EXECUTIVE SUMMARY 4

TITLE & LOCATION OF THE PROJECT 4
DETAIL OF PROPONENT 7
BRIEF PROJECT DESCRIPTION: 7
THE MAJOR IMPACTS 8
TABLE: SUMMARY OF ENVIRONMENTAL AND SOCIAL IMPACTS OF THE PROJECT DURING THE CONSTRUCTION PHASE AND MITIGATION MEASURES SUGGESTED: 9
TABLE: SUMMARY OF ENVIRONMENTAL IMPACTS OF THE PROJECT DURING THE OPERATION PHASE AND THEIR MITIGATION MEASURES: 12
PROPOSED ENVIRONMENTAL MONITORING 13

J71. INTRODUCTION 15

1.1. PURPOSE OF THE REPORT 15
1.2. IDENTIFICATION OF THE PROJECT AND PROPONENT 15
1.3. DETAILS OF CONSULTANT 16
1.4. BRIEF DESCRIPTION OF NATURE, SIZE AND LOCATION OF PROJECT 17
1.4.1. LOCATION 18

2. DESCRIPTION OF THE PROJECT 20

2.1. TYPE AND CATEGORY OF THE PROJECT: 20
2.2. OBJECTIVES OF THE PROJECT 20
2.3. ALTERNATIVE CONSIDERATIONS AND REASONS FOR THEIR REJECTION: 20
2.3.1. LOCATION ALTERNATIVES: 20
2.4. LOCATION AND SITE LAYOUT OF THE PROJECT: 21
2.5. LAND USE ON SITE 22
2.6. ROAD ACCESS ERROR! BOOKMARK NOT DEFINED.
2.7. VEGETATION FEATURES OF THE PROJECT 22
2.8. COST AND MAGNITUDE OF THE OPERATION 22
2.9. SCHEDULE OF IMPLEMENTATION 22
2.10. DESCRIPTION OF THE PROJECT: 23
2.11. ACTIVITIES OF THE PROJECT ERROR! BOOKMARK NOT DEFINED.
2.11.1 GREY FABRIC RECEIVED AT STORE 25
2.11.2 LOT MAKING 25
2.11.3 DYEING INCLUDING DYES, WASHING, AND BLEACHING 25
2.11.4 INLINE INSPECTION 26
2.11.5 SHADE INSPECTION 26
2.11.6 FINISHING 26
2.11.6.1. STENTER 26
2.11.6.2. COMPACTER 26
2.11.7. QUALITY CHECKING 27
2.11.8. PACKING 27
2.11.9. DISPATCH 27

2.15. WASTE WATER TREATMENT: 29

2.16. SOLID WASTE: 29
2.16.1. SOLID WASTE MANAGEMENT SYSTEM/PRACTICES 29
2.16.2. FLOW CHART OF SOLID WASTE MANAGEMENT PLAN: 30
2.17. PLANTATION 30
2.18. PARKING AREA 30
2.19. FIRE PROTECTION SYSTEM 30
2.20. EMERGENCY EXITS: 30
2.21. PERSONAL PROTECTIVE EQUIPMENT: 31
2.22. POWER SOURCES AND TRANSMISSION: 31
2.23. AVAILABLE FACILITIES 31
2.24. RESTORATION / REHABILITATION PLAN 31
2.25. GOVERNMENT APPROVALS REQUIRED BY THE PROJECT: 31

CHAPTER # 3 32

DESCRIPTION OF THE ENVIRONMENT 32

CHAPTER # 4 37
4. CONSIDERATION OF ALTERNATIVES 37
4.1. SITE ALTERNATIVES: 37
4.2. TECHNOLOGY ALTERNATIVES: 37
4.3. ENVIRONMENTAL ALTERNATIVE 37
4.4. ECONOMIC ALTERNATIVES 38

5. SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & THEIR MITIGATIONMEASURES 39

5.1. ENVIRONMENTAL IMPACTS DUE TO PROJECT LOCATION 39
5.2. MITIGATION MEASURES FOR LOCATION PHASE IMPACTS 39
5.3. ENVIRONMENTAL IMPACTS DUE TO THE PROJECT DESIGN 40
5.4. MITIGATION MEASURES AND RECOMMENDATIONS 41
5.5. ENVIRONMENTAL IMPACTS DURING THE CONSTRUCTION PHASE 41
5.6. MITIGATION MEASURES AND RECOMMENDATIONS 43
5.7. ENVIRONMENTAL IMPACTS DURING OPERATION STAGE 44
5.8. RECOMMENDATIONS 44
5.9. POTENTIAL ENVIRONMENTAL ENHANCEMENT MEASURES 45
5.10. PURPOSE OF MITIGATION MEASURES 45
5.11. WAYS OF ACHIEVING MITIGATION MEASURES 46

CHAPTER # 6 47

6. ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM 47

6.1. PURPOSE AND OBJECTIVES OF THE EMP: 47

6.2. MANAGEMENT APPROACH: 47
6.3. INSTITUTIONAL CAPACITY 47
6.4. TRAINING SCHEDULES 47
SUMMARY OF IMPACTS AND THEIR MITIGATION MEASURES 49
6.7. EQUIPMENT MAINTENANCE DETAIL 52
6.8. ENVIRONMENTAL BUDGET 52

6.9. ENVIRONMENTAL MANAGEMENT PLAN FOR MANUFUCTURING UNIT OF M/S RAHMAN KNITWEARPVT. LTD. 53

CHAPTER # 7 58

7. STAKEHOLDERS PARTICIPATION 58

7.1. OBJECTIVES OF CONSULTATION 58
7.2. METHODOLOGY OF CONSULTATION: 59
7.3. PROPONENT 59
7.4. RESPONSIBLE AUTHORITY 59
7.5. OTHER DEPARTMENTS AND AGENCIES 59
7.6. AFFECTED & WIDER COMMUNITY 59
7.8. ISSUES DISCUSSED: 60
7.9. FINDINGS OF THE OVERALL DISCUSSION: 60

CHAPTER # 8 62

8. CONCLUSION AND RECOMMENDATIONS 62

8.1. CONCLUSIONS 62
8.2. RECOMMENDATIONS 62

EXECUTIVE SUMMARY

Title & Location of the project

The proposed project involves the construction of an apparel and dyeing unit under the name **Rahman Knitwear (proprietorship)**, located at **Plot No. 49/1–M, Quaid-e-Azam Industrial Estate, Kot Lakhpat, Lahore**. The unit will have an **in-house knitting, dyeing, and printing** setup to support efficient and integrated textile manufacturing. The **production capacity** of the unit will be **200,000 meters per month**, with a **total cost** of **PKR 20 million**, covering a **total area of 22,475 square feet**.

This Environmental Impact Assessment (EIA) study has been conducted for the proposed establishment and operation of a modern textile unit that will include **knitting, dyeing, printing, and apparel manufacturing processes**, along with the installation of an Effluent Treatment Plant (ETP) to ensure proper wastewater management.

The proposed project falls under Schedule II (EIA), Category B (Manufacturing and Processing), Clause 6 (Textile units comprising of Dyeing and Printing), and Category F (Water supply, sewerage system and treatment) of the Punjab Environmental Protection (Review of IEE and EIA) Regulations, 2022.

The Terms of Reference (TORs) of the study, developed in accordance with Clause 5(f) of the Policy and Procedure for the Filing, Review and Approval of Environmental Assessments, are attached as Annexure – A

Background of the Project:

The proposed project involves the establishment of a modern textile unit under the name **Rahman Knitwear**, dedicated to the manufacturing and export of knitted apparel. The unit will be located at **Plot No. 49/1–M, Quaid-e-Azam Industrial Estate, Kot Lakhpat, Lahore**, and will cover a total area of **22,475 square feet**.

The project aims to set up an integrated facility comprising **in-house knitting, dyeing, printing, stitching** processes to enhance efficiency and production quality. The proposed unit will have a **production capacity of 200,000 meters per month**, with an estimated investment of **PKR 20 million**.

The site lies within a **designated industrial zone**, thereby requiring no land conversion approval, as the area is already reserved for industrial development. The facility will also

include an **Effluent Treatment Plant (ETP)** and implement **fire safety and utility systems** in compliance with applicable environmental regulations and industry best practices.

This project is envisioned to contribute to the growth of Pakistan's textile sector by introducing a sustainable and efficient production model that ensures environmental compliance and supports export-oriented manufacturing.

Location

Subject proposed project is located at 49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat LahorePakistan. having coordinates:

- 31° 27' 17.07" N
- 74° 19' 36.31" E

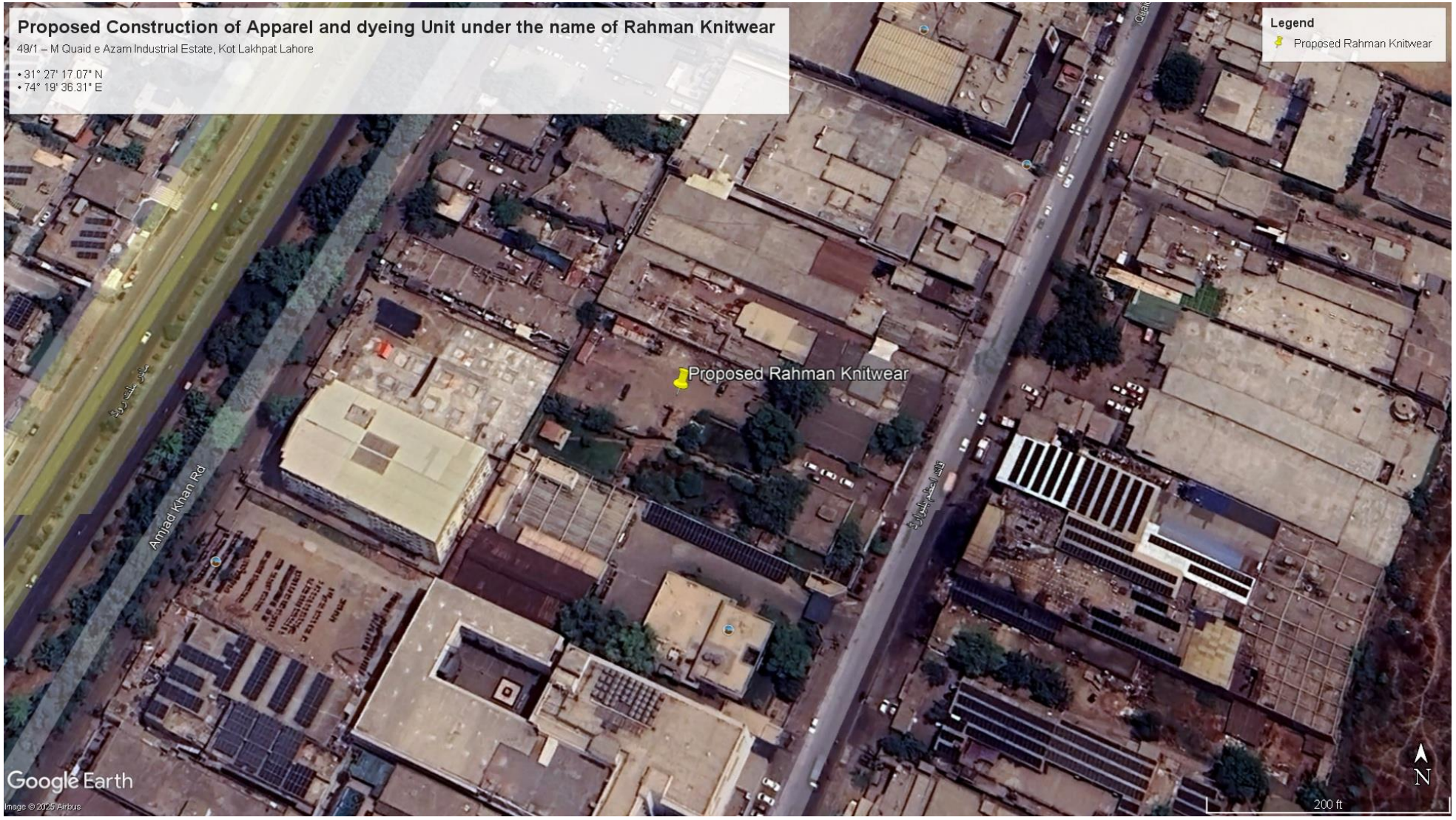
East…….. Open Area

West……... Open Area

North…….. Open Area

South…… Access Road

Google map of site: For further details, layout map and Google earth map of the project is attached as **Annexure**with the report



