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EXECUTIVE SUMMARY

Title & Location of the project

Subject project for which this Environmental Impact assessment study has been conducted is the proposed construction of raw leather processing unit by M/S Kasur Tanneries Pvt. Limited (Unit-II), over an area of 35 kanals and 10 marlas. The production capacity will be 80 tons/day raw leather. The cost of the proposed project will be 350 million Rs.

The proposed project falls under Schedule II (EIA), Category B (Manufacturing and Processing), clause 10 (Tannery and Leather Units) 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.**

Location

Subject proposed project site is located at Manawala opposite KTWMA site, Kasur having coordinates:

31° 5'14.19"N

74°28'34.56"E

East..... Covered Area

West..... Open Area

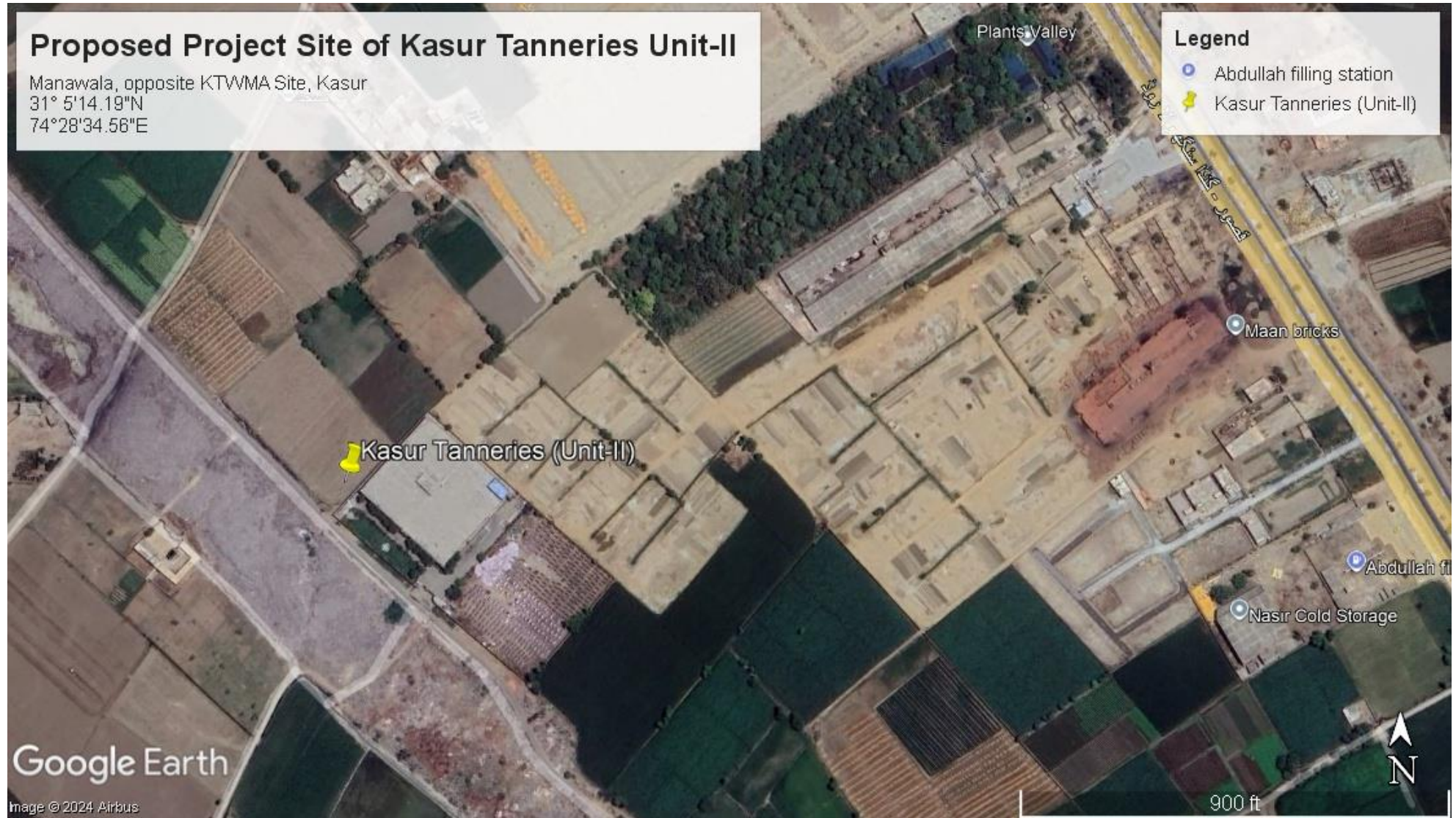
North..... Access Road

South..... Open Area

Google map of site proposed for the establishment of the subject project



Google map of site: For further details, layout map of the project is attached as **Annexure-B** and **Google Earth Map** as **Annexure-E** with the report





Detail of Proponent:

Name	Mr. Muhammad Naeem
CNIC	35102-1726204-9
Mailing Address	Muahllah Kot Pakka Qila, Kasur

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

Name of organization preparing the report:

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

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

Contact: 042-35441444, 0303-4442335.

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

Authority letter in the favor of the consultant is attached with the initial documents.

A brief outline of the proposal

Name of the project:	Subject project for which this Environmental Impact assessment study has been conducted is the proposed construction of raw leather processing unit by M/S Kasur Tanneries Pvt. Limited (Unit-II).
Location of the project:	Manawala opposite KTWMA Site, Kasur.
Proposed Area:	The total area of the unit is 35 kanals and 10 marlas.
Nature of Project:	Nature of the project is proposed construction of Raw Leather processing unit for the production of wet blue.
Cost of the project:	Overall cost of the project will be approx. 350 million rupees.
Project process:	Process will include processing of Raw Leather into Wet Blue
Raw materials	Hides, Satls containing chlorides, H ₂ O ₂ , Formic Acid
Production capacity	The production capacity will be 80 tons/day raw leather.
Power Requirement:	2 MW through solar system and other through WAPDA.
Labor/ Workforce:	During Construction: 30-35 During Operation: 20-25
Water Requirement:	During Construction: 220-250 m ³ /day



	During Operation: 600 m ³ /day
Solid waste:	<p>During Construction: Constructional and 0.45kg/capita/day of domestic Solid waste will be generated</p> <p>During Operation: Drums, Domestic and Process related water waste including packaging materials and discarded hides and leather pieces.</p>

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 Constructional and operational phase along with mitigation measures suggested:

