or requested information for submission	Project Manager/Contractor	As & when required	50,000/-

LUBNA PERVIN (librarian) EPA librarian epa 101.53.204.71 21/11/2026 2:53:40 PM

	to the Project Manager including air quality monitoring data • Liaising with the Project Manager with respect to all significant air quality matters			

LUBNA PERVIN (librarian)
EPA
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM

Table 22: Wastewater Management and Monitoring Plan

Wastewater Management and Monitoring Plan	
Potential Impacts	**Operation Phase**
	During the operational phase chances of the groundwater contamination will be quite low. It is estimated that 0.4m^3 per day of municipal wastewater will be produced. The water will be used in boilers to steam-press the final product and as a result 50% of the water will be loss as a result of evaporation No process wastewater water will be produced that need treatment.

Solid Waste Management and Monitoring Plan		
Potential Impacts	**Operation Phase**	**Environmental Budget**
	No hazardous waste will be generated in the process activity except the municipal waste. In addition, domestic solid waste will be generated.	
Mitigation	**Waste Management Plan**	
Management Plan	⇨ Hazardous and non-hazardous waste will be separated prior to the transportation of the waste. As the aforesaid project generates no hazardous waste, no segregation is required. ⇨ Record of all waste generated 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. General Waste ⇨ General waste cannot be recycled or used, it will be stored in appropriate receptacles and picked up as required by a worker and will be disposed of at the designated sites/bins ⇨ The generated waste will be collected by the contractor on the regular basis and will be disposed off by using standard practices ⇨ No on-site burning of wastes will be allowed at any time ⇨ Tree species like *Dalbergia sissoo*, *Cassia seamea*, *Acaccia mangium* and *Peltaphorum* are ideal for bio-reclamation of overburden dumps. Green Waste	

LUBNA PERVIN (librarian) EPA librarian epa 101.53.234.71 21/11/2026 2:53:40 PM

	⇨ It will be ensured that minimum green waste will be generated on-site ⇨ It will be generated from landscape maintenance activities. It will be reused on-site where possible or disposed off un-contaminated by using the standard practices at the designated sites. ⇨ Green waste can be used as the fuel wood by the nearby residents. ⇨ No on-site burning of green wastes will be allowed at any time on-site Solid Waste ⇨ For the collection of the solid waste at site bins will be installed at various positions in the proposed facility ⇨ The installed bins will be covered in order to reduce the chances of the disease vector production and ensure the health of the workers ⇨ The amount of the solid waste generation will be disposed off by using the standard practices in the area			
Monitoring	**Responsibility**	**Responsible**	**Monitoring Duration**	
	• Coordinate the training needs for all employees in environmental awareness training as a legal responsibility • Waste collection and disposal will	Project Manager	Visual Monitoring on Regular basis	75,000/-

LUBNA PERVIN (librarian)
EPA
librarian.epa 101.53.234.71
21/11/2026 2:03:40 PM

	be monitored on a regular basis • Solid Waste documentation will be completed and available for inspection on request • A complaints register will be held, complaints will be investigated and, if appropriate, acted upon			

Mitigation	Sanitary wastewater treatment system such as septic tank will be constructed on-site for the disposal of wastewater. And for the treatment of wastewater generated by the process WWTP will be installed.
Management Plan	• Monitoring of effluents shall be carried out as per requirement of Self-Monitoring and Reporting Tools (SMART) to ensure compliance with the PEQS. • There is no surface water body present in the project proximity that could be impacted due to the discharge of the wastewater. • Good in-house keeping practices should be adopted to ensure water conservation. • Closed the taps when water isn't in use. • The domestic wastewater will be discharged into the septic tank prior to final disposal in the sewerage line. The design specifications of the septic tank are: • The wastewater after primary treatment will be used for on-site horticultural activities and the excess wastewater will be disposed off in the nearby wastewater drain after necessary approval

Monitoring	**Responsibility**	**Responsible**
	Monitoring of the safe disposal of the generated wastewater as per Environmental Monitoring of this EMMP	Project Manager
	A complaints register will be held, Complaints will be investigated and, if appropriate, acted upon	

Table 23: Health and Safety Plan Management and Monitoring Plan

Health and Safety Plan Management and Monitoring Plan		
Physical Hazards	The health and safety risks to workers include but are not limited to: • Floor surfaces shall be maintained regularly and kept clean and free of oil spills, other slippery fluids and obstructions • Workers who may be exposed to noise levels exceeding occupational standards shall receive regular audiometric testing • The effective use of hearing protection devices shall be ensured. • Proper training will be provided to workers entering and working in the confined space of the hazards, protective measures, and emergency rescue procedures. • Only authorized persons shall be allowed near grinding unit. • People working in and around the processing areas shall be provided with suitable PPEs to protect them against molten metal burns, noise, and physical hazards. • Proper radiation shielding may be provided. • Edged parts of rolls shall be securely guarded to prevent severe injuries. • Transport routes shall be planned and constructed to minimize the risk of collision and with sufficient safe clearance to allow for aisles and turns, or other types of control area. Where appropriate, maps showing the proposed route should be provided. • Transport routes shall be clear of obstructions and, where possible, without irregular surfaces.	Environmental Budget: 1,00,000/-