Detail of Proponent

Name	Zain Rehman
CNIC	0321-4231001
Mailing Address	49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat LahorePakistan.

For further details CNIC of the proponent and other relevant documents are attached as **Annexure-C** with this report.

Brief Project Description:

Name of the project:	Subject project is the proposed capacity enhancement and technology advancement of knitting, textile processing including dyeing, printing, apparel manufacturing and ETP by M/S Rahman Knitwear.
Location of the project:	49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat Lahore
Proposed Area:	The total area of the unit is 22475 Sft
Nature of Project:	Nature of the project is proposed technology advancement and production enhancement that will be commenced after getting the environmental approval.
Cost of the project:	Overall cost of the project will be approx. 20 million rupees.
Project process:	Process will include capacity enhancement and technology advancement of knitting, textile processing including dyeing, printing, apparel manufacturing and ETP.
Raw materials	Cotton, Fabric, Dyes, cutting accessories, machinery and packaging materials.
Production capacity	The proposed production capacity will be enhaced from 200,000 pieces per month by replacing old technology with latest and advance technology. Along with this the ETP will be equipped with the advance technologies like RO plant with multimedia filter, 35% clean return water, Sludge filter press. The waste water treatment plant capacity will be enhanced from 80m^3/hr to 100m^3/hr.
Power Requirement:	2 MW through solar system and other through WAPDA.
Labor/ Workforce:	During installation: 100-200 During Operation: 2500-3300

Water Requirement:	During installation: As the subject project is the proposed capacity enhancement and technology advancement, hence no construction will be done and no water will be required for this purpose. Besides this, water will be required only for domestic purposes at the time of technology advancement and installation. During Operations: As the subject project is in operations before the promulgation of 1997 PEP Act, and for now they are intended to do proposed technology advancement and production enhacement into their operations.
Solid waste:	During the installation phase of the project, only domestic waste will be produced that will be around 0.45kg/capita/day. According to an estimate, about 2tons/day of domestic and project related solid waste will be produced during the operation phase of the project Project related waste will include fabric, threads etc., which will be handed over to the certified contractors.

Pak Green Enviro-Engineering (Pvt.) Ltd, as independent consultants, has been appointed by the proponent to conduct Environmental Impact Assesment (EIA) report.

Company office address: 46-M, Gulberg III, Faisalabad

Contact: 042-35441444, 0303-4442335.

For detail company profile see the Chapter # 1 “Introduction”

Authority letter in the favor of the consultant is attached as **Annexure-C** with the report.

The major impacts

In order to identify all the activities associated with the project during construction and operation phase with potential to cause adverse environmental impacts and harm a thorough review has been conducted. Project will not have any significant adverse impacts on the nearby community and on environment. Overall the project will have positive impacts on the local population and country as a whole.

Table: Summary of Environmental and social impacts of the project during the construction phase and mitigation measures suggested:

Phase	Environmental Aspect	Potential Impact	Mitigation Measures	Responsibility	Monitoring
Installation	**Air Quality**	Dust and emissions from installation activities	Use air pollution control devices Implement dust suppression methods (e.g., water spraying) Utilize low-emission equipment	Project Manager, Environmental Officer	Regular Air quality monitoring
	Noise	Increased noise levels from machinery installation	Limit installation activities to daytime hours Use noise barriers and sound-dampening equipment	Site Manager	Regular Noise level assessment
	Waste Generation	Solid and hazardous waste production	Implement a waste management plan Recycle materials where feasible Ensure proper disposal of hazardous waste	Waste Management Coordinator	Regular Waste audits
	Water Usage	Excessive water consumption	Install water-efficient fixtures Reuse water for Installation processes	Project Manager	Regular water usage reports
	Land Disturbance	Soil erosion and habitat disruption	Minimize land disturbance areas Implement erosion control measures	Site Manager	Regular Environmental inspections

	Health and Safety	Risks to worker safety	Provide safety training and PPE Conduct regular safety audits and drills	Safety Officer	Regular Safety audits
	Regulatory Compliance	Non-compliance with environmental laws	Ensure all necessary government approvals are obtained Maintain compliance with local and national regulations	Compliance Officer	Regular Compliance audits
Operational	**Water Pollution**	Contamination of local water bodies	Operate an efficient Effluent Treatment Plant (ETP) Regularly monitor and maintain ETP systems	ETP Manager	Regular Effluent quality monitoring
	Chemical Use	Risks from hazardous materials	Utilize eco-friendly dyes and chemicals Maintain up-to-date Material Safety Data Sheets (MSDS)	Safety Officer	Regular Chemical inventory audits
	Energy Consumption	Increased greenhouse gas emissions	Implement energy-efficient technologies Schedule regular maintenance for machinery	Operations Manager	Regular Energy consumption audits
	Waste Management	Pollution and health risks	Establish comprehensive recycling programs Train staff on waste minimization practices	Waste Management Coordinator	Regular waste generation reports

	Social Impact	Community disruption and employment issues	Engage with local communities regularly Address community concerns and feedback promptly	Community Liaison Officer	Regular Community feedback sessions
	Biodiversity	Loss of local flora and fauna	Conduct biodiversity assessments Implement habitat restoration and plantation initiatives	Environmental Officer	Biodiversity assessments
	Air Emissions	Deterioration of local air quality	Install and maintain air pollution control devices Implement an emissions monitoring program	Environmental Officer	Regular Emissions monitoring
	Resource Consumption	Unsustainable use of materials	Implement sustainable sourcing practices Promote the use of recycled materials	Operations Manager	Regular Material usage audits
	Environmental Parameter Monitoring	Non-compliance with environmental standards	Regular monitoring of air, water, and noise parameters Report findings to regulatory authorities	Environmental Officer	Regular Monitoring reports

Table: Summary of Environmental impacts of the project during the operation phase and their mitigation measures:

Potential Impact	Criteria for determining Significance	Key Mitigation Measures
Machinery Noise- Working of machinery can be a nuisance for the workers in the working area.	OSHA Standards	PPEs i.e. ear muffs should be provided to workers in case of high noise.
Health & Safety Issues- Health and Safety issues e.g. Cuts and Injuries may be caused during the machinery handling.	OSHA Standards	Proper training of the staff should be conducted to avoid the accidents. First aid measures should be provided at the workplace.
Solid waste management- Improper solid waste management may cause health problems and aesthetic issues	Exposure to potentially hazardous waste; Generation of excessive waste; Recyclable waste and reusable waste is discarded; Improper disposal.	Waste bins should be placed at suitable places. Domestic and process related waste should be handed over to contractors.
Groundwater—The increased withdrawal of groundwater for the project will affect the groundwater resources of the project area	Water extracted for the project can directly affected the ability of the community to meet their water needs	No impact on the community groundwater needs is envisaged as a result of the project.

Proposed Environmental Monitoring

To oversee the environmental performance of the project through its lifecycle enforcing the PEQS an Environmental Monitoring Program should be formulated which ensures effective surveillance of the environmental parameters at various stages of the project development and compliances with PEQS and legal obligations. Monitoring for following Environmental Parameters is recommended:

- **Ambient Air**

  Monitoring for ambient air should be conducted on regular basis during construction and operation phases of the project and report should be submitted to EPA Punjab.

- **Noise**

  Regular monitoring for noise level should be maintained periodically during construction and operation phases of the project and report should be submitted to EPA Punjab.

- **Water quality**

  Regular monitoring of water quality should be conducted on regular basis during construction and operation phases of the project and report should be submitted to EPA Punjab.

Recommendation: Environmental Monitoring data log book should be maintained by the project proponent. Environmental Monitoring reports are attached with this report as Annecure-D

Proposed Environmental Monitoring Program:

Sr. No.	Parameters	Monitoring Schedules During Construction	Monitoring Schedules During Operation	Monitoring Duration
1	Stack Emission Analysis	Quarterly	Quarterly	As per PEQ's
1	Ambient Air Monitoring (NO_x, CO_2, SO_2, PM_{10})	Quarterly	Quarterly	As per PEQ's
2	Noise Level	Quarterly	Quarterly	As per PEQ's
4	Drinking water quality	Quarterly	Quarterly	Some parameters on site Others in lab
5	Waste Water	Quarterly	Quarterly	Some Parameters on Site Others in Lab

CHAPTER # 1

1. INTRODUCTION

This Section of the report provides an overview of the rational of the Project, objective of project, requirement of the project, purpose of the report and approach adopted to conduct the Environmental Impact Assesment (EIA).

1.1. Purpose of the report

Environmental Impact Assesment (EIA) report is being submitted to the Environmental Protection Agency (EPA), Government of the Punjab, Faisalabad for the compliance of Section 12 of Punjab Environment Protection Act-1997 (Amended 2012) for obtaining No Objection Certificate (NOC) before starting the construction activity at the project site. The other relevant regulations and guidelines considered while preparing this EIA report include:

- Policy and procedures for filing, review and approval of environmental assessments.
- Guidelines for the preparation and review of environmental reports.
- Guidelines for public participation.
- Guidelines for sensitive and critical areas.
- Detailed sectoral guidelines

Various aspects like environmental, social, physical and other aspects of the project both during construction and its regular occupancy are highlighted in this EIA report. Measures necessary to be adopted to mitigate any environmental impacts on any part of the environment around are also described. All the important information is also provided as described under the format used to help decision makers, EPA Punjab in the present case, before issuing the desired Environmental Approval.