DURING CONSTRUCTIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Air Quality (Dust & Emissions)	Dust and emissions from construction activities, machinery, and vehicles	<ul style="list-style-type: none"> - Use water sprinkling techniques to suppress dust during excavation, demolition, and material handling activities. - Ensure all construction machinery is regularly maintained to reduce exhaust emissions. - Apply dust suppressants on unpaved roads and construction sites. 	Site Manager, Contractor
Noise Pollution	Noise generated by construction machinery, equipment, and worker activities	<ul style="list-style-type: none"> - Limit construction work to specified hours - Provide noise barriers or acoustic enclosures around noisy equipment or machinery. - Use quieter machinery where possible. 	Contractor, Site Manager
Water Quality (Effluent & Runoff)	Contamination of local water bodies due to runoff from construction site	<ul style="list-style-type: none"> - Install silt fences around construction zones to minimize soil erosion. - Treat any runoff or wastewater using sedimentation tanks before discharge into water bodies. - Ensure no hazardous materials are discharged into water systems. 	Environmental Officer, Site Manager
Waste Generation (Construction Debris & Hazardous Waste)	Solid waste such as construction debris, hazardous materials like chemicals, paints, etc.	<ul style="list-style-type: none"> - Implement waste segregation and recycling practices (separate concrete, metal, wood, and hazardous waste). - Store hazardous materials in secure containers, away from water sources. - Dispose of waste following local regulations. 	Waste Management Team, Site Manager



DURING CONSTRUCTIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Soil Erosion & Sedimentation	Erosion and sedimentation from excavation and soil disturbance	<ul style="list-style-type: none"> - Install erosion control measures such as silt fences, mulching, and ground cover. - Stabilize disturbed areas immediately after construction is completed. - Avoid excavation during heavy rainfall. 	Contractor, Environmental Officer
Traffic Management	Increased traffic flow and congestion due to delivery trucks and construction vehicles	<ul style="list-style-type: none"> - Create a traffic management plan to minimize congestion, scheduling deliveries during off-peak hours. - Establish clear signs and barriers to direct traffic safely around the construction site. - Provide workers with proper transport arrangements to minimize local road usage. 	Coordinator, Site Manager
Health & Safety Risks (Workers)	Potential accidents and health risks to workers on site from machinery, chemicals, and dust	<ul style="list-style-type: none"> - Provide workers with appropriate Personal Protective Equipment (PPE) such as helmets, gloves, goggles, and masks. - Conduct regular safety training sessions. - Set up safety barriers around hazardous zones. 	HSE Manager, Site Manager
DURING OPERATIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Air Quality (Emission from Tanning Process)	Emissions from chemical processes, machinery, and volatile organic compounds (VOCs) during tanning	<ul style="list-style-type: none"> - Install air filtration systems such as scrubbers and fume extractors to capture harmful gases and particulates. - Use low-emission machinery and equipment in the processing area. - Ensure proper ventilation to limit air contamination. 	Operations Manager, HSE Manager
Water Quality (Effluent Management)	Contamination of water sources from tanning wastewater containing chemicals	- Install an advanced Effluent Treatment Plant (ETP) to treat and neutralize	ETP Manager, Environmental Officer



DURING CONSTRUCTIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
		<ul style="list-style-type: none"> hazardous chemicals before discharge. - Regularly monitor the effluent quality to comply with environmental standards. - Recycle treated water in the facility for non-consumption activities like cleaning. 	
Water Consumption	Excessive water consumption for soaking, tanning, and dyeing processes	<ul style="list-style-type: none"> - Implement water-efficient technologies such as closed-loop systems. - Regularly monitor water usage and implement practices to optimize consumption (e.g., reuse process water where possible). - Educate staff on water conservation practices. 	HSE Manager, Operations Manager
Waste Generation (Leather Scraps, Chemical Waste)	Generation of solid waste (leather scraps) and hazardous waste (unused chemicals, dyes)	<ul style="list-style-type: none"> - Set up a dedicated waste management system for segregating leather scraps, chemicals, and other by-products. - Recycle leather scraps for use in other industries (e.g., footwear, upholstery). - Ensure safe disposal of hazardous chemicals by certified disposal companies. 	Waste Management Team, Operations Manager
Energy Consumption	High energy use for machinery, lighting, and tanning processes	<ul style="list-style-type: none"> - Invest in energy-efficient machinery and lighting systems (e.g., LED lights, energy-efficient pumps). - Use renewable energy sources such as solar or wind power where feasible. - Implement energy conservation programs like routine maintenance and upgrading old systems. 	HSE Manager, Operations Manager



DURING CONSTRUCTIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Chemical Use & Management	Environmental and health risks associated with improper handling and storage of chemicals	<ul style="list-style-type: none"> - Store chemicals in well-ventilated, secure areas with proper signage and emergency spill kits. - Ensure that Material Safety Data Sheets (MSDS) are available and accessible to all workers. - Regularly train staff on safe handling and emergency response procedures. 	HSE Manager, Store Manager
Health & Safety (Occupational Hazards)	Risks to workers from exposure to chemicals, machinery, and hazardous environments	<ul style="list-style-type: none"> - Provide personal protective equipment (PPE) for workers such as gloves, masks, and eye protection. - Regular health and safety audits. - Conduct routine worker training on the safe handling of chemicals and machinery. 	HSE Manager, Operations Manager
Solid Waste Management	Disposal of non-recyclable waste generated from production activities	<ul style="list-style-type: none"> - Establish waste segregation and recycling programs for different waste streams (e.g., general waste, chemical waste). - Contract with certified waste disposal companies for hazardous waste. - Minimize the amount of waste generated through lean production techniques. 	Waste Management Team, Environmental Officer
Storage and Handling of Raw Materials	Risk of leaks or spills from improper storage of raw hides, chemicals, and dyes	<ul style="list-style-type: none"> - Ensure proper storage conditions for hides (cool, dry places) to prevent spoilage. - Use sealed, leak-proof containers for storing chemicals and dyes. - Implement spill containment measures (e.g., spill kits, secondary containment) in storage areas. 	Store Manager, Operations Manager



DURING CONSTRUCTIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Noise & Vibration	Noise from machinery during leather processing and operations	<ul style="list-style-type: none"> - Install noise control systems (e.g., soundproof enclosures for noisy machinery). - Maintain machines regularly to minimize noise. - Limit the operation of high-noise equipment during late hours. 	Operations Manager, HSE Manager
Traffic Management (Dispatch)	Increased local traffic due to transportation of finished products	<ul style="list-style-type: none"> - Develop a traffic management plan for incoming raw materials and outgoing finished products. - Schedule transportation during off-peak hours. - Ensure that delivery vehicles are maintained to reduce traffic congestion. 	Transport Coordinator, Operations Manager

1. ADDITIONAL CONSIDERATIONS

- **Emergency Response Plan:** Develop and implement protocols for spills, chemical leaks, and other emergencies, ensuring staff are trained on these procedures.
- **Community Engagement:** Maintain open lines of communication with stakeholders to foster trust and transparency.
- **Documentation:** Keep detailed records of monitoring results, training sessions, community engagements, and compliance with regulations.
- **Continuous Improvement:** Regularly review and update the EMP to incorporate new technologies and practices, ensuring ongoing compliance and environmental stewardship.