	• Loads should be lowered slowly and smoothly to avoid physical hazards.	
Chemical Hazards	Following mitigation measures will be adopted: • Personal Protective Equipment (PPEs) should be given to workers including protection and impermeable clothing for use during disinfection. • Wearing of the PPEs should be regulated strictly by the concerned authority • Chemical spillage will be avoided by developing proper SOPs for the handling of the chemicals. • Chemicals and detergents will be stored properly, and all precautionary measures will be adopted	25,000/-
Accidental Spillage		
	Following mitigation measures will be adopted: • Inspection of the chemical storage areas shall be conducted on a monthly basis for sanitation, maintenance, and housekeeping purposes. • Safety, housekeeping, and chemical storage problems will be addressed as part of normal facility operations and maintenance programs. • Inspection observations shall record on the Chemical Inspection Form included with this Plan. • Potentially reactive or non-compatible materials will not be stored together in the same storage or containment unit. • Damaged or leaking containers will be isolated, when possible, in a containment area or repackaged to prevent loss, exposure or hazards. • Containment areas should be kept clear of extraneous materials. • Containment areas should be kept in good repair. • Dyeing agent are to be stored in designated areas. • Spill response equipment maintained at the site includes spill kits, a full array of maintenance equipment and tools, and a variety of forklifts and service equipment. Spill kits are located at the tool storage sheds. Spill kits will contain absorbent media, portable containment booms, and pads.	

	• All current and future employees are to receive training with regard to the Accidental Spill Prevention Plan. • Training will be provided as part of new employee orientation and includes a review of chemicals stored and utilized at the Facility. This training includes a basic review of MSDS, availability of MSDS for chemicals present at the Facility, familiarization with basic emergency procedures, location and contents of spill kits, emergency escape routes, and responsibilities.	
Security Risks	To eliminate the security issues following mitigation measures will be adopted: • Proper Security will be provided to the workers. • Security guards will be appointed. • 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.	25,000/-

6.6 Proposed EMP Reporting and Reviewing Procedures

An effective mechanism to store and communicate environmental information during the project is an essential requirement of an EMP.

6.6.1 Meetings

As environment is multidisciplinary subject with environmentalist having a dynamic role therefore Environment Officer would be considered as integral part in operational team. Participation of Environment Officer in daily morning meeting and any other special meeting is mandatory. Besides internal meeting HSE Engineer/Environment Officer is also responsible to conduct meeting with local in keeping administration in liaison.

6.6.2 Changes-Record Register

A change-record register will be maintained at the site, in order to document any changes in project design. These changes will be handled through the change management mechanism.

6.6 Training and Capacity Building

Training and capacity building trainings are conducted on the regular basis to enhance the capacity of the workers hired for the working. Following is the detailed plan along with the schedules of the training:

Table 24: Training and Capacity Building Plan

Training and Capacity Building Plan

Potential Impacts	**Operation Phase**		
	During operational phase, nearby society will face problems like: • Noise Pollution due to processing and movement of vehicles • Disease vector production due to improper management of solid waste • Contamination of ground water if the wastewater is not disposed off properly. • HSE issues may arise.		
Mitigation	**Training and Capacity Building Plan**		
Management Plan	**Training and Capacity Building Plan** Project will ensure in-house training for the project staff and the supervisory staff of the Proponent/EA through the provision of one day basic training and one day advanced training, covering environmental and social aspects of the projects in general, and implementation requirements will emphasis on the development projects in general, and implementation requirements with emphasis on the roles and responsibilities of the staff and the labour while executing the environmental monitoring plan in particular. The training protocols will include the following aspects: ⇨ Procedures for monitoring water quality parameters and measures to be adopted for avoiding or minimizing water pollution, particularly from the wastewater effluent generated from municipal uses and in the process activity. ⇨ Safe solid and process waste disposal practices ⇨ Safety measures against hazards for workforce and the local communities arising from the operational activities. ⇨ Use of safety gadgets by the workforce. ⇨ Training for the use of PPEs		
Monitoring	**Responsibility**	**Responsible**	**Monitoring Duration**
	Training of staff, vehicle operators and labour	Project Manager / HSE Manager	1 day training once a year

6.7 Impacts and their Mitigation Summary

Environmental and social impacts have been identified for the establishment of the building; their impacts had been mitigation by adopting required measures as recommended in EMMP

of this EIA Report within the Project Area of Influence. The major impacts on physical, biological and social environment are described as under:

Table 25: Impacts Summary

Environmental Parameters	Impact Assessment during operational Phase
	Operational
A: Physical	
Land Resources	
Soil Erosion and Contamination	0
Transportation	-1t
Solid Waste and By-Products	-1p
Land Use	NA
Air Resources	
Noise Pollution	-1t
Air Pollution	-1t
Dust Emissions	-1t
Water Resources	
Ground Water	-1p
Surface Water	NA
Wastewater	-2p
B : Ecological	
Flora	
Tree Cutting	+1p
Fauna	
Terrestrial Fauna	+1p
C: Socio-Economic	
Employment Opportunities	+3p
Land Value Appreciation	+2t
Availability of Local Raw-Material	+2p
Economic Uplift	+3p
D: Hazards	
Physical Hazards	-1p

LUBNA PERVIN (librarian)
EPA
librarian.epa@101.53234.71
21/11/2026 2:53:40 PM

Chemical Hazards	-1p
Health and Safety	-1p
Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable; t= Temporary; p= Permanent; app= Applicable; 0= Negligible	

6.8 Equipment Maintenance Details

The Client and Contractor will be responsible to maintain equipment with higher efficiency and in good working conditions. The equipment will be maintained twice a year as well as monthly inspection will be done on the regular basis to keep the process going without any interruption.

6.9 Environmental Budget

The environmental budget for the project is PKR 0.1 million which will be used for the control of the air pollution by the installation of dust collection system, tree plantation at various designated sites, EMMP for the operational phase and monitoring of environmental parameters (such as ambient air, noise and wastewater). The total cost of the project is PKR 75 Million. EMMP and the monitoring will be carried out on the regular basis. So, more than 1% of the total project cost will be allocated for the environmental protection.

EPA LUBNA PERVIN (librarian) librarian.epa 101.53.234.71 21/11/2026 2:53:40 PM

CHAPTER 7: PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

Public consultation refers to the process by which the concerns of local affected persons and others who have a plausible stake in the environmental 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 IEE and EIA Review Regulations, public consultation is mandatory for any socio-environmental study.

7.1 Proponent's Environmental Management Team

Following are the designated roles and responsibilities of the employees involved in the monitoring and management of the adverse impacts and will be appointed after operation of project starts.

Roles and Responsibilities		
Sr#	**Concerned Persons**	**Duties**
1	The Project Manager	Following will be the responsibilities of the Project Manager. • Ensure that the contractor is aware of all specifications, legal constraints, standards, and procedures pertaining to the project specifically with regards to environment. • Ensure that all stipulations within the EMMP are communicated and adhered to by contractor(s) • Monitor the implementation of the EMMP throughout the project by means of site inspections and meetings. This will be documented as part of the minutes of the site meeting documents. • Ensuring project execution within defined budget and timelines • Conducting regular check of the project status and meetings with project team • Provide support and guidance to project team as and when needed. • Project Manager is expected to continually monitor and improve the overall performance of their operation
2	HSE Manager	In addition to the health and safety responsibilities held by staff, managers and supervisors must do whatever is reasonably practical to ensure that both the workplace and the work itself are safe. This includes: • Ensuring that staff are appropriately trained and supervised. • Identifying, assessing, and managing health and safety risks • Consulting with workers (including staff, affiliates, and contractors): 1. Health and safety risk assessments 2. Decisions are made about the measures to be taken to eliminate or control these risks. 3. Health and safety risk assessments

LUBNA PERVIN (librarian)
EPA
librarian.epa 101.53.234.71
21/11/2022 2:53:40 PM

		• Implementing health and safety risk management programs relevant to their operations, teaching, research and consulting functions and work environment • Reporting (to the Human Resources Unit), investigating and responding to all hazards, accidents, incidents and taking action to control the risk. • Assisting with the development, implementation, and maintenance of a return-to-work program for injured staff. • Be fully conversant with the EIA and conditions of its approval. • Be fully conversant with the EMMP. • Be fully conversant with all relevant environmental legislation, policies and procedures, and ensure compliance. • Convey the contents of this document to the contractor site staff and discuss the contents in detail with the Project Manager and Contractor • Undertake regular and comprehensive inspection of the site and surrounding areas in order to monitor compliance with the EMMP. • Take appropriate action if the specifications contained in the EMMP are not followed. • Monitor and verify that environmental impacts are kept to a minimum, as far as possible. • Ensure that activities on site comply with all relevant environmental legislation. • Compile progress reports on regular basis, with input from the Site Manager, for submission to the Project Manager, including a final post excavation audit. • Liaise with the Site Manager regarding the monitoring of the site. • Report any non-compliance or remedial measures that need to be applied.

LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2022 2:53:40 PM

7.2 The Responsible Authority

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

- Share information with stakeholders on proposed project installation and operation.
- Access the impacts on the physical, biological, and socioeconomic environment.
- Understand stakeholder concerns regarding various aspects of the project commencement.
- Find out valuable suggestions by the 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 operation of M/S Pak Solo Dyeing at the proposed location at Multan is the nearest community located at 1861 Meters 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 of machinery of M/S Pak Solo Dyeing.