1.2. Identification of the project and proponent

The proposed project falls under Schedule II (EIA), Category B (Manufacturing and Processing) of Punjab Environmental Protection (Review of IEE and EIA Regulations), 2022. TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as **Annexure – A.**

1.2.1. Proponent:

Name	Zain Rehman
CNIC	35202-4983955-1
Mailing Address	49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat LahorePakistan.

For further details CNIC of the proponent and other relevant documents are attached as **Annexure-C** with this report.

1.3. Details of Consultant

Pak Green Enviro-Engineering (Pvt.) Ltd is an independent company, who conducts IEE, EIA, EMP and other environmental investigations through its panel of environmental consultants, public participation practitioners and experienced environmental managers. The company has its own recommended instruments to check the baseline environmental data/PEQS and lab analysis facility for water, waste water priority parameters.

Contact: Pak Green Enviro-Engineering (Pvt.) Ltd.
Office No. 46 M, Gullberg III, Faisalabad
Tel: 042-35441444, 03034442335
Email: info@pakgreen.pk; pak.green@hotmail.com

The current study was carried out by the following professionals:

Name	Designation/Qualification
Abdul Hafeez Nasir	PhD Scholar Environmental Management
Iftikhar Ahmed	Environmental Specialist
Umair Rasheed	Environmentalist
Muhammad Imran	Environmental Engineer
Azka Mehboob	Environmentalist
Rida Ashfaq	Environmentalist
Muhammad Ahmed	Environmentalist
Akhter Sherazi	Environmentalist

1.4. Brief description of Nature, Size and Location of Project

Subject project for which this Environmental Impact assessment study has been conducted is the proposed construction of Dyeing Unit having ETP (Treatment capacity of up to 1 Cusec) Biomass Steam Boiler (5tons having heating surface of 1600 SQFT), Thermo Oil Boiler (2.5 MKCal having heating Surface of 1200 SQFT) by M/s Rahman Knitwear, located at 49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat LahorePakistan.. The total area of land is 182216.00 SFT. The total covered area is 89403 SFT and open area is 112817 SFT. The production capacity of dyeing unit will be 10 tons per day. The estimated cost of the project is 200 million Pkr.

Name of the project:	Subject project is the proposed capacity enhancement and technology advancement of knitting, textile processing including dyeing, printing, apparel manufacturing and ETP by M/S Rahman Knitwear.
Location of the project:	49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat Lahore
Proposed Area:	The total area of the unit is 22475 Sft (4 Kanals & 2.5 M)
Nature of Project:	Nature of the project is proposed technology advancement and production enhancement that will be commenced after getting the environmental approval.
Cost of the project:	Overall cost of the project will be approx. 20 million rupees.
Project process:	Process will include capacity enhancement and technology advancement of knitting, textile processing including dyeing, printing, apparel manufacturing and ETP.
Raw materials	Cotton, Fabric, Dyes, cutting accessories, machinery and packaging materials.
Production capacity	The proposed production capacity will be enhaced from 200,000 pieces per month by replacing old technology with latest and advance technology. Along with this the ETP will be equipped with the advance technologies like RO plant with multimedia filter, 35% clean return water, Sludge filter press. The waste water treatment plant capacity will be enhanced from 80m^3/hr to 100m^3/hr.

Power Requirement:	2 MW through solar system and other through WAPDA.
Labor/ Workforce:	During installation: 100-200 During Operation: 2500-3300
Water Requirement:	During installation: As the subject project is the proposed capacity enhancement and technology advancement, hence no construction will be done and no water will be required for this purpose. Besides this, water will be required only for domestic purposes at the time of technology advancement and installation. During Operations: As the subject project is in operations before the promulgation of 1997 PEP Act, and for now they are intended to do proposed technology advancement and production enhacement into their operations.
Solid waste:	During the installation phase of the project, only domestic waste will be produced that will be around 0.45kg/capita/day. According to an estimate, about 2tons/day of domestic and project related solid waste will be produced during the operation phase of the project Project related waste will include fabric, threads etc., which will be handed over to the certified contractors.

1.4.1. Location

Subject proposed project is located at 49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat Lahore having coordinates:

- 31° 27' 17.07" N
- 74° 19' 36.31" E

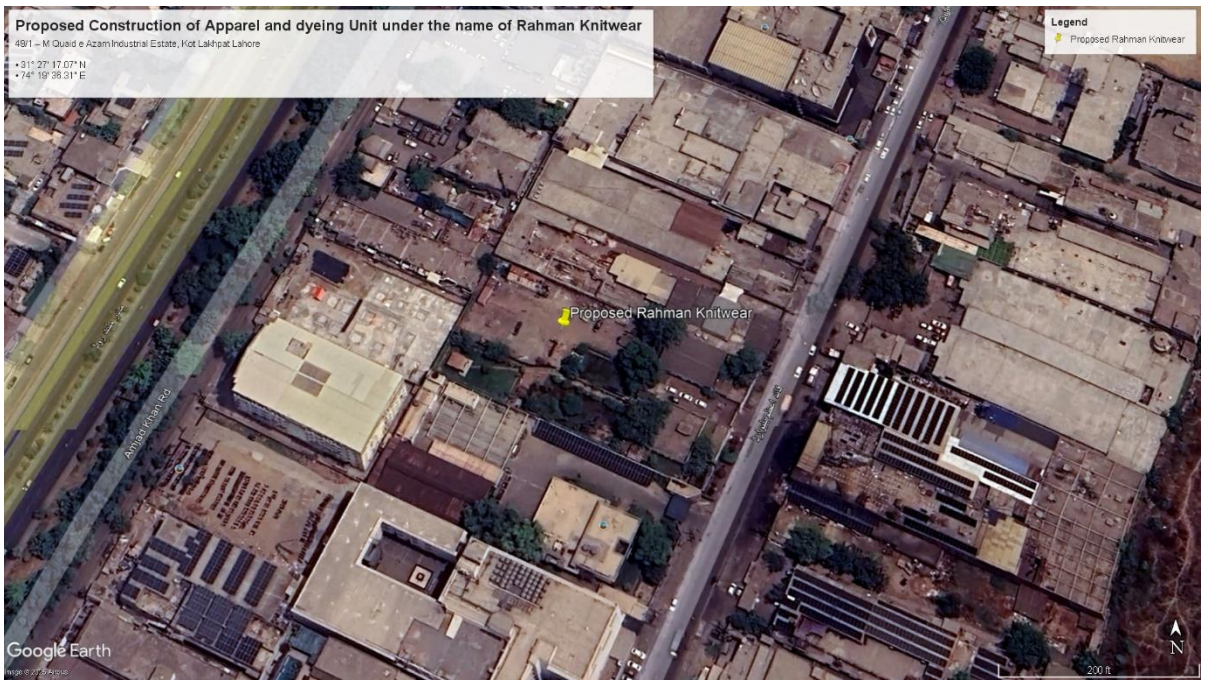
East…….. Open Area

West…….... Open Area

North…….. Open Area

South…… Access Road

Google map of site proposed for the dyeing unit is attached as follows:



For further details, layout map and Google Earth Map of the project is attached as **Annexure**

1.5. Screening

The proposed project falls under Schedule II (EIA), Category B (Manufacturing and Processing) of Punjab Environmental Protection (Review of IEE and EIA Regulations), 2022. TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as **Annexure – A.**

CHAPTER # 2

DESCRIPTION OF THE PROJECT

1.6. Type and Category of the Project:

The proposed project involves the establishment of a textile processing unit under the name Rahman Knitwear, which will include in-house knitting, dyeing, printing, and apparel manufacturing, along with an Effluent Treatment Plant (ETP) to ensure environmental compliance.

The project will be developed at Plot No. 49/1-M, Quaid-e-Azam Industrial Estate, Kot Lakhpat, Lahore, covering a total area of 22,475 sq. ft. The estimated cost of the project is PKR 200 million.

The proposed project falls under the following categories of the Punjab Environmental Protection (Review of IEE and EIA) Regulations, 2022:.

The proposed project falls under Schedule II (EIA), Category B (Manufacturing and Processing) of Punjab Environmental Protection (Review of IEE and EIA Regulations), 2022.

1.7. Objectives of the Project

Objectives of the establishment of the subject project are:

- To meet the increasing market demands of apparel.
- To enhance the business of the proponent.
- Contribution to the national economy.
- Compensate to help poverty by providing employment.

1.8. Alternative Considerations and Reasons for their Rejection:

1.8.1. Location alternatives:

To fulfill the commercial aspects of the project under reference of this EIA Report, it is to be sited at a place where commercial processing activity is either already going on or there are bright prospects of the same. The subject project is of proposed in nature and includes proposed contruction of dyeing unit, it must also meet the legal requirements of the Punjab Environmental Protection Act, 1997 (Amended 2012). Availability of land at the best convenient place is equally important among other considerations for the site selection.

Availability of access roads, communication facilities, electricity, basic infrastructure, sewerage etc. is yet the other necessary requirements.

Obviously, environmentally sound, neat and clean environment are the other considerations for site selection. The project will also facilitate the people of the area with increasing the opportunity of employment, and other related facilities.

Keeping these requirements and their feasibility and other basic infrastructural requirements, the selected site is ideally suited for prposed contruction dyeing unit.

1.9. Location and site layout of the project:

Subject proposed project is located at 49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat LahorePakistan. having coordinates:

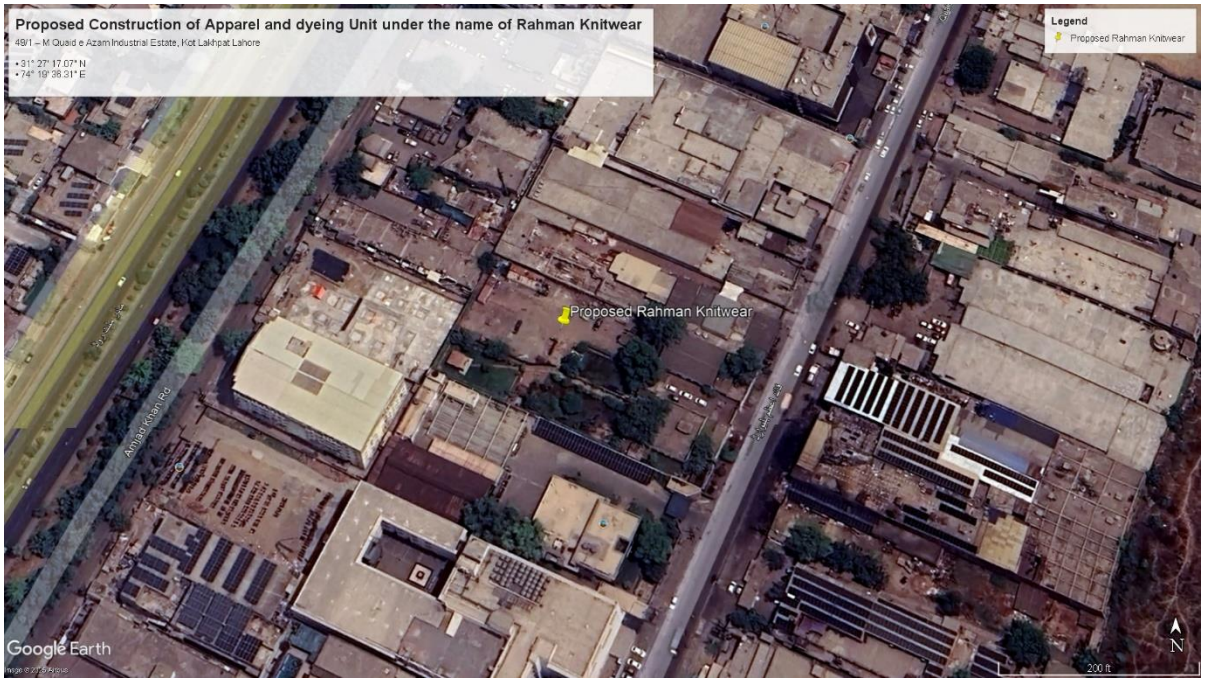
- 31° 27' 17.07" N
- 74° 19' 36.31" E

East…….. Open Area

West…….... Open Area

North…….. Open Area

South…… Access Road



For further details, layout map and google earth map of the project is attached as **Annexure**

1.10. Land Use on site

Site proposed for the subject project by M/s Rahman Knitwear is an empty plot and it is the property of the proponent, reserved by the proponent for the proposed construction of dyeing unit.