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 Constructional 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 Constructional 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.

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 Assessment (EIA).

1.1. Purpose of the report

Environmental Impact Assessment (EIA) report is being submitted to the Environmental Protection Agency (EPA), Government of the Punjab, Lahore for the compliance of Section 12 of Punjab Environment Protection Act-1997 (Amended 2012) for obtaining No Objection Certificate (NOC) before starting the Constructional 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

Schedule II, Category B, clause 6 and Category F of Punjab Environmental Protection (Review of IEE and EIA Regulations), 2022.

1.2.1. Proponent:

Name	Mr. Muhammad Naeem
CNIC	35102-1726204-9
Mailing Address	Muahllah Kot Pakka Qila, Kasur



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, Lahore

Tel: 042-35441444, 03034442335

Email: info@pakgreen.pk; pak.green@hotmail.com

The current study was carried out by the following professionals:

Abdul Hafeez Nasir	PhD Scholar Environmental Management
Iftikhar Ahmed	Environmental Specialist
Hassan Afzal	Environmental Specialist
Umair Rasheed	Environmentalist
Muhammad Imran	Environmental Engineer
Nageen Quyyum	Environmentalist/ Author of the report
Sabeera Tauheed	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 raw leather processing unit by M/S Kasur Tanneries Pvt. Limited (Unit-II), over an area of 35 kanals and 10 marlas. The production capacity will be 80 tons/day raw leather. The cost of the proposed project will be 350 million Rs.



BRIEF DETAILS OF THE PROJECT:

Name of the project:	Subject project for which this Environmental Impact assessment study has been conducted is the proposed construction of raw leather processing unit by M/S Kasur Tanneries Pvt. Limited (Unit-II).
Location of the project:	Manawala opposite KTWMA Site, Kasur.
Proposed Area:	The total area of the unit is 35 kanals and 10 marlas.
Nature of Project:	Nature of the project is proposed construction of Raw Leather processing unit for the production of wet blue.
Cost of the project:	Overall cost of the project will be approx. 350 million rupees.
Project process:	Process will include processing of Raw Leather into Wet Blue
Raw materials	Hides, Satls containing chlorides, H ₂ O ₂ , Formic Acid
Production capacity	The production capacity will be 80 tons/day raw leather.
Power Requirement:	2 MW through solar system and other through WAPDA.
Labor/ Workforce:	During Construction: 30-35 During Operation: 20-25
Water Requirement:	During Construction: 220-250 m ³ /day During Operation: 600 m ³ /day
Solid waste:	During Construction: Constructional and 0.45kg/capita/day of domestic Solid waste will be generated During Operation: Drums, Domestic and Process related water waste including packaging materials and discarded hides and leather pieces.

1.4.1. Location

Subject proposed project site is located at Manawala opposite KTWMA site, Kasur having coordinates:

31° 5'14.19"N

74°28'34.56"E

East..... Covered Area

West..... Open Area

North..... Access Road

Google map of site for the proposed subject project



For further details, layout map of the project is attached as **Annexure-B** and Google Earth Map as **Annexure-E** with the report.

1.5. Screening

The proposed project falls under Schedule II (EIA), Category B (Manufacturing and Processing), clause 10 (Tannery and Leather Units) of Punjab Environmental Protection (Review of IEE and EIA Regulations), 2022.



CHAPTER # 2

2. DESCRIPTION OF THE PROJECT

2.1. Type and Category of the Project:

Subject project for which this Environmental Impact assessment study has been conducted is the proposed construction of raw leather processing unit by M/S Kasur Tanneries Pvt. Limited (Unit-II), over an area of 35 kanals and 10 marlas. The production capacity will be 80 tons/day raw leather. The cost of the proposed project will be 350 million Rs.

The proposed project falls under Schedule II (EIA), Category B (Manufacturing and Processing), clause 10 (Tannery and Leather Units) of Punjab Environmental Protection (Review of IEE and EIA Regulations), 2022.

2.2. Objectives of the Project

Objectives of the establishment of the subject project are:

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

2.3. Alternative Considerations and Reasons for their Rejection:

2.3.1. Location alternatives:

The land for the proposed project is owned by the proponent, which is a crucial factor in ensuring the smooth execution of the project. No alternative sites were considered, as the selected industrial area is deemed best suited for the proposed raw leather processing unit. The industrial area already has the necessary infrastructure in place, including access roads, communication facilities, electricity, and basic utilities like sewerage, making it an ideal location.

In addition to the availability of essential infrastructure, the site is environmentally suitable, with a focus on maintaining a clean and sustainable environment. The project is expected to benefit the local community by providing increased employment opportunities and contributing to the region's economic growth.

Given the availability of the land, the necessary infrastructure, and the proximity to an industrial area, the selected site is ideally suited for the proposed construction of the raw leather processing unit for the production of wet blue by M/S Kasur Tanneries Pvt. Ltd.