7.3 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 the 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 the consultation with the 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 the 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.

7.4 Identification of Stakeholders

All the people who are directly or indirectly affected or concerned with the project are the stakeholder. Besides the living population of the surrounding areas, some other stakeholders were identified and contacted which enlisted below. They are the key players including shops, public and government offices, schools, university, hospitals, hotels, international agencies and the NGOs. Not only published material, brief or other literature were obtained on request, but also noted their views and the concerns, in an official capacity as well as on the personal basis. Following stakeholders are identified for this project:

Project Affected Persons (PAPs) include the settled families, either property owners or the tenants, businessmen (big, shopkeepers, vendors, etc.), employees of the commercial entities. PAPs are of two types, for instance:

7.4.1 Direct Stakeholders

No disturbance in the local community is being foreseen due to the installation of machinery as the distance between the community and the project area is 2.2 km (Islam Pura). No property loss is being envisaged due to the construction of the M/S Pak Solo Dyeing.

7.4.2 Indirect Stakeholders

Indirect impact will occur on those who are living or doing business within a Project Area of Influence (AOI). In the case of the proposed project, the citizens of nearby Islam Pura will get opportunities of being employed. So, in the early development stages and during the operational phase the people will be benefited due to the installation of the M/S Pak Solo Dyeing.

7.4.3 Other Departments and Agencies

Following departments are related to the project in public consultation:

- ⇨ Government agencies responsible to deal with the project related activities.
- ⇨ Government Agencies directly, indirectly, or widely involved in the execution and monitoring of the proposed project.
- ⇨ Government departments such as TMA and Planning & Development Department, Forest Department, Agricultural Department Industrialist around the estate and working on the other development activities are considered as indirect stakeholders.

- ⇨ Workers of political, cultural, religious, or social scientific bodies, directly or indirectly related to the project.

7.5 Public Disclosure

Public disclosure is the outcome of all such activities where the public is involved at least in the information sharing process. This is an integral part of the process. So, before the proponent applies for NOC to the Punjab-EPA, this disclosure will be distributed properly among all stakeholders. It is the responsibility of the proponent and the consultants to display a public disclosure document in prominent places where community has easy access.

7.6 Consultation Process

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

- Data collection regarding the socioeconomic condition of the 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 on the proposed project and expected impacts on community in the vicinity of the project.
- Understand stakeholders' concerns regarding various aspects of the project, including the existing condition of the upgrading requirements, and the likely impact of 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.

7.7 Environmental Practitioners and Experts

Officers of government departments, Educational Institutes, Lawyers and NGOs 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.

7.8 Affected and Wider Community

In addition, to the use of direct methods to evince the response of the various stakeholders in the population of the study area was ascertained by conducting a sample survey. 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 amenity.

- ➔ To share information on the design and specifications of proposed project works
- ➔ To analyze the expected impact on the socioeconomic environment
- ➔ To understand their concerns regarding various aspects of operation

7.8.1 Views, Concerns and Suggestions of Various Stakeholders

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

- Removal of shrubs and trees should be avoided to the extent possible
- The project will become the source of income for local to earn their livelihood easily and honorably.
- The area will become further industrialized.
- For the solid waste management and waste disposal, proper disposal techniques should be adopted.
- Employment opportunities will be generated, and locals should be hired on the priority basis.
- The air pollution is one of the major impacts of the proposed project, so ambient air quality should be monitored regularly.
- 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.

- The contractor should prefer hiring local labor from adjacent nearby villages.
- Indigenous tress around the facility should be planted to control air pollution and as the compensation.
- Noise reducing barriers should be installed to reduce noise pollution.

7.9 Addressing Public Concerns

The best mechanism of effective communication between the community and the proponent is the by the nomination of the representative of the community and all the issues/concerns must be recorded for future reference. This representative may be the member of the Grievances Redressed Committee (GRC).

7.10 Acceptance Level of the Project

The opinions of the respondents were noted during the public consultation. The majority of respondents (90%) of Chak 157 were in favor of the proposed project. They expect that installation of the unit will also increase the economic value of local assets. According to them the proposed project will boost the employment opportunities, mobility access to resources and social amenities.

EPA
LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM

CHAPTER 8: CONCLUSION & RECOMMENDATIONS

The findings of EIA Report showed that although The M/S Pak Solo Dyeing is expected to have significant negative impacts on the environment during the operational phases, but the severity of these adverse impacts can be reduced significantly by adopting the suggested mitigation measures in EMMP with true spirit. Moreover, their severity can be further reduced by adopting relative mitigation measures as proposed in the Chapter 5 of this EIA Report. The impacts were assessed by frequent site visits, studying related projects and by reviewing relevant documents. Generally, the project is planned to follow efficient environmental management systems. Specific environmental and social benefits have been mentioned below which depend on the proper application of mitigation measures suggested in EMMP and best engineering practices.