1.11. Vegetation features of the project

Land proposed for the subject project is clear and free of dense vegetation, only shrubs like Few and scattered amount of vegetation will help to avoid land clearing at the project site.

1.12. Cost and magnitude of the operation

The proposed project by **Rahman Knitwear** entails the construction and operation of a modern textile unit focused on **in-house knitting, dyeing, printing, and apparel manufacturing**, equipped with an **Effluent Treatment Plant (ETP)** to manage industrial wastewater in compliance with environmental regulations.

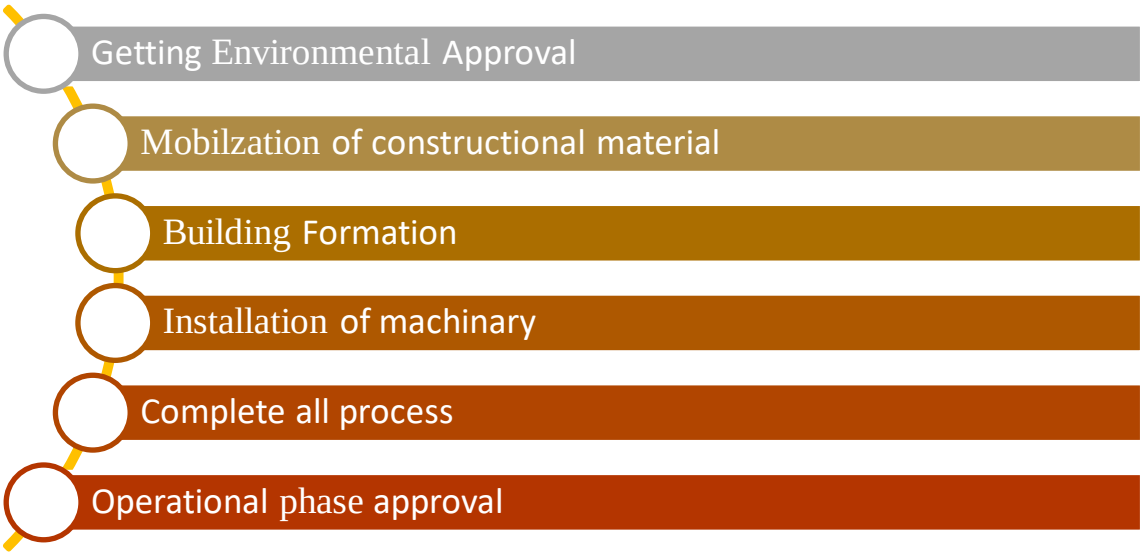
The **total estimated cost** of the project is approximately **PKR 200 million**, which includes civil works, machinery installation, utility setup, and environmental management systems such as the ETP.

The unit will be established over a total land area of **22,475 sq. ft.** and will be designed to handle a **production capacity of 200,000 meters of knitted fabric per month**.

This scale of operation places the project in the **medium industrial category**, contributing significantly to textile processing and value addition in the region. The integration of advanced machinery and environmental controls reflects the proponent's commitment to **sustainable and efficient manufacturing** practices in alignment with both national and provincial regulatory frameworks.

1.13. Schedule of Implementation

Detailed feasibility studies and designing of the project have been completed. Necessary legal, administrative and financial formalities are being finalized. The project is expected to be completed within 10-12 months from the date of environmental approval. Subsequently the operational and maintenance aspects of the project will be undertaken by the proponent.



1.14. Description of the project:

The proposed project involves the **establishment of a textile processing unit** under the name **Rahman Knitwear**, located at **Plot No. 49/1-M, Quaid-e-Azam Industrial Estate, Kot Lakhpat, Lahore**. The project aims to set up a **vertically integrated facility** that includes **knitting, dyeing, printing** of knitted fabrics and garments for local and international markets.

The total land area allocated for the project is **22,475 square feet** (approximately **4 kanal and 2.5 marla**). The facility will be equipped with **state-of-the-art machinery** and will include essential infrastructure such as:

- **Dyeing section** for knitted fabric with a production capacity of **200,000 meters per month**
- **Effluent Treatment Plant (ETP)** to treat industrial wastewater before disposal or reuse
- **Fire safety systems**, in compliance with regulatory standards
- **Utility rooms** for power supply, steam generation, and process water management
- **Storage and packing areas**, alongside administrative offices and worker amenities

The estimated cost of the project is **PKR 200 million**, which covers land development, civil construction, machinery procurement, utilities, and environmental safeguards. The proposed development will be executed in accordance with national environmental standards and local building codes, ensuring **sustainable operations and minimal environmental impact**.

This project falls under **Schedule II of the Punjab Environmental Protection (Review of IEE and EIA) Regulations, 2022**, requiring a detailed **Environmental Impact Assessment (EIA)** due to the inclusion of wet processes like dyeing and printing, and the setup of an on-site wastewater treatment system.

The project is expected to play a significant role in enhancing the region's textile production capacity while promoting **green industrial practices** and contributing to **Pakistan's textile export sector**.

Name of the project:	Subject project is the proposed capacity enhancement and technology advancement of knitting, textile processing including dyeing, printing, apparel manufacturing and ETP by M/S Rahman Knitwear.
Location of the project:	49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat Lahore
Proposed Area:	The total area of the unit is 22475 Sft (4 Kanals & 2.5 M)
Nature of Project:	Nature of the project is proposed technology advancement and production enhancement that will be commenced after getting the environmental approval.
Cost of the project:	Overall cost of the project will be approx. 20 million rupees.
Project process:	Process will include capacity enhancement and technology advancement of knitting, textile processing including dyeing, printing, apparel manufacturing and ETP.
Raw materials	Cotton, Fabric, Dyes, cutting accessories, machinery and packaging materials.
Production capacity	The proposed production capacity will be enhaced from 200,000 pieces per month by replacing old technology with latest and advance technology. Along with this the ETP will be equipped with the advance technologies like RO plant with multimedia filter, 35% clean return water, Sludge filter press. The waste water treatment plant capacity will be enhanced from 80m^3/hr to 100m^3/hr.
Power Requirement:	2 MW through solar system and other through WAPDA.
Labor/ Workforce:	During installation: 100-200

	During Operation: 2500-3300
Water Requirement:	During installation: As the subject project is the proposed capacity enhancement and technology advancement, hence no construction will be done and no water will be required for this purpose. Besides this, water will be required only for domestic purposes at the time of technology advancement and installation. During Operations: As the subject project is in operations before the promulgation of 1997 PEP Act, and for now they are intended to do proposed technology advancement and production enhacement into their operations.
Solid waste:	During the installation phase of the project, only domestic waste will be produced that will be around 0.45kg/capita/day. According to an estimate, about 2tons/day of domestic and project related solid waste will be produced during the operation phase of the project Project related waste will include fabric, threads etc., which will be handed over to the certified contractors.

2.11.1 Grey Fabric Received at Store

Upon arrival at the store, grey fabric is checked for any damage or defects and cataloged into inventory. This fabric, which is in its raw, unprocessed state, is stored in a clean, dry environment to preserve its quality until it is ready for the dyeing and finishing processes.

2.11.2 Lot Making

Lot making involves grouping the grey fabric into batches or lots based on factors such as fabric type, weight, or intended end-use. This step ensures uniformity during processing and simplifies the management of dyeing and finishing operations.

2.11.3 Dyeing Including Dyes, Washing, and Bleaching

In the dyeing phase, the fabric is treated with dyes to achieve the desired color. This process often involves several steps:

- **Dyes**: Different types of dyes (reactive, direct, vat, etc.) are chosen based on the fabric composition and the required color.
- **Washing**: After dyeing, the fabric is washed to remove any excess dye and chemicals, ensuring color fastness and fabric cleanliness.
- **Bleaching**: If needed, bleaching is performed to lighten the fabric or prepare it for subsequent dyeing processes.

2.11.4 Inline Inspection

During the dyeing and finishing processes, inline inspection involves continuous monitoring of the fabric to identify and address any defects or inconsistencies in real-time. This ensures that issues are caught early and corrective actions are taken promptly.

2.11.5 Shade Inspection

Shade inspection involves checking the fabric to ensure the color is consistent across the entire batch. This step verifies that the dyeing process has achieved the desired shade and that there are no significant color variations.

2.11.6 Finishing

The finishing process enhances the fabric's appearance, texture, and performance. It may include various treatments such as calendaring (smoothing), mercerizing (improving luster and strength), and applying coatings or finishes to add properties like water resistance or softness.

2.11.6.1. Stenter

The stenter is a machine used to heat-set the fabric and ensure it maintains its shape and dimensions. The fabric is stretched and held in place while being heated, which helps to stabilize its size and improve its surface appearance.

2.11.6.2.Compacter

A compacter is used to shrink and stabilize the fabric, reducing its potential for further shrinkage after production. This process ensures that the fabric maintains its dimensions and quality during subsequent use and laundering.

2.11.7. Quality Checking

Quality checking involves a thorough inspection of the finished fabric to ensure it meets all required standards and specifications. This includes checking for defects, color consistency, and adherence to dimensional requirements.

2.11.8. Packing

Once the fabric passes quality checks, it is prepared for packing. This involves carefully folding or rolling the fabric and packaging it in protective materials to prevent damage during transportation and storage.

2.11.9. Dispatch

The final step is dispatching the fabric to its destination. This involves organizing and sending the packed fabric to customers or distribution centers. Proper documentation and logistics are handled to ensure timely and accurate delivery.