2.4. Location and site layout of the project:

Subject proposed project site is located at Manawala opposite KTWMA site, Kasur having coordinates:

31° 5'14.19"N

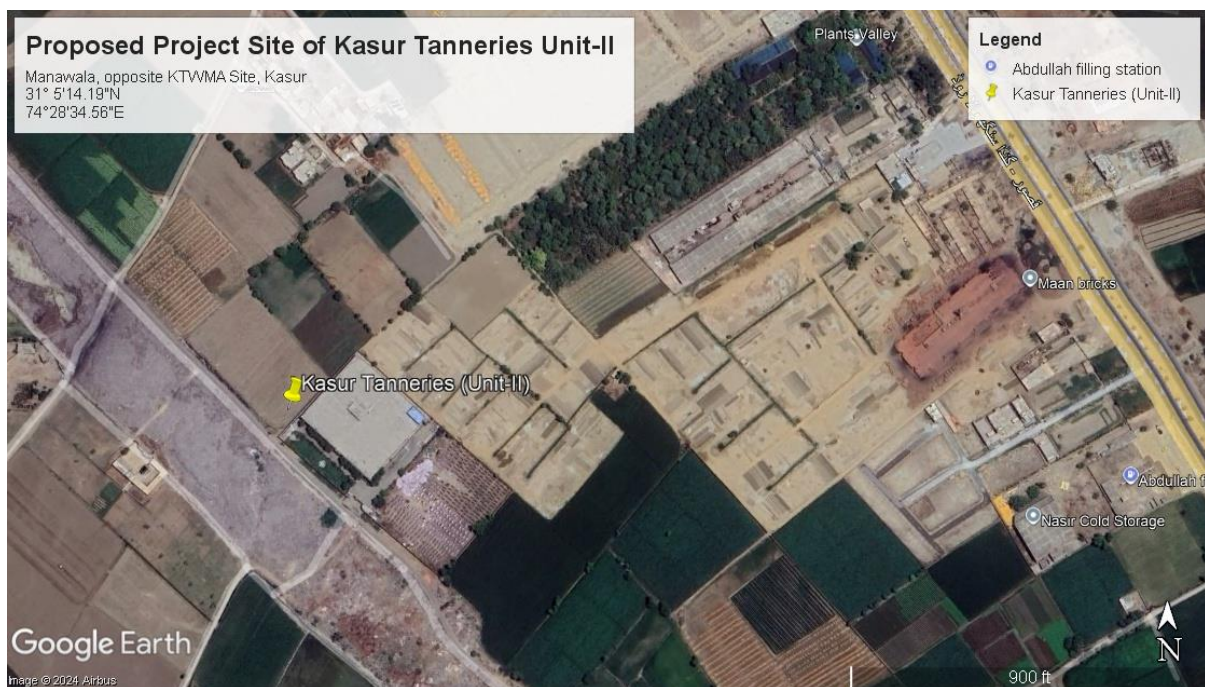
74°28'34.56"E

East..... Covered Area

West..... Open Area

North..... Access Road

South..... Open Area



For further details, layout map of the project is attached as **Annexure-B** and Google Earth Map as **Annexure-E** with the report.

Fig: Google map of site proposed for the Construction of subject project

2.5. Land Use on site

Site proposed for the subject project is an empty plot and it is the property of the proponent, reserved by the proponent for the proposed construction of the subject project of raw leather processing unit.

2.6. Road Access

Paved road at the front side of the project site connects it directly with the Lahore-Kasur road.

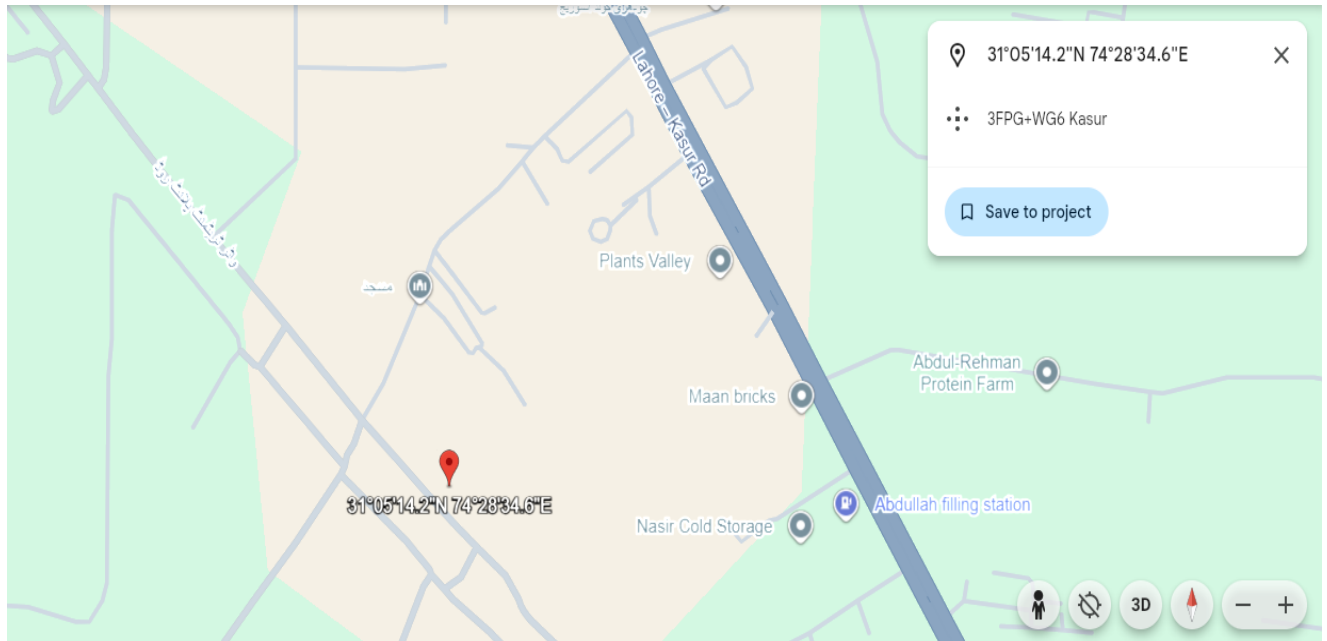


Fig: Access Road nearby the project site

2.7. 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.