8.1 Merits and Demerits

The major positive impacts include increased job opportunities, business opportunities, and environmental enhancement through tree planation. The project will raise the income of the persons directly associated with project as well as it will also improve the socio-economic status of the area. In general, potential adverse environmental effects resulting from the proposed activities will be temporary in nature, short-term and of low magnitude. Through application of standards, recommended mitigation measures, adherence to applicable permit conditions and regulations, adverse impacts can be effectively minimized. The project is not likely to have significant adverse environmental impacts which cannot be mitigated. Negligible negative impacts that are likely occur during construction of building includes air pollution due to movements of vehicles, removal of bushes and shrubs, potential impact to the local water resources and social impacts may affect the locals residing in the nearby community can be foreseen. Mitigation measures will be implemented to minimize environmental impacts though they are still negligible. There are certain mitigations suggested to cater for the aforesaid issues.

8.2 Recommendations

The intensity and severity of impacts occurred due to the installation of machinery namely M/S Pak Solo Dyeing varies with change in the nature and magnitude of the project as well as depends upon the baseline environmental conditions of the area. The mitigation measures will require constant information flow and consultation with the stakeholders to ensure the least adverse social-economic impact to outweigh the “no project development” scenario.

- ➔ The adverse environmental impacts can be reduced significantly by adopting best management and monitoring practices as well as by implementation EMMP with true spirit.

- ➔ Proper PPEs including aprons, rubber gloves and shoes should be provided to workers.
- ➔ No compromise on public health and environment should be allowed.
- ➔ Waste minimization practices should be introduced to workers by conducting lectures on spot to aware the workers about the long-term benefits of the same in lieu of surrounding environment.
- ➔ A proper tree plantation plan should also be developed in order to make the process environment friendly.
- ➔ Small domestic waste storage bins should be placed at different locations for proper collection and disposal of the solid waste.
- ➔ It is recommended that the Proponent should obtain an Environmental Approval (NOC) from the Punjab-EPA before proceeding further.

LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM
EPA

GLOSSARY

Agency	A business or organization providing a particular service on behalf of another business, person, or group.
Apparel	Personal attire or clothing of a particular kind
Climate	The weather conditions prevailing in an area in general or over a long period.
Consultant	A person who provides professional advice or services to companies for fee.
Demographic	A single vital or social statistic of a human population, as the number of births or deaths.
Ecology	The branch of biology that deals with the relations of organisms to one another and to their physical surroundings.
Endangered species	A species of animal or plant that is seriously at risk of extinction.
Environment	Relationship of natural world (human beings, animals and plants) with physical surroundings (air, land, water).
Excavation	Excavation is the act or process of digging, especially when something specifics being removed from the ground. Archaeologists use excavation to find artifacts and fossils.
Framework	A framework is a real or conceptual structure intended to serve as a support or guide for the building of something that expands the structure into something useful.
Hazardous Waste	Hazardous Waste is waste that poses substantial or potential threats to public health or environment.
Impact	The action of one object coming forcibly into contact with another.
Livelihood	A set of activities involving Securing the basic necessities –food, water, shelter and clothing of life.
Lockdown	A state of isolation or restricted access instituted as a security measure.
Municipal Waste	Municipal Solid Waste (MSW)—more commonly known as trash or garbage—consists of everyday items we use and then throw away, such as product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, paint, and batteries. This comes from our homes, schools, hospitals, and businesses.

Nature	The phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations.
Proponent	A person who advocates a theory, proposal, or course of action.
Rehabilitation	To restore to a condition of good health, ability to work, or the like.
Resettlement	The settlement of people in a different place.
Sanitation	Conditions relating to public health, especially the provision of clean drinking water and adequate sewage disposal.
Stakeholder	A stakeholder is a party that has an interest in a company and can either affect or be affected by the business. The primary stakeholders in a typical corporation are its investors, employees, and customers.
Topography	Topography is the study of the shape and features of the surface of the Earth and other observable astronomical objects including planets, moons, and asteroids.
Vegetation	Plants considered collectively, especially those found in a particular area or habitat.

EPA
LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM

LIST OF ABBREVIATIONS

AOI	Area of Interest
°C	Degree Celsius
CO_2	Carbon dioxide
EIA	Environmental Impact Assessment
IEE	Initial Environmental Examination
EMMP	Environmental Management and Monitoring Plan
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
EPD	Environmental Protection Department
GDP	Gross Domestic Product
GRC	Grievances Redressed Committee
HSE	Health and Safety Engineer
m^3	Cubic meter
MEPCO	Multan Electric Power Company
MW	Megawatt
PEQS	Punjab Environmental Quality Standards
No.	Number
NOC	No Objection Certificate
NO_x	Oxides of Nitrogen
PEPA, 2012	Punjab Environmental Protection (Amendment) Act, 2012
PEPO	Pakistan Environmental Protection Ordinance
PKR	Pakistani Rupees
PM	Particulate Matter
PPEs	Personal Protective Equipment
QA	Quality Assurance
RO	Reverse Osmosis
SOPs	Standard Operation Procedures
TMA	Town Municipal Authority
WWTP	Wastewater treatment Plant