Note: The process flow diagram is attached herewith as Annexure-E

2.12. LIST OF MACHINERY:

- Dyeing Machines
- Hydro
- Slit/Washing
- Stanter Machine
- Compactor
- Tumble Dryer
- Steam Boiler
- Thermo Oil Boiler
- Compressor
- R/O Plant
- Effluent Treatment Plant
- Folding Machine

2.13. DESCRIPTION OF EFFLUENT TREATMENT PLANT ETP

M/s Rahman KnitwearPvt. Ltd.'s Effluent Treatment Plant (ETP) has a treatment capacity of up to 1 Cusec. It will adopt advance treatment processes to effectively treat

industrial wastewater, removing contaminants like dyes and chemicals. The ETP ensures compliance with environmental standards and reflects the company's commitment to sustainability.

2.13.1. Balancing Tank

The balancing tank temporarily stores incoming dyeing effluents, to even out flow fluctuations and stabilize the treatment process. It facilitates preliminary settling of larger particles and allows for initial pH adjustments, ensuring consistent and efficient downstream processing.

2.13.2. Aeration Tank

In the aeration tank, wastewater undergoes biological treatment where aerobic microorganisms break down organic pollutants and dye residues. Oxygen is supplied to support microbial activity, reducing the wastewater's biochemical oxygen demand (BOD) and color intensity, and preparing it for further treatment.

2.13.3. Clarifier

The clarifier separates the treated wastewater from suspended solids and biological flocs by allowing them to settle out by gravity. The resulting clearer liquid is then sent to the next treatment stage, while the accumulated sludge is collected for further processing in the sludge holding pits.

2.13.4. Sludge Holding Pits

Sludge holding pits store the concentrated sludge from the clarifier, which includes residual dye particles and biological material. These pits provide space for temporary accumulation before the sludge is subjected to further treatment or disposal, aiding in effective sludge management.

2.13.5. Settling Tank

The settling tank provides additional clarification by allowing any remaining fine solids or particulates in the wastewater to settle out. This step ensures that the effluent is further purified and meets quality standards before moving to the final treatment or disposal stages.

2.13.6. RO Plant (Recycling)

The Reverse Osmosis (RO) plant uses high pressure to force treated wastewater through a semi-permeable membrane, removing dissolved solids and contaminants, including dye residues. The result is high-quality recycled water that can be reused, helping to minimize environmental impact and conserve water resources.

2.14. Water requirements:

During the construction phase of the project estimated 100 cubic meter/day of water will be required for constructional and domestic purposes while during the operational phase of the project, according to an estimate 1500 cubic meter per day will be used. Ground water will be used as a source of water to fulfill the water requirements during the construction and operation phases of the project.

2.15. Waste water treatment:

60-70% of the used water for domestic purposes will be the waste water which will be produced during the operation phase of the project. The generated wastewater will be treated in treatment facility (Septic Tank) of unit. Water after treatment will be disposed of in the nearby drain, For industrial wastewater, effluent treatment plant of capacity of up to 1 cusec will be installed inside the unit premises to treat the waste water before the final disposal.

2.16. Solid waste:

During the construction phase of the project, 120 kg/day construction and domestic waste will be produced. Constructional waste will be recycled during the constructional activities for road filling and maintenance purposes. According to an estimate, 40-50 kg/day domestic and project related solid waste will be produced during the operation phase of the project (based on solid waste generation rates of 0.45 kg/capita/day urban waste generation). Project related waste will include fabric, threads, packaging materials etc., which will be handed over to the certified contractors.

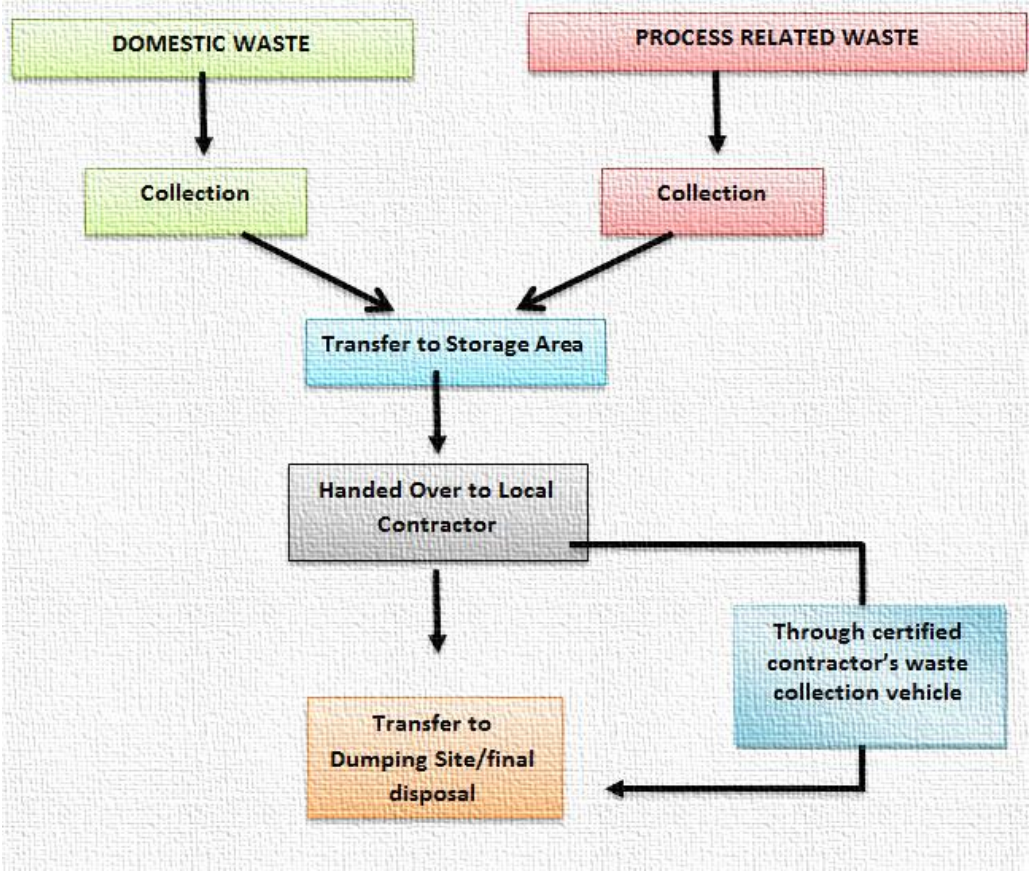
2.16.1.Solid waste management system/practices

The Solid waste will be managed in proper way by following operations:

1. Placement of separate waste bins for domestic and project related waste in all working halls and designated points.
2. Collection of waste from all the working halls at one designated point by the sanitary workers on daily basis.

3. Collected waste will be handed over to the solid waste contractors for its final disposal, from this point.

2.16.2.Flow chart of solid waste management plan:



2.17. Plantation

Area for plantation has been reserved within the premises of the project and plantation will be done within, outside and at the boundary wall of the unit.

2.18. Parking Area

Parking area has made available within the unit for cars, motorcycles, trucks etc.

2.19. Fire Protection System

An addressable fire protection system with detection and alarm annunciation and other installations etc. is provided to protect against any fire hazards. Fire buckets and fire extinguishers will be installed at all sensitive places within the unit.

2.20. Emergency Exits:

Emergency exit points is made available for easy evacuation in case of any emergency.

2.21. Personal protective equipment:

Workers will be provided with Gloves, Masks & other personal protective equipment during the working hours to ensure personnel health & safety. Implementation of PPEs will be ensured by the proponent for the proposed project also.

2.22. Power sources and transmission:

The power requirements will be fulfilled by WAPDA. However, a diesel fired stand by generator (if needed) will also be used for emergency situations only.

2.23. Available Facilities

Available facilities at the proposed project site include:

- Electric supply from WAPDA
- Solid Management (SWM), Water supply, sewerage disposal and drainage systems
- Line and cellular telephone facilities

2.24. Restoration / Rehabilitation Plan

All possible precautions will be taken to prevent an untoward incident in terms of life and property losses. The demolition materials will possibly be reused and recycled. All excavated surfaces will be termite proofed.

One completion of the project, the debris will be removed from the site in order to maintain aesthetics of the project. All measures will be undertaken for ensuring occupational safety, security and clean environment in the project area. Ornamental trees and flower plants will be planted on inside peripheral of the unit premises to restore the land.

2.25. Government approvals required by the project:

All the other relevant approvals obtained from other government departments are attached here with as **Annexure-C.**

CHAPTER # 3

DESCRIPTION OF THE ENVIRONMENT

3.1 Physical Environment/Resources

3.1.1 **Topography**

The project site is located at **Main Chiniot Road, 8-km Jhang, Punjab, Pakistan**. The area is characterized by flat terrain with gentle slopes suitable for construction. This topography supports drainage and prevents waterlogging, making it ideal for poultry farming.

3.1.2 **Soil**

The soil at the site is classified as **alluvial**, primarily composed of silt and clay. It is fertile and capable of supporting vegetation, which is beneficial for plantation activities proposed as part of the project's environmental enhancement plan.

3.1.3 **Climate and Meteorology**

The region experiences a **subtropical semi-arid climate** with distinct summer and winter seasons. The climatic conditions are summarized below:

Parameter	**Details**
Temperature Range	5°C (winter) to 45°C (summer)
Rainfall	200-300 mm annually
Humidity	40-60%

These climatic conditions are conducive to poultry farming, with controlled indoor environments mitigating extreme temperatures.

3.1.4 **Wind**

The region experiences moderate wind speeds with predominant winds blowing from the **northwest** during summer and **southeast** during winter.

3.1.5 **Wind Speed in the Project Area**

The average wind speed ranges from **5 to 12 km/h**, providing sufficient natural ventilation, further enhanced by the environmental control system installed in the poultry sheds.

3.1.6 **Ambient Air Quality**

Ambient air quality monitoring near the project site shows compliance with National Environmental Quality Standards (NEQS). Parameters recorded are:

Parameter	Concentration	NEQS Limit
PM10	45 µg/m³	150 µg/m³
SO2	12 ppb	120 ppb
NO2	10 ppb	80 ppb

3.1.7 **Noise Level Monitoring**

Noise levels were measured during daytime and nighttime, with results shown below:

Location	Day (dB)	Night (dB)	NEQS Limit
Project Site	50	40	55/45
Nearby Residential	45	35	55/45

3.1.8 **Basic Environmental Conditions**

The area has minimal industrial activity, resulting in a clean and low-pollution environment suitable for poultry farming.

3.1.9 **Meteorological Conditions**

Data on temperature, humidity, and rainfall was collected from the nearest meteorological station in Jhang. Seasonal variations were taken into account for project planning.