2.8. Cost and magnitude of the operation

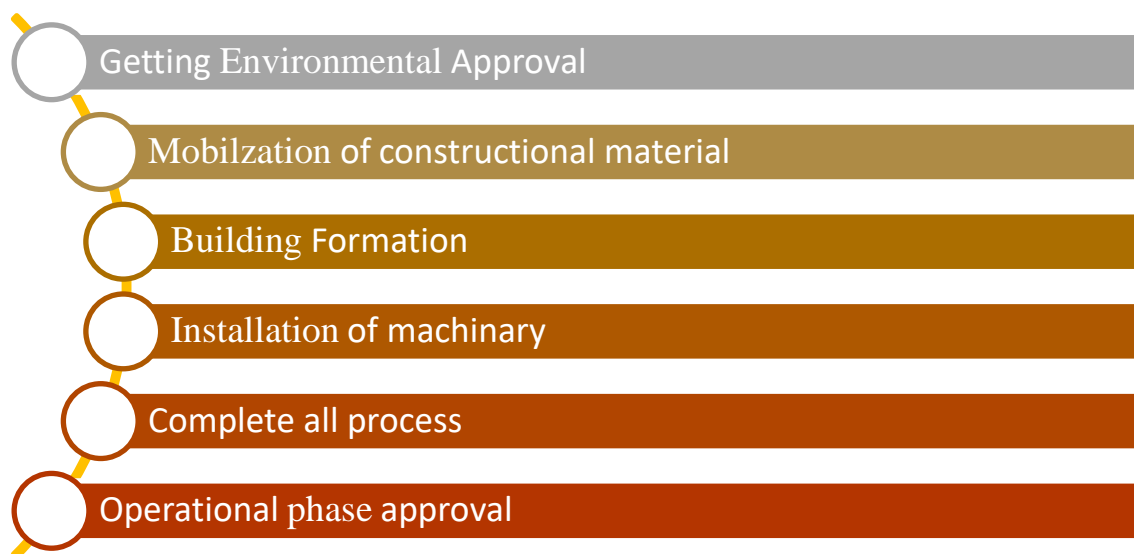
The Subject project for which this Environmental Impact assessment study has been conducted is the proposed construction of raw leather processing unit by M/S Kasur Tanneries Pvt. Limited (Unit-II), located at Manwala oppsite to KTWMA site, Kasur, over an area of 35 kanals and 10 marlas. The production capacity will be 80 tons/day raw leather. The cost of the proposed project will be 350 million Rs.

2.9. 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.



2.10. Description of the project:

Subject project for which this Environmental Impact assessment study has been conducted is the proposed construction of raw leather processing unit by M/S Kasur Tanneries Pvt. Limited (Unit-II), located at Manwala oppsite to KTWMA site, Kasur, over an area of 35 kanals and 10 marlas. The production capacity will be 80 tons/day raw leather. The cost of the proposed project will be 350 million Rs.

Name of the project:	Subject project for which this Environmental Impact assessment study has been conducted is the proposed construction of raw leather processing unit by M/S Kasur Tanneries Pvt. Limited (Unit-II).
Location of the project:	Manawala opposite KTWMA Site, Kasur.
Proposed Area:	The total area of the unit is 35 kanals and 10 marlas.
Nature of Project:	Nature of the project is proposed construction of Raw Leather processing unit for the production of wet blue.
Cost of the project:	Overall cost of the project will be approx. 350 million rupees.
Project process:	Process will include processing of Raw Leather into Wet Blue
Raw materials	Hides, Satls containing chlorides, H ₂ O ₂ , Formic Acid
Production capacity	The production capacity will be 80 tons/day raw leather.
Power Requirement:	2 MW through solar system and other through WAPDA.



Labor/ Workforce:	During Construction: 30-35 During Operation: 20-25
Water Requirement:	During Construction: 220-250 m ³ /day During Operation: 600 m ³ /day
Solid waste:	During Construction: Constructional and 0.45kg/capita/day of domestic Solid waste will be generated During Operation: Drums, Domestic and Process related water waste including packaging materials and discarded hides and leather pieces.

2.11. ACTIVITIES OF THE PROJECT

M/S Kasur Tanneries Pvt. Ltd., located at Manawala, District Kasur, follows a detailed and efficient process to convert raw hides into high-quality leather. The process begins with the procurement of hides, followed by soaking and liming with specific chemicals to prepare the material. After tanning, the leather undergoes several refining steps, including sammying, splitting, and shaving, to achieve the desired texture and thickness. The final product is carefully inspected, packed, and dispatched to various industries, ensuring durability and superior quality.

2.12. PROCESS FLOW:

Steps involve in Raw Leather Processing into Wet Blue are as follows:

2.12.1. RAW MATERIAL PROCUREMENT

- **Step 1: Hides Collection**
 - Raw hides are sourced from slaughterhouses and farms, typically from cattle, buffaloes, goats, and sheep. These hides are delivered to the tannery, where they are inspected for quality.
- **Step 2: Transportation**
 - The hides are transported to the tannery facility in Kasur and stored in a dedicated raw material storage area for processing.



2.12.2. SOAKING AND LIMING

- **Step 1: Soaking**
 - The hides are soaked in large tanks containing water to remove salt, dirt, and other impurities. The soaking process lasts for 12-24 hours, and this rehydrates the hides, making them ready for the liming stage.
- **Step 2: Liming**
 - The hides are then transferred to a liming process, where they are treated with a mixture of salts (containing chlorides), hydrogen peroxide (H₂O₂), and formic acid.
 - The **salts with chlorides** help in preserving the hides and removing residual dirt.
 - **Hydrogen peroxide** (H₂O₂) is used to remove blood stains and other residues, while **formic acid** is added to adjust the pH and further assist in cleaning the hides.
 - This step also helps in loosening hair and prepares the hide for further processes like unhairing and de-fleshing.

2.12.3. TANNING

- **Step 1: Tanning Process**
 - After liming, the hides undergo the tanning process, where they are treated with tanning agents (such as chromium salts or vegetable tannins) to convert them into leather.
 - The primary tanning agent used is **chromium salts**, which result in chrome-tanned leather, known for its durability, softness, and resistance to environmental factors.
 - The leather is immersed in the tanning solution for a specific period to allow the tanning agents to penetrate the hide, binding with the collagen fibers and making the leather flexible and stable.

2.12.4. SAMMYING

- **Step 1: Sammying Process**
 - After tanning, the leather is passed through a **sammying machine**. This machine uses mechanical rollers to remove excess water and compact the leather. Sammying helps to improve the texture and smoothness of the leather, making it more manageable for subsequent steps like shaving and splitting.



2.12.5. 5. SPLITTING

- **Step 1: Splitting Process**

- In this step, the tanned leather is divided into two or more layers based on thickness. The **splitting machine** is used to separate the hide into the **grain** and **flesh** layers. The grain layer is the outer, higher-quality part of the leather, while the flesh layer is softer but may have fewer desirable characteristics.
- The splitting process is essential for obtaining different leather grades, such as top-grain and split leather.

2.12.6. SHAVING

- **Step 1: Shaving Process**

- The leather, now split into its layers, undergoes the **shaving process**, which removes any remaining uneven thickness or excess material. A **shaving machine** is used to trim the leather to the desired thickness and smoothness. This step ensures that the leather has a uniform surface and meets quality specifications.