LUBNA PERVIN (librarian) EPA
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM

LIST OF PEOPLE CONSULTED

Sr. No.	Name	Fathers' name	CNIC	Concerns/views
1	Saqib Ali	Riaz Ali	35202-4225635-9	Positive
2	Muhammad Shabbir Ali	Syed Farooq	35201-6650791-1	Positive
3	Mohsin Mahmud Dar	Irfan Dar	35202-2607775-3	Positive
4	Haider Muzaffar	Muhamad Muzzafar	35202-4567566-3	Concerned about Water pollution
5	Abdul Khurram	Khurram Imtiaz	35202-3483674-5	Concerned about Air pollution
6	Umar Ali	Faisal Manzoor	35202-2701116-1	Positive
7	Jawad Ahmed	Muhammad Boota	35202-4202245-7	Positive
8	Azhar Aziz	Nisar Ahmed	34401-5144918-9	Positive
9	Behzad Taimur	Muhammad Taimur	38401-6768711-1	Positive
10	Aslam Pasha	Bilal Pasha	34401-0223636-3	Positive

LIST OF ORGANIZATIONS CONSULTED

Name	Organization	Feedback
Arbab Ali	Officer EHS Yousef textile	Establishment of this unit will cope with growing market need.
Fizzah Batool	Internee Sia apparel (PVT) Ltd	It will help in boosting economy of our country.
Arbaz Shaheen	Production Manager Denim Plus (Pvt) Ltd	Establishment of this unit must be favored at all costs considering the increased demand of the products
Arshad Siddiqi	Professor Department of Textile Manufacturers Association	Pakistan is one of the biggest exporters when it comes to textile products. It will eventually increase employment opportunities and economy of the area.
M. Arshad	Assistant Director EIA EPA, Punjab	Such facility will greatly help in reducing pressure of job availability and export quality sports gear.

EPA LUBNA PERVIN (librarian) librarian.epa 101.53234.71 21/11/2026 2:53:40 PM

Sources of Data

- https://www.pmd.gov.pk/en/
- http://www.agripunjab.gov.pk/
- Khattab, T. A., Abdelrahman, M. S., & Rehan, M. (2020). Textile dyeing industry: environmental impacts and remediation. Environmental Science and Pollution Research, 27(4), 3803-3818.
- Kant, R. (2011). Textile dyeing industry an environmental hazard.
- Kadirvelu, K., Palanival, M., Kalpana, R., & Rajeswari, S. J. B. T. (2000). Activated carbon from an agricultural by-product, for the treatment of dyeing industry wastewater. Bioresource Technology, 74(3), 263-265.
- Sudhakar, R., KN, N. G., & Venu, G. (2001). Mitotic abnormalities induced by silk dyeing industry effluents in the cells of Allium cepa. Cytologia, 66(3), 235-239.
- Memon, N. A. (2016). Pakistan apparel industry: Competing global market. Pakistan Textile Journal, 65(1).
- Luo, Y., Song, K., Ding, X., & Wu, X. (2021). Environmental sustainability of textiles and apparel: A review of evaluation methods. Environmental Impact Assessment Review, 86, 106497.
- Rajkumar, D., & Kim, J. G. (2006). Oxidation of various reactive dyes with in situ electro-generated active chlorine for textile dyeing industry wastewater treatment. Journal of hazardous materials, 136(2), 203-212.
- Field Surveys
- Public Consultations

LUBNA PERVIN (librarian) EPA librarian.epa 101.53.264.71 21/11/2026 2:53:46 PM

TERMS OF REFERENCE (TORS)

INITIAL ENVIRONMENTA EXAMINATION OF M/S PAK SOLO DYEINGLOCATED AT 25 KM-KHORI STOP, WASEEM SAJJAD ROAD, MURIDAKE, SHEIKHUPURA.

1.1 PROJECT PROPONENT:

Muhammad Qasim S/O Muhammad Shafiq

1.2 SCOPE OF WORK: CONSULTANT

Zia Ahmad intends to establish a M/S Pak Solo Dyeingat Multan.