3.1.10 **Monitoring Instrument**

Monitoring was conducted using:

- **Air Quality Monitor (AQM-500)**
- **Sound Level Meter (SLM-100)**
- **Portable Anemometer**

3.1.11 **Methodology Adopted**

The methodology included:

1. Selection of sampling locations.

2. Collection of data using calibrated instruments.
3. Comparison of results with NEQS.

3.1.12 **Groundwater**

Groundwater at the site is available at a depth of 50-60 feet. It is the primary source of water for the project. Water quality tests indicate:

Parameter	**Result**	**NEQS Limit**
pH	7.2	6.5-8.5
Total Dissolved Solids (TDS)	450 mg/L	1000 mg/L

3.2 Ecological Resources

3.2.1 **Flora**

The site and its surroundings are dominated by native plant species such as:

- Neem (*Azadirachta indica*)
- Kikar (*Acacia nilotica*)
- Grasses and shrubs

3.2.2 **Fauna**

Common wildlife in the area includes:

- **Birds:** Sparrows, crows, and pigeons.
- **Mammals:** Rodents and small mammals.
- **Reptiles:** Lizards and snakes.

No endangered or protected species were observed in the project area.

3.3 Socioeconomic Environment

3.3.1 **Demographic Characteristics of the Project Area**

The project area is inhabited by approximately **5,000 people**, with agriculture being the primary occupation.

3.3.2 **Religion**

The population is predominantly Muslim (98%), with small minorities of other religions.

3.3.3 **Education**

The literacy rate in the project area is **65%**, with access to primary and secondary schools.

3.3.4 Health Facilities

Healthcare facilities include:

- **Basic Health Unit (BHU):** Located 5 km from the site.
- **Private Clinics:** Several within 8 km.

3.3.5 **Quality of Life Values**

Residents have access to basic amenities such as electricity, clean drinking water, and transportation.

3.3.6 **Civic Amenities**

- **Electricity:** Provided by WAPDA.
- **Roads:** Well-maintained with year-round accessibility.
- **Markets:** Located within 10 km.

3.3.7 **Games**

Popular recreational activities include cricket and football.

3.3.8 **Welfare of Employees**

The project will provide:

1. Proper wages as per labor laws.
2. Health insurance and safety training for workers.

3.3.9 **Historical Buildings Near the Project Site**

No significant historical buildings or archaeological sites were identified near the project location.

3.3.10 **Aesthetic Values**

The project incorporates plantation and landscaping to enhance visual appeal and environmental quality.

Summary of Environmental Features

Feature	Details
Topography	Flat, suitable for farming
Soil	Fertile, alluvial
Air Quality	Within NEQS limits
Noise Levels	Below NEQS limits
Groundwater Depth	50-60 feet
Flora and Fauna	Native species, no endangerment
Socioeconomic Conditions	Predominantly agricultural

This comprehensive environmental analysis ensures the project's sustainability and alignment with local ecological and social conditions.

CHAPTER # 4

4. CONSIDERATION OF ALTERNATIVES

4.1. Site alternatives:

To fulfill the commercial aspects of the project under reference of this EIA Report, it is to be sited at a place where commercial processing activity is either already going on or there are bright prospects of the same. Concurrently, it must also meet the legal requirements of the Punjab Environmental Protection Act, 1997 (Amended 2012). Availability of land at the best convenient place is equally important among other considerations for the site selection. Availability of access roads, communication facilities, electricity, basic infrastructure, sewerage etc. is yet the other necessary requirements.

Obviously, environmentally sound, neat and clean environment are the other considerations for site selection. The project will also facilitate the people of the area with increasing the opportunity of employment, and other related facilities.

Keeping these requirements and their feasibility and other basic infrastructural requirements, the selected site is ideally suited. Along with this, no other site is considered as alternative site, because the management is intended to initiate this project inside the existing unit of M/s Rahman KnitwearPvt. Ltd.

4.2. Technology Alternatives:

The proposed development will be constructed using modern, locally and internationally accepted technology and materials to achieve public health, safety, security and environmental aesthetic requirements. Equipment that saves energy will be given first priority without compromising on cost or availability factors.

M/s Rahman Knitwear Pvt. Ltd is an Environmental conscious company which intends to use modern and state of art machinery with minimum impacts on Environment.

4.3. Environmental alternative

The project is located in the outskirt of Faisalabad District. The site is located in an Industrial Area. Various industries have already been constructed on the industrial estate that are complying with the PEQS standards by installing various pollution controls devices. Establishment/ installation of this project in this area will have minimal impact on the daily life people living in Faisalabad. The project proponent is recommended to make sure the regular

maintenance of ETP during the project operations to keep the effluent within the PEQS limits. The Proponent has ensured that regular maintenance will be done to control water pollution impact. Also, the proponent ensured that project vehicles related to dyeing unit operation will be maintained so they don't cause any vehicular emissions.

4.4. Economic Alternatives

The project proponent intends to do proposed construction of Dyeing Unit having ETP, Thermo Oil Boiler, Biomass Steam Boiler. The establishment of this project will lead to the project towards sustainability as the project will not release any untreated wastewater into the drains. This will improve the project brand in the international market and attract international investment.

This project will provide employment during construction phase and managerial staff at operation phase as laborer's workers and managerial staff. This project will accelerate the economic development of the district Faisalabad and in turn Pakistan.

CHAPTER # 5

5. SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & THEIR MITIGATIONMEASURES

5.1. Environmental Impacts due to project location

Project is present in the industrial area of the District Faisalabad. No nearby human settlement exists within the radius of 500 meter. The site does not fall in the category of sensitive area and no environmentally sensitive localities exist within radius of study area. The only issue which can arise due to the location of the subject project could be the issue of traffic congestion due to transportation of the construction material at the project site. If the project proponent maintain HSE conditions and comply with the PEQS limits than, there will not be any significant impacts of the project on the environment.

If the mitigation measures are effectively implemented, the residual impact of the Subject project activities on the area's geophysical environment is expected to be insignificant.

Impact significance: Low or may be positive

Nature of impact: Direct

Duration: Long-term

Timing: construction phase

Reversibility: NA

Likelihood: Low (unlikely),

Consequences: Mild or may be positive

5.2. Mitigation Measures for location phase impacts

- Project site should have good road infrastructure and efficient road infrastructure already exists there that is used currently to access the site and there is no issue of the road congestion due to the wide, good and paved road named Judge wala Road Faisalabad.
- Location can be considered as the positive impacts due to utilization of the product in the same District.
- The project will provide the jobs to the local residents as well as to those from the suburban areas.

5.3. Environmental Impacts due to the project design

Subject project for which this Environmental Impact Assessment study has been conducted is proposed construction of Dyeing Unit having ETP, Biomass Steam Boiler, Thermo Oil Boiler under the name of M/s Rahman KnitwearPvt. Ltd. at 49/1 – M Quaid e Azam Industrial Estate, Kot Lakhpat LahorePakistan..

Firefighting plan, health & safety plan, tree plantation plan, emergency response plan will be incorporated during the design phase of the project. The subject project will consist of;

- Office building
- Fabric Store
- Cutting area
- Stitiching Area
- Washing area
- Finsihing area
- Packaging area
- Quality Assurance office
- Separate water storage taken for the firefighting and domestic purposes
- Firefighting instrument room
- Parking area

Following are the major Environmental impacts due to the development related to the design:

- Structural stability of the proposed project.
- Soil structure and soil bearing capacity
- Road infrastructure design
- Emergency exit in the proposed project
- Firefighting system
- Rain water harvesting capacity of the drainage system
- Electricity hazards

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: Constructional phase & Operation phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

5.4. Mitigation measures and recommendations

Following are the mitigation measures and recommendations to minimize the anticipated impacts:

- Emergency exist points should be marked within the project building.
- Firefighting system should be designed for the emergency situations.
- Electricity system should be design safe and sound.
- Electricity wires should be covered by thick plastic/electricity resistant covers.

5.5. Environmental Impacts during the construction phase

Impacts related to the construction phase of the subject project are discussed below:

- **Grubbing and stripping**

Grubbing and stripping may be a minor and short term impact on the physical environment during the construction phase. It may also be a health and safety hazard for the people at or near the project site.

- **Leveling and compaction of the land**

Leveling and compaction of the land is also a short term and minor impact on the physical environment and it may also be a health and safety hazard for the workers.

- **Demarcation of project building and other facilities**

It may also be a minor impact on the physical environment due to the subject project.

- **Generation of dust during loading and unloading of construction materials**

It is also a minor and short term impact on the physical environment and also for health and safety, which may arise during the construction phase.

- **Generation of noise on account of vehicular use and construction activities**

It is also a minor and short term impact on the physical environment and also for health and safety, which may arise during the construction phase.

- **Gaseous emission due to the vehicles and stand by generator (if any)**

It may also be a minor impact on the physical environment during the construction phase, if vehicles and generators are not properly tuned.

- **Local flooding due to over-use of water and leakage of pipes**

It may be a minor and short-term impact on the physical environment if precautionary measures have not been taken.

- **Safety of construction workers, people in the surroundings and passersby**

Health and safety issues may arise during the construction phase if proper precautionary measures will not be taken.

- **Any outbreak of fire due to electrical and other failures**

This issue may arise due to carelessness or improper management, and it may be a serious hazard which may affect the environment or may also cause the loss of property or life.

- **Solid waste generation due to domestic and construction activities**

Solid waste generation due to domestic and construction activities may be a negative impact on environment if not managed properly.

- **Wastewater generation from the domestic and constructional activities**

Wastewater generation due to domestic and construction activities may be a negative impact on environment if proper wastewater treatment and management system will not be implemented.

- **Ground water quality**

Ground water quality may be affected by the development if proper mitigation measures will not be implemented.

- **Impacts on Fauna and Flora**

Construction will impact the flora/ vegetative cover and fauna present at the project site.

- **Security threat**

Security issue is a major socioeconomic impact which may arose during the construction phase.

- **Impact on land value**

Construction of the subject project may cause positive or negative impact on the land value.

- **Dislocation of the people**

Construction of the subject project may cause the dislocation of the local people if any, which is a negative impact on the socioeconomic environment.

- **Loss of public and private infrastructure**

Construction of the subject project may cause loss of public and private infrastructure if any, which is also a negative impact on the socioeconomic environment.