2.12.7. PACKING AND DISPATCH

- **Step 1: Final Inspection**

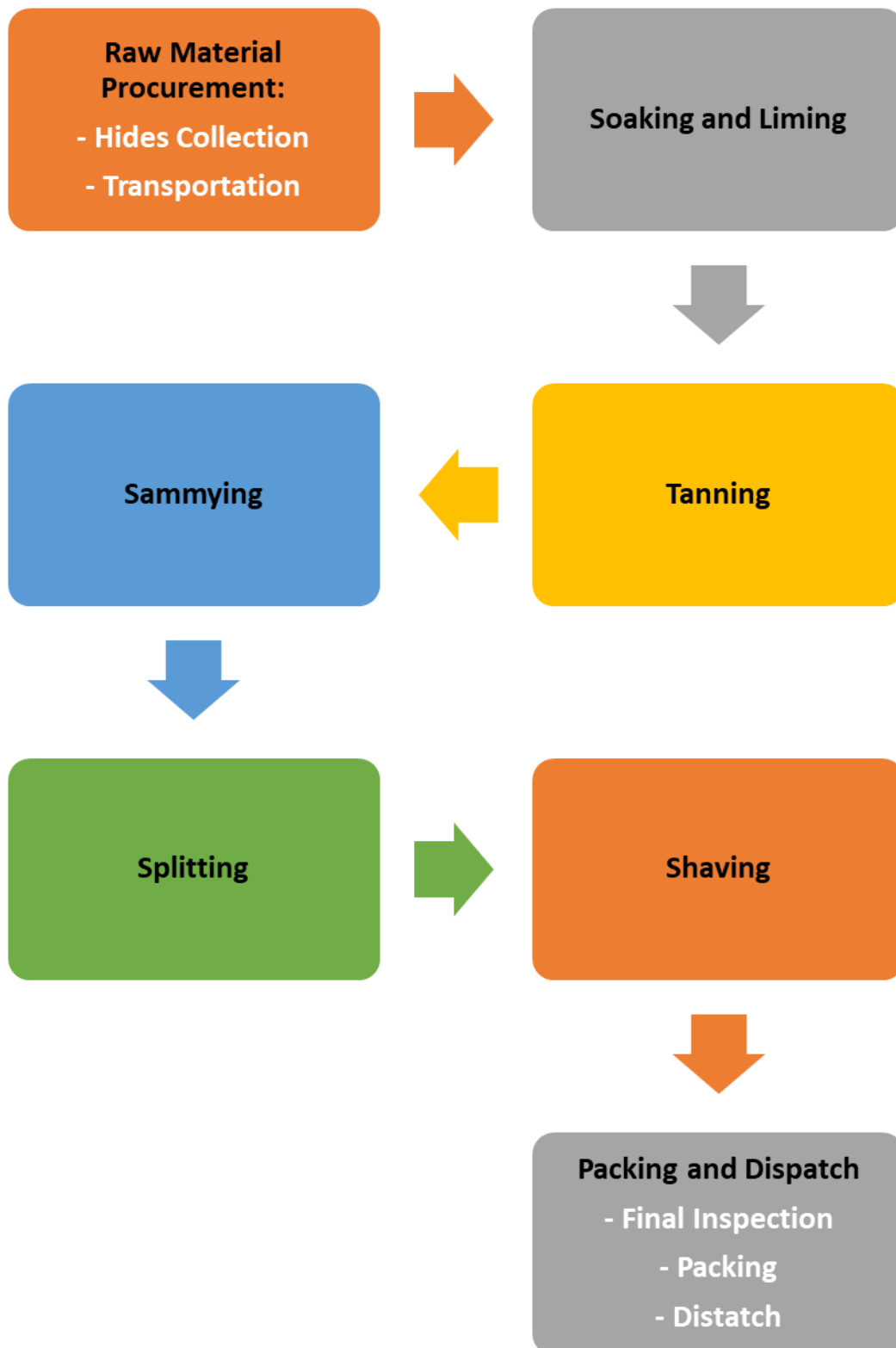
- The leather is inspected for any defects, such as tears, blemishes, or inconsistencies. This is a critical quality control step to ensure that only the best-quality leather proceeds to the final stages.

- **Step 2: Packing**

- Once the leather passes the inspection, it is rolled, folded, or cut into specific sizes depending on customer requirements. The leather is then packed into bales, bundles, or sheets.
- Each batch of leather is labeled with important information such as batch number, grade, and specifications for traceability.

- **Step 3: Dispatch**

- The packed leather is ready for dispatch. It is shipped to customers or clients in the fashion, footwear, upholstery, automotive, and other leather industries.



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



2.13. Water requirements:

The proposed M/s Kasur Tanneries Pvt. Ltd. project in Manawala will require 220-250 m³ of water per day during construction for activities like concrete mixing, dust suppression, and worker amenities. Once operational, water demand will increase to 600 m³ per day due to the water-intensive tanning processes, including soaking, washing, and dyeing leather, as well as cooling and sanitation needs.

To mitigate environmental impact, the project should implement water recycling, efficient usage, and wastewater treatment systems. Sustainable practices such as rainwater harvesting can also help reduce dependence on local freshwater resources. operations.

2.14. 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 waste water treatment facility of unit. Water after treatment will be disposed of in the nearby drain that will be transported through bowzers. Managemnet has applied to obtained approval from irrigation department. Copy of the application is attached herewith for your ready reference as **Annexure-C**.

2.15. Solid waste:

During Constructional phase of the project, only domestic waste will be produced that will be around 0.45kg/capita/day. Along with this constructional solid waste will be generated that will be used for road filling purposes or will be handed over to the contractor.