1.3 SPECIFIC OBJECTIVES:

The EIA shall be carried out with an objective of identifying environmental impacts during change in Land use of the Master Plan. The specific objectives will be as follows:

- Identification of impacts on physical environment including land, water, and air and suggesting mitigation measures.
- Identification of impacts on biological environment including flora, fauna and natural habitat and suggesting mitigation measures.
- Identification of impacts on socio-economic environment in the vicinity of the proposed landfill site and suggesting mitigation measure.
- Mitigation measures for potential impacts (Physical, Biological and Socio-environmental)
- Environmental Management and Monitoring Plan/ Contingency Measures

1.4 THE IEE SHALL COVER FOLLOWING MAIN AREAS:

- Background of the project – Justification
- Objectives
- Site locations and mappings
- Complete description of the proposed sites
- Collection, analysis and presentation of baseline data
- Identification of significant environmental issues
- Assessment of direct, indirect and cumulative impacts on environment
- Mitigation measures to minimize predicted adverse impacts
- Assessment of public perception about proposed project
- Meeting with the stakeholders and their perception
- Review of the relevant Policies, Legislation and Regulations
- Monitoring plan

- Conclusions

1.5 MAJOR TASKS:

The consultant shall be responsible for undertaking the following tasks in EIA study.

1.5.1 Collection and collation of Secondary Information:

Prior to the start of field activities, available secondary data and reports will be reviewed in detail.

1.5.2 Analysis of Alternative:

Suitable site alternative will be suggested, if required, by the review of relevant maps, available secondary data and legal review.

1.5.3 Location Alternative:

Alternative site will be suggested, if required, by using relevant maps and GPS during area visits.

1.5.4 Management and Operational Alternatives:

Management and operational alternatives will be suggested, if required, by the review of institutional set-ups of departments relevant to the project.

1.5.5 Design Alternatives:

Design alternatives will be suggested, if required, by the review of current design layout.

1.5.6 Review of Relevant Environmental Laws:

The Consultants will carefully review the national/local authority laws, Pakistan Environmental Protection Act 1997, Forest Act 1930, Land Acquisition Act 1874 etc. and international regulations like World Bank Operational Policy, Cites Act etc. for conducting IEE study. This approach will eliminate any chances of the rejection of the project by the concerned EPA due to the consideration of all the concerned laws during the preparation of the EIA Report.

1.5.7 Collection of existing Environmental setting/baseline Data:

Based on the desk study and reconnaissance survey, checklist and questionnaires / Performa's will be prepared for the baseline surveys. Consultants will proceed to the site and the collection of primary data /database on the environmental aspects will be done, which includes the following:

1.5.8 Physical resources:

Physiographic, topography and soils, atmosphere, climate, hydrology, surface water, ground water, geology, seismology etc including environmental monitoring and testing.

1.5.9 Environmental Monitoring:

In case of the absence of updated data, one-time limited environmental monitoring will be conducted in order to assess and analyze the existing level of particulate and gaseous emissions, potable water and liquid from any existing sources lying within the Study Area.

The environmental monitoring and testing will be carried out through EPA approved Environmental Laboratory.

1.5.10 Ecological resources:

Identification of the number of tree species present in the project area, as well as, determination of tree density and area covered by them. Tree counting and their identification along with other vegetation and crops, if any, will be done by making field visits, and by the review of the available literature relevant to the study. Information about the flora and fauna of the area will be collected. Information of the type of the livestock in the area will be noted along with their density.

1.5.11 Socio-economic survey:

Data on social and cultural conditions of the study area will be collected. Determination of the population density in the study area will be done by the review of district census report. The social survey also includes Land acquisition survey (if required) and Identification of vulnerable people/groups i.e. Project Affected People, if any. Data about population density, Infrastructure (electricity, sanitation/ drainage facilities, mode of transportation), health and education status will be collected. Data collection about number of schools and hospitals in the area, if any; no. of graveyards in the area, if any; no. of recreational and commercial areas, if any; availability of utilities; and strata of socio-economic group of people dominant in the area will be kept in focus during baseline study..

1.5.12 Evaluation / Identification of Potential Impacts:

Prediction and assessment of the proposed Project's likely negative impacts during the operational stages will be carried out by conducting the field visits of project and study area. The impacts will be discussed in three sectors with reference to the following parameters:

1.5.13 Physical environment:

Under physical environment, impacts on following areas will be measured.

- **Land resources:** Evaluation of the environmental effects of the project on land use in the immediate vicinity of the project (i.e. within the identified boundaries of the project) will be done, e.g. Agriculture, Archaeological, Historical and Cultural monuments
- **Water resources:** Precipitation, surface water resources, ground water resources.
- **Air quality:** levels of air pollutants like particulate matter, CO and other parameters and their adverse impacts, if any, on the surrounding environment will be determined to evaluate its effects.
- **Noise levels** will be evaluated for the operational phase of the project

1.5.14 Ecological environment:

Impacts on ecological environment may include

- Impacts on fauna of area, livestock and migratory birds (if any)
- Reserved forests, if any.
- Relocation/resettlement issues etc.
- Impacts on flora

1.5.15 Socio-economic Impacts:

- Impacts on livelihood of Project Affected Persons (PAPs) (if any): Questionnaires will be developed and prepared and filled during the field visits to know about the public perception of the study area.
- Impacts on social settings of the project area.
- Relocation/ resettlement issues
- Impacts of the project on local property values and insurance rates will be taken in to consideration.
- Disruption archaeological, historic, religious, and unique natural values in the project area if any

1.5.16 Suggested Mitigation/contingency Measures:

After the identification of the adverse environmental impacts, necessary mitigation measures would be proposed. Mitigation plans will be proposed based on the intensity of each impact. For instance, if the impact is low enough, it may be ignored; if the impact is high, specific mitigation measures will be recommended/suggested and if the impact is medium, it may need some mitigation

measures or simply be monitored/managed properly in order to ensure that it remains within the acceptable limits.