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Short Term

Timing: Construction phase

Reversibility: NA

Likelihood: moderate

Consequences: moderate

5.6. Mitigation Measures and Recommendations

- Precautionary measures should be adopted to save the environment from the impacts of grubbing, stripping, leveling and compaction and health and safety of workers should be ensured during the construction phase.
- Demarcation of the project building and other facilities should be according to the laws and regulations.
- Sprinkling of water on dusty tracks is recommended to avoid the generation of dust on dusty tracks.
- Vehicles should be properly tuned to reduce the impacts of dust and noise.
- Mitigation measures should be taken to meet the PEQS at the stack of generators.
- Proper mitigation measures should be taken to reduce the noise generation during the construction activities.
- PPEs i.e. ear muffs, helmets and masks etc. should be provided to workers to ensure their health and safety during the construction activities.
- Precautionary measures should be taken to reduce the local flooding due to over-use or leakage of pipes.
- Health and safety of construction workers, people in the surroundings and passersby must be ensured.
- Precautionary measures should be taken to avoid any outbreak of fire due to electrical and other failures.
- Constructional waste should be used for landfilling purposes.
- Domestic solid waste should be kept in dust bins and should be handed over to local contractors.
- Add more vegetation to restore the land by more plantations.
- Essential services like water supply, sewerage disposal and solid waste management must be in working condition.
- Construction timings should be scheduled to cause minimum disturbance to neighbors.
- Because of presence of security guards round the clock the security at the project site will be improved as well as in its vicinity. Impact will be moderate positive.
- Land value in the surrounding area will increase due to completion of the present project. Impact will be moderate positive.
- The project does not involve dislocation of the people. There is no requirement of resettling a single person. Impact is nil.

- No movable or immovable property and infrastructure of public and private sectors will be lost or damaged during construction and operation stages. Impact will be nil.

5.7. Environmental Impacts during Operation Stage

Main environmental issues associated with Project operation are as follows.

- Health and safety issues for workers may arise during the project process e.g. Particulate matter may be generated during the cutting of the fabric, which may cause the health issues for the workers and noise of machinery can also be a negative impact on the health of workers.
- Waste water due to domestic and process activities.
- Fire due to short circuits and other activities.
- Solid waste generation due to domestic and project related activities.
- Noise pollution from generator and other machinery.
- Health hazards including the electricity hazards.
- Vehicle access is required especially for transportation. The site is well served with the road network. Heavy traffic will be allowed only during night time during operational phase. The traffic issues at any stage of project life cycle will not arise.

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: operational phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

5.8. Recommendations

- Safety of workers should be ensured through proper training and PPEs must be ensured during the working hours.
- A well design firefighting system will be constructed to cope with fire situations in the subject project.
- Solid waste bins should be installed at designated processes and Installed Solid waste bins should regularly cleaned and solid waste must be handed over to the EPA Approved contractor.
- Noise levels should not exceed the PEQS.

- Project proponent should submit all the monitoring report in the EPA Punjab Office for the compliance of the PEQS.

5.9. Potential Environmental Enhancement Measures

The proposed project will be installed with all precautionary measures to enhance and safe the environment. Following necessary measures will be adopted during construction and operation:

- Sprinkling of water will be done on dusty roads and tracks.
- PPEs will be provided during construction activity.
- Constructional waste and domestic solid waste will be disposed-off or utilized properly.
- Local people will be informed in advance when work is about to start in an area.
- Machinery will never be left unattended.
- Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Transporters engaged for the project would be forced to adhere to the load specifications of the access road. No overloading would be allowed in any case.
- Safety signs and boards will be placed during construction.
- Air pollution controlling devices must be installed within the project during operation.
- Machinery will be kept maintained.
- Waste water will be treated in the effluent treatment plant before the final disposal.
- Proper SOPs will be followed with proper schedule along with the HSE conditions.
- Area will be restored with native plants. A proper tree plantation plan will be formulated to save the environment.
- Solid waste will be handed over to contractors and agreement will be made.
- Noise will be controlled by adopting proper measures.
- PPEs will be provided to workers during working.
- Firefighting equipment's and system will be installed.
- Safety signs will be placed at all locations where required.
- Hygienic conditions will be ensured and proper quality will be maintained by quality control testing.
- First aid facilities will be made available.

5.10. Purpose of Mitigation measures

Purpose of mitigation measures should include:

- What is the problem i.e. in terms of "major environmental impacts" which may arise by the subject project activity?
- When the problem will occur and when it should be addressed?
- Where the problem should be addressed?
- And how the problem should be addressed?

The major impacts may arise by the subject project, particulate matter, dust, noise, odor and solid waste. Other impacts are of minor importance. These impacts will arise during construction and operation but precautionary measures will be adopted prior to start the activity, during the activity and post activity.

Any impact that would arise due to the subject project activity will be addressed on site. Trainings will be conducted onsite prior to start work while other precautionary measures will also be adopted to make the project safe and environmental friendly.

HSE manager/environmental manager along with site manager will be appointed to assess any impact that could be arisen during both phases. He would be responsible to address the problem and to mitigate it.

5.11. Ways of achieving mitigation measures

By adopting proper mitigation measures, any anticipated major or minor environmental impacts could be controlled or mitigated. The details of impacts and mitigation measures have been discussed in previous chapters.

Management of M/s Rahman Knitwear Pvt. Ltd. shall take appropriate measures to provide pollution free and safe environment during the proposed project activity by implementing improved management practices and monitoring techniques suggested in EMP.

M/s Rahman Knitwear Pvt. Ltd. will adopt such plan that will assure the minimum impact on the environment and health by implementing proper mitigation measures. Design of the project will assure the structure stability and project life in a long run.

M/s Rahman Knitwear Pvt. Ltd. will develop Restoration/ reclamation or tree plantation plan to restore the project area. Maximum Plantation will be done with native species within the unit, along the boundary wall and along the roadside if directed by EPA. Also, in-front of main area, horticulture plan will be formulated and area for this will be kept reserved.

CHAPTER # 6

6. ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM

6.1. Purpose and Objectives of the EMP:

The primary objectives of the EMP are to:

- Facilitate the implementation of the mitigation measures identified in the EIA.
- Define the responsibilities of the project proponent.
- Define a monitoring mechanism and identify monitoring parameters in order to:

1. Ensure the complete implementation of all mitigation measures.
2. Ensure the effectiveness of the mitigation measures.
3. Provide a mechanism for taking timely action in the face of unanticipated environmental situations
4. Identify training requirements at various levels.

6.2. Management Approach:

The overall responsibility for compliance with the environmental management plan rests with the project proponent.

A certain degree of redundancy is inevitable across all management levels, but this is in order to ensure that compliance with the environmental management plan is crosschecked.

6.3. Institutional Capacity

Following functionaries will be involved in the implementation of EMP:

- Project Proponent
- HSE/Project Manager
- In-Charge Administration
- Supervisor of project
- Environmental Engineer

6.4. Training Schedules

Training for the management/contractors/engineers and workers on environmental aspects of the project will be arranged. It will be imparted by a team of experienced trainers.

6.5. Training of building contractor

Training of building contractor & workers will be the part of the TORs regarding the construction of the scheme. The provisions given in EIA Report Chapter 5 Screening of Potential Environmental Impacts & Their Mitigation Measures will be followed.

TORs will be including the training and submission of reports in the following area:

1. Handling of Machineries in a safe way
2. Use of PPEs
3. Maintenance of vehicles and submission of Environmental Monitoring Reports
4. Maintenance of Water Consumption records
5. Testing of water and waste water and submission of Environmental Monitoring Reports.
6. Placement of safety signs/boards during construction
7. Sprinkling of water on the roads and dusty tracks
8. Monitoring of generator emissions

Training regarding all other aspects of HSE will be ensured by the contractor during the construction phase.

6.6. Responsibility of EMP

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

Summary of impacts and their mitigation measures

Serial	Environmental Issues/ Impacts	Mitigation Measures
PLANNING, SITE SELECTION AND DESIGN STAGE		
1	Observance of administrative and legal formalities	It is recommended for obtaining of approval from other relevant departments.
2	Acquisition of land	The proposed land is the property of the project proponent.
3	Loss of environmentally sensitive areas	There is not any sensitive area near the project site however the project proponent will achieve the PEQS at the boundary wall of the subject project to avoid the environmental impacts on the nearby industrial unit.
4	Changes in traffic pattern	There is no need to change the traffic pattern due the development of the subject project because no. of industries have been developed at the same link road only few vehicles will visit the project on daily basis.
5	Potential conflicts with stakeholders	There is not any conflict at the current stage of the project. Neighboring stakeholders visited regarding their concerns. They have no objection regarding development of the subject project as per proposed design.
6	Resettlement issues	No resettlement issues
7	Project Design	Provision of Emergency Exits, Assembly Points, firefighting arrangements, water storage for firefighting should be incorporated in the design. Installation of Dust/flue gases/odor controlling devices should be incorporated in the design. Project proponent is committed to provide all these provision in the design of the project.
SITE DEVELOPMENT STAGE		

1	Erosion due to stripping and site clearance.	Sprinkling of water on road sides or dusty tracks.
2	Generation of dust	Careful loading and unloading of construction materials is recommended. Sprinkling of water on construction site and surrounding areas is recommended.
3	Generation of noise	• Avoid use of horns at the site. • Do not throw heavy equipment and construction materials in haphazard manner.
4	Local flooding/ponding	Immediate repair and maintenance of water supply pipes and sewers in case of any defect will be undertaken.
5	Outbreak of fire	Firefighting equipment must be maintained at the site in good working condition.
6	Safety	Safety of the workers and others must be ensured. Privacy of the neighbors must not be disturbed.
7	Labor issues	Employ the local labor as far as possible Wages of the labor should be as per Government policy
CONSTRUCTION STAGE		
1	Minor erosion of land	There are two types of erosions: 1. Wind Erosion 2. Water erosion • It is recommended to construct the boundary wall first that will reduce the soil erosion due to wind and chances of water erosion due to water flow from the adjacent will be reduced also. • Clearing of land should be step wise; vegetation should be removed only from the area where main building will be developed. • Add more vegetation, restore the land by more plantation

		• Sprinkle water on dusty tracks is recommended
2	Contamination of land and water	Hazardous substances like oil, fuel, etc. should be kept on concreted surface. Essential services like water supply, sewerage disposal and solid waste management must be in working condition.
3	Impacts of dust, noise and flue gases on neighbors	Sprinkling of water on dusty tracks is recommended. Avoid use of horns at the site. Do not throw heavy equipment and construction materials in haphazard manner. Proper tunings of vehicles and machinery must be ensured. Schedule construction timings should be implemented for minimum disturbance to neighbors. Continuous Environmental monitoring must be ensured as per proposed monitoring plan.
OPERATION STAGE		
1	Contamination of land and water sources	Continuous vigilance on maintenance of services. Tarpaulin sheets must be placed to avoid leaching of oil into ground.
2	Fire breakouts	Training of workers regarding flammable substances will be ensured. SOPs of fire prevention will be adopted like forbidden of smoking, regular testing of electricity infrastructures and regular testing of gas supply system to the industry. Firefighting equipment must be kept in working condition at site.
3	Safety/security concerns	Safety of the workers and others will be ensured. Privacy of the neighbors will not be disturbed.
4	Malfunction of utilities	It is proposed to appoint maintenance engineer with technicians like plumber and electrician for smooth operation of utility services.

5	Occupational Health, Safety and Environment	• Regular medical check-ups must be ensured to improve the working condition and efficiency of workers. • Safety of management, workers and visitors must be ensured. • Observance construction and safety codes must be ensured. • Provision of emergency exits must be ensured.
6	Production of Solid Waste	Area for solid waste must be reserved within the subject project. The solid waste must be managed on regular basis. The domestic waste will be disposed-off in environment friendly way.