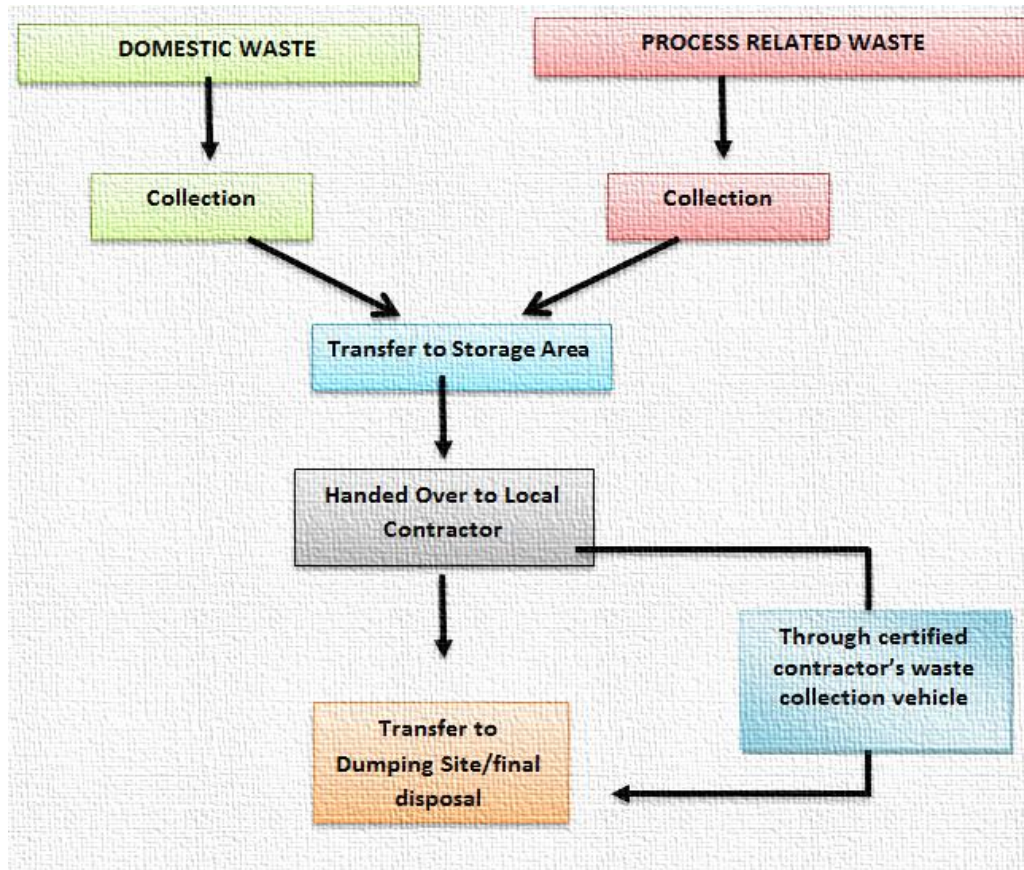
According to an estimate, about 5 tons/day of domestic and project related solid waste will be produced during the operation phase of the project Project related waste will include degraded hides, packaging materials drums etc., which will be handed over to the certified contractors.

2.15.1. 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.

2.15.2. Flow chart of solid waste management plan:



2.16. Plantation

Intensive plantation will be done by the management of M/s Kasur Tanneries Pvt. Ltd., in the near future for the conservation of environment.

2.17. Parking Area

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

2.18. Fire Protection System

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

2.19. Emergency Exits:

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



2.20. 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.

2.21. 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.

2.22. 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

2.23. 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.

2.24. Government approvals required by the project:

All the approvals will be obtained by the project proponent and will be submitted to EPA at the time of operation.



CHAPTER # 3

3. DESCRIPTION OF ENVIRONMENT

This section describes the baseline conditions, which cover the existing Physical, ecological and socio-economic environment of the project as well as study area. Data was collected by reviewing secondary data and field survey.

3.1. PHYSICAL ENVIRONMENT/ RESOURCES

3.1.1. TOPOGRAPHY:

Topographically speaking, Kasur District lies between the river Satluj which flows along its boundaries with India and river Ravi which flows its boundary with Sheikhpura District. The district may be divided into two parts, a low lying or riverine area along the two bordering rivers and upland, away from the rivers. The riverine area is generally inundated during monsoon season. The water level in this area is higher than in the upland. The soil is sandy. The upland is flat plains sloping from north-west to south-west. The general height of the area is from 150 to 200 meters above the sea level.

3.1.2. CLIMATE:

The climatic conditions of the project area are same as the condition of the district Kasur. Kasur has extremes of climate; the summer season begins from April and continues till September. June is the hottest month. The mean maximum and minimum temperature for this month are about 45 and 27 degree Celsius respectively. The winter seasons lasts from November to February. January is the coldest month. The mean maximum and minimum temperatures for the coldest month are 22 and 0 degree Celsius respectively. Rainfall Towards the end of June monsoon conditions appear and during the following two and a half months the rainy season alternates with sultry weather. The winter rain falls during January, February and March ranging from 23 to 31 millimeters.