1.5.17 Environmental Management Plan (EMP):

An Environmental Management Plan (EMP) will be developed. EMP will propose a plan of action that will indicate the responsibilities and required measures to minimize the negative environmental effects of the project at different stages.

Under the EMP, institutional set up will be studied and the required enhancement, which is deemed necessary for effective management and monitoring of the environmental activities, will be proposed. The EMP will address the following aspects:

- Organizational structure and responsibilities;
- Mitigation Plan;
- Environmental Monitoring Plan;
- Communication and documentation;
- Training of Staff;
- Environmental Cost;

1.5.18 Stakeholder participation and consultation:

Consultation is required at least during two stages of the EIA process as follows:

- During the process of the EIA Study and report preparation, the public is consulted through meetings, seminars, or workshops. Proponents will hold public meetings and/or open houses in local communities to describe the details of the project and to receive feedback on potential issues, interests or concerns related to the project. Engagement may also include informal discussions with landowners and nearby residents and meetings with community associations, businesses, municipal councils, regional planning agencies, public interest group's communities.
- Once the draft EIA Report has been prepared & submitted then public hearing is required. The consultants shall fully assist the Client in the public hearing, including furnishing the replies/information to the questions/issues raised during the hearing.

1.5.19 Deliverables Consultant:

1. Complete Draft EIA Report featuring all the development sites. The EIA Report shall be completed in respect of baseline data, detail socio and environmental impact assessment, Environmental Management Plan and

Alternatives considered.

2. Final EIA Report to be submitted after receiving comments from Clients.

1.6 Time Duration:

The time duration for completion of whole study is 2 months.

SCOPE OF WORK; Client:

The client has following scope of Work

1. Give all data related to the current and proposed Land use of the sites.
2. Give all the detail maps of the sites.
3. Give coordinates of all the sites
4. Give detail description of the area.
5. Land use Study for the sites.
6. Arrange Stakeholders consultation along with Consultants
7. Submission of EIA Report in EPA and its follow-up until award of NOC.

LUBNA PERVIN (librarian)
librarian.epa 101.53.234.71
21/11/2026 2:53:40 PM
EPA

PROJECT TEAM AND RESPONSIBILITIES

Name of expert	Position held	Highest Qualification	TERM OF REFERENCES
Mr. Shahzaib Ahmed	Social Scientist	M. Phil Development Studies, PIDE, Islamabad.	Mr. Shahzaib would be responsible for: ❖ Detailed social survey of project sites ❖ Social impact assessment
Arslan Iqbal	Environmentalist-2	MPhil Environmental Sciences, UOL	Mr. Arslan would be responsible for: ❖ Biodiversity assessment ❖ Detailed flora fauna survey of project sites ❖ Identification of threaten and endangered species ❖ Project impacts on flora and fauna ❖ Detailed social survey of project sites ❖ Social impact assessment ❖ Consultation with stakeholders
Amna Hafeez	Environmentalist-3	M.Sc. Mountain Conservation and Watershed Management, University of the Punjab	Ms. Amna would be responsible for: ❖ Report writing ❖ Field surveys and consultation with stakeholders ❖ Preparation of Environment monitoring plan ❖ Preparation of technical EMP ❖ Identification of sensitive receptors ❖ Capacity building & training ❖ Conducting and monitoring of health assessment surveys ❖ Environment health risk assessment and management ❖ Detailed survey of project sites

LUBNA PERVIN (librarian) EPA librarian epa 101.53.234.71 21/11/2026 2:53:40 PM

			❖ Environmental Assessment ❖ Social Assessment
Huda Ashfaq	Environmentalist-4	M.Phil. Environmental Science, UVAS, Lahore.	Ms. Huda would be responsible for: ❖ Detailed flora and fauna survey of project sites ❖ Site Monitoring ❖ Socio-Economic survey & analysis ❖ Report Writing
Saba Nazir	Environmentalist-5	M.Phil. Environmental Sciences, UOL	Ms. Saba would be responsible for: ❖ Site Monitoring ❖ Socio-Economic survey & analysis ❖ Risk Assessment (OHS & EMP) ❖ Report writing
Aishah Mushtaq	Environmentalist-6	MS in Environmental Sciences, LCWU	Ms. Aishah would be responsible for: ❖ Environmental Assessment ❖ Report writing

LUBNA PERVIN (librarian) EPA librarian epa 101.53.234.71 21/11/2026 2:20:40 PM