6.7. Equipment Maintenance Detail

The subject project is the proposed construction of Dyeing unit, Biomass Steam Boiler, Thermo Oil Boiler under the name of M/s Rahman KnitwearPvt. Ltd. The company will maintain the records for Health Safety & Environment and will hire HSE manager to check and deal with the HSE issues. The company shall maintain PPEs, medical facilities, firefighting Equipment's as fire buckets, fire hydrants and fire extinguishers and records for their periodic fillings or replacement.

6.8. Environmental Budget

The cost which is required to effectively implement the mitigation measures is important for the sustainability of the Project in operation stage of the Project.

Company has allocated the Environmental Budget is 3-5 million Rs. out of total capital cost for the Training, maintenance and management of Environment that will include filling and maintenance of equipment's, restoration, plantation, and availability of PPEs, strategic planning to cope with any emergency situation and formulate the disaster management plan to cope with natural disaster. Any equipment or devices failure or replacement will not be included in this budget.

6.9. ENVIRONMENTAL MANAGEMENT PLAN FOR MANUFUCTURING UNIT OF M/S RAHMAN KNITWEARPVT. LTD.

Serial No.	Environmental Parameter/ Element	Mitigation measure to be taken during construction stage		
		Construction	**Regular operations**	**Responsibilities**
1.	Gaseous/ Dust emissions	**1-** Construction materials i.e. sand, clay shall be transported to the project site during night time and will be stored away from the road or foot path. They will be kept under cover to avoid any fugitive dust.	Management will ensure that PPEs i.e. masks will be provided to workers during the working hours.	**HSE/Environment Manager**
		2- The site proposed for the construction of Manufucturing Unit is located away from human settlements.	Vehicles to use for the transportation of raw materials Manufucturing Unit, should be properly tuned.	
		3- All equipment, generators, and vehicles used during the project will be properly tuned and maintained in good working condition in order to minimize exhaust emissions.	One diesel fired generator shall cater for emergency situation only. Their exhaust will be emitted through an adequately fabricated stack. It will also be kept in mind that the generators will	

			only function during emergency condition for limited period.	
		4- All project vehicles will be checked regularly to ensure that engines are in sound working condition and are not emitting smoke.	Monitoring should be conducted on Monthly basis as per EPA PEQS Rules.	
2.	Noise	1- All activities will be under PEQS level of noise during construction phase.	All activities will be under PEQS level of noise during operation phase.	**HSE/Environment Manager**
		2- Ear plugs will be provided & implemented (ensured by the management of Vertex Apparel Pvt. Ltd	PPEs i.e. ear muffs should be provided to workers in case of high noise.	
3.	Health & safety	1- Local people will be informed in advance when work is about to start in an area. This may result in people keeping young children away from work areas. 2- Machinery will never be left unattended.	1- The EMP guidelines will be followed strictly (committed by the management). 2- Training of workers will be conducted regarding health and safety.	**HSE/Environment Manager**

		3- Safe driving practices will be adopted, particularly while passing through settlements. 4- Basic health facilities will be provided to workers. 5- PPEs will be provided & implemented. 6- Electrical wires, D.Bs will be kept covered to avoid electrical hazards.	3- PPEs will be provided and implemented. 4- First aid measures will be provided to workers. 5- Shift Rotation, proper ventilation will be provided to workers in case of thermal stress. 6- Safety signs, safety boards, exit arrows etc. will be placed on site. 7- An Assembling point will be kept to gather in case of emergency situate]on such as fire hazards. 8- Floors will be kept clean without slippery to avoid any hazard. 9- Firefighting system will be installed to avoid any health hazards.	

			10- Electrical wires, D.Bs will be kept covered to avoid electrical hazards. **11-** Machinery will never be left in running condition.	
4.	Generation of domestic & project process related solid waste.	Construction Solid waste will be stored in solid waste bins and will be reused for land filling and maintenance purposes and domestic waste will be handed over to the certified contractors.	Domestic, process related solid waste and sludge will be stored in solid waste bins and will be handed over to certified contractors.	**HSE/Environment Manager**
5.	Waste effluents	Wastewater must be treated	The sewage to be generated shall be treated in current treatment facility of unit & then will be drained out in the nearby Sundar Industrial Estate drain.	**HSE/Environment Manager**
6.	Water supply	It shall be ensured that no activity tempers with the water supply system and water availability	It shall be ensured that no activity tempers with the water supply system and water availability	**HSE/Environment Manager**
7.	Soil erosion	The clearing of vegetation along proposed site will be minimized as far as possible.	Plants will be planted during operation phase of the subject Division.	**HSE/Environment Manager**

8.	Enhancement of aesthetic beauty of the building and the area.	---	1- Flower pots containing flowers and plants will be provided in front of the building to add to the improvement of the environment around. 2- All other necessary measures will be taken to maintain standards of cleanliness so that the building may add to the scenic/aesthetic beauty of the area around.	**HSE/Environment Manager**
9.	Staff for catering the Environmental Management Plan	---	**1-** Special staff will be recruited to implement this Environmental Management Plan on regular basis.	**HSE/Environment Manager**
10.	**Sludge from Eflluent treatment plant**	**----**	Sludge will be handle properly and after successful removal from tanks It will hand over to contractors	**HSE/Environment Manager**

CHAPTER # 7

7. STAKEHOLDERS PARTICIPATION

Social acceptability of the project and the area is a key to success. Consultation with the stakeholders is a tool for managing two-way communication between the project proponent and the affected public. Its goal is to improve decision making and built understanding by actively involving individuals, groups and organizations, which have stake in the project. This involvement increases project's long term viability and enhances its benefits to locally affected people and other stakeholders.

In order to evaluate the socioeconomic and environmental impacts, filed surveys are extremely essential. In addition to the surveys at the preliminary stage, consultation with the community and their active participation plays a vital role in successful implementation of the project. To identity the different types of stakeholders and ascertain their perceptions about the project, an Environmental Impact Assessment was conducted. Informal group discussions were also held as an additional tool for obtaining feedback from the stakeholders that are being discussed in the following pages.

7.1. Objectives of Consultation

Public consultation plays a vital role in studying the effects of the project on the stakeholders and in the successful implementation and execution of the proposed project. Public involvement is a compulsory feature of environmental assessment, which leads to better and more acceptable decision making. The objective of the consultation with stakeholders is to help verify the environmental and social issues that have been presumed to arise and to identify those which are not known or are unique to the establishment/ installation of the proposed unit.

The important general objectives of the consultation process are:

- Information dissemination, education and liaison;
- Identification of problems and needs;
- Collaborative problem solving;
- Reaction, comment and feedback on proposed project;
- Documenting mitigation measures proposed by the stakeholders;

7.2. Methodology of consultation:

The EIA team carried out public consultations at various locations around the Project Site. The stakeholder's consultation during this phase of the work targeted the project area, administrative and private offices, Govt. offices, shops, etc. near the Project area:

- Selection of the stakeholders for consultation, reconnaissance of the proposed project site and initial discussions with the neighboring factory workers, villagers, shopkeepers, drivers etc.
- Environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

7.3. Proponent

Possible impacts and mitigation measures related to the subject project were discussed with the project proponent and management. They assured to take all suggested mitigation measures to control any discrepancy arose by the project and to make the project environmental friendly.

7.4. Responsible Authority

Management of M/s Rahman Knitwear Pvt. Ltd. is the responsible authority to take all measures prior to start the activity.

7.5. Other departments and agencies

For the impact analysis detailed meetings were held with the management of M/s Rahman Knitwear Pvt. Ltd. local community, education institutes, health institutes, hospital and NGOs. Issues were discussed that may affect the environment and also the implementation of proposed project. All possible mitigation measures were considered and incorporated in the Environmental Management Plan.

Scoping sessions, focused group discussion and way side consultations were held with the relevant stakeholders in the area. The purpose of such consultations is to obtain the feedback from the relevant persons.

7.6. Affected & Wider Community

There is no affected community present in the radius of our study area. PGEE team has consulted with the inhabitants of the different villages. They provided positive remarks regarding the subject project and in the favor of the subject activity for the proposed plant. Stakeholders participation Performa's and socioeconomic questionnaire were get filled by the

inhabitants to evaluate the project socio-economic impacts. List of respondents and socioeconomic questionnaires are attached as **Annexure-F** with the report.

7.7. Categories of stakeholders interviewed in the project area:

Sr. No.	Stakeholder Category
1.	Neighboring factory workers.
2.	Nearby residents
3.	Shopkeepers.
4.	Drivers.

7.8. Issues Discussed:

Following issues were discussed during the stakeholder consultation:

- Overall activities of the project;
- Possible impacts on natural vegetation, air, land and properties;
- Possible mitigation measures;
- Benefits of the project specifically for the local people.

7.9. Findings of the Overall Discussion:

- After the completion of the proposed project the site will be used for industrial activities.
- It will enhance the socio-economic conditions/values of the area.
- Project will increase revenue generation for the Government.
- It will create employment opportunities.
- Local people will be given preference for employment in the proposed project.
- Establishment/ installation of the proposed project will be completed in the designated timeframe to limit adverse impacts of construction.
- There will be no significant additional load on the existing infrastructure i.e. utilities of water, telephone, electricity etc. due to the development of the proposed project.

Majority of people favored the proposed project in a sense that the construction of the said project will generate employment opportunities for local people and revenue for the government, will enhance the socioeconomic conditions of the area and automatically will contribute to the national economy of the country.

CHAPTER # 8

8. CONCLUSION AND RECOMMENDATIONS

Based on the study conducted for Environmental Impact Assesment (EIA) for the subject project, the following conclusions are made:

8.1. CONCLUSIONS

- The EIA study reveals that the project is economically viable, socially acceptable and environment friendly.
- It will generate additional jobs during construction and operation phases.
- The proponent has committed to implement the project in the environment friendly manner.
- M/s Rahman Knitwear Pvt. Ltd. has applied to obtain approval from local Government.
- M/s Rahman KnitwearPvt. Ltd.will prepare and implement very comprehensive Emergency Preparedness and Response Standard Operating Procedures.
- M/s Rahman Knitwear Pvt. Ltd. will prepare and implement very comprehensive Security and Fire Fighting Standards Operating Procedures.

8.2. RECOMMENDATIONS

- In view of the comprehensive screening process and findings of the present study there is no need of conducting further investigations.
- Tree plantation inside the unit and near the unit is recommended.
- The untreated wastewater will not be reused for irrigating the vegetation and lawns.
- High standards of bio-security and safety will be enforced during operation stage. Safety of the workers will be top priority for the management.
- The management of M/s Rahman Knitwear Pvt. Ltd. will continue to assist the local communities as a corporate/social responsibility. The present EIA report is enough to meet the administrative and legal framework. Therefore, the environmental approval may be accorded for the present project.