3.1.3. CLIMATE GRAPH KASUR

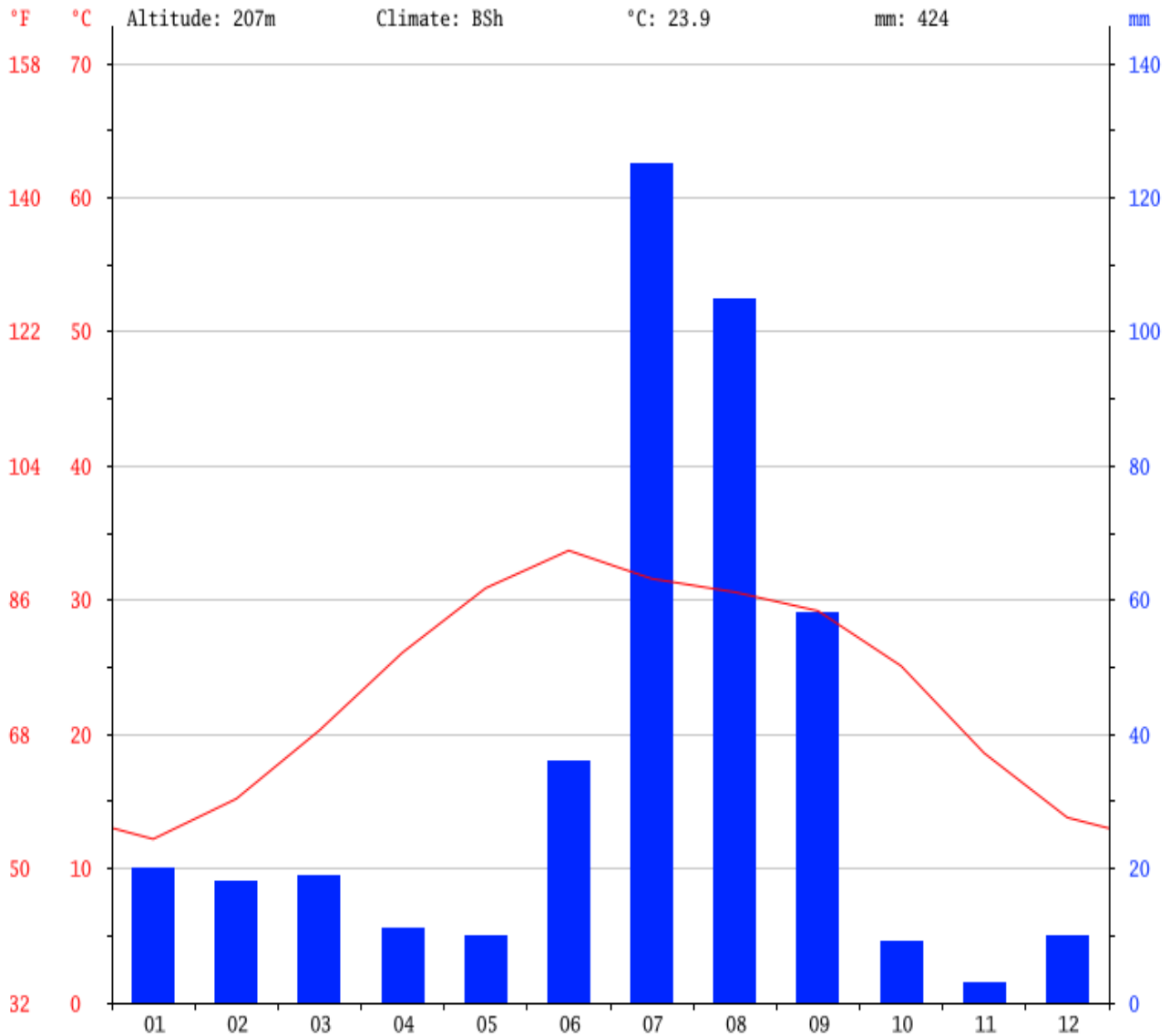
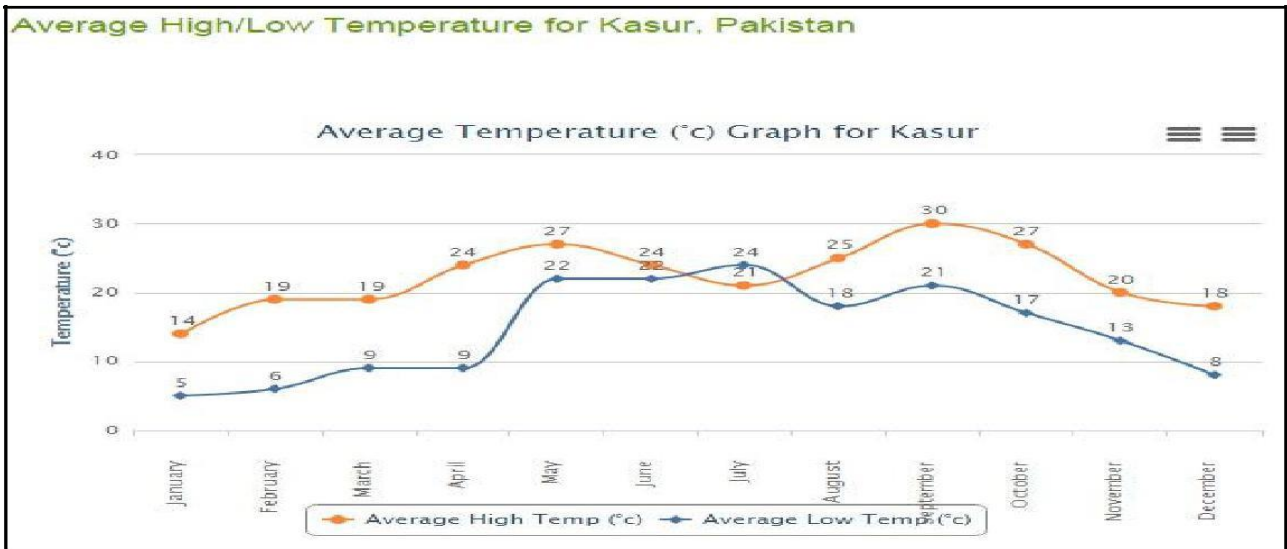


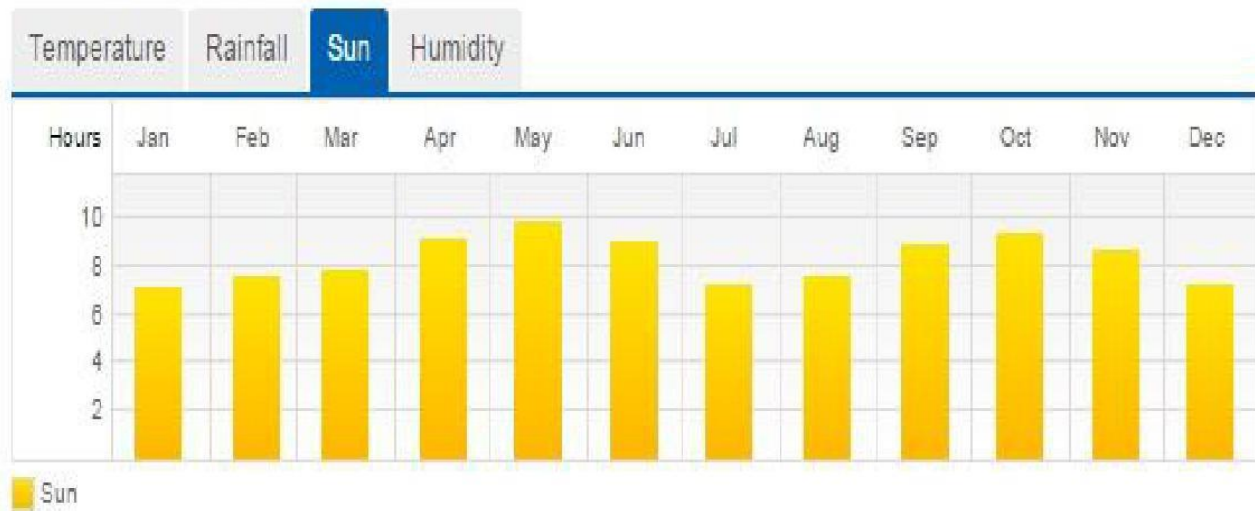
Figure 1: Graphical representation of climate of Kasur

3.1.4. TEMPERATURE:

Over the course of a year, the temperature typically varies from 5°C to 30°C and is rarely below 2°C or above 44°C. At an average temperature of 33.7 °C, June is the hottest month of the year. The lowest average temperatures in the year occur in January, when it is around 12.2 °C.



Climate data for Kasur



Reference Source:

<http://www.worldweatheronline.com/Kasur-weather-averages/Punjab/PK.aspx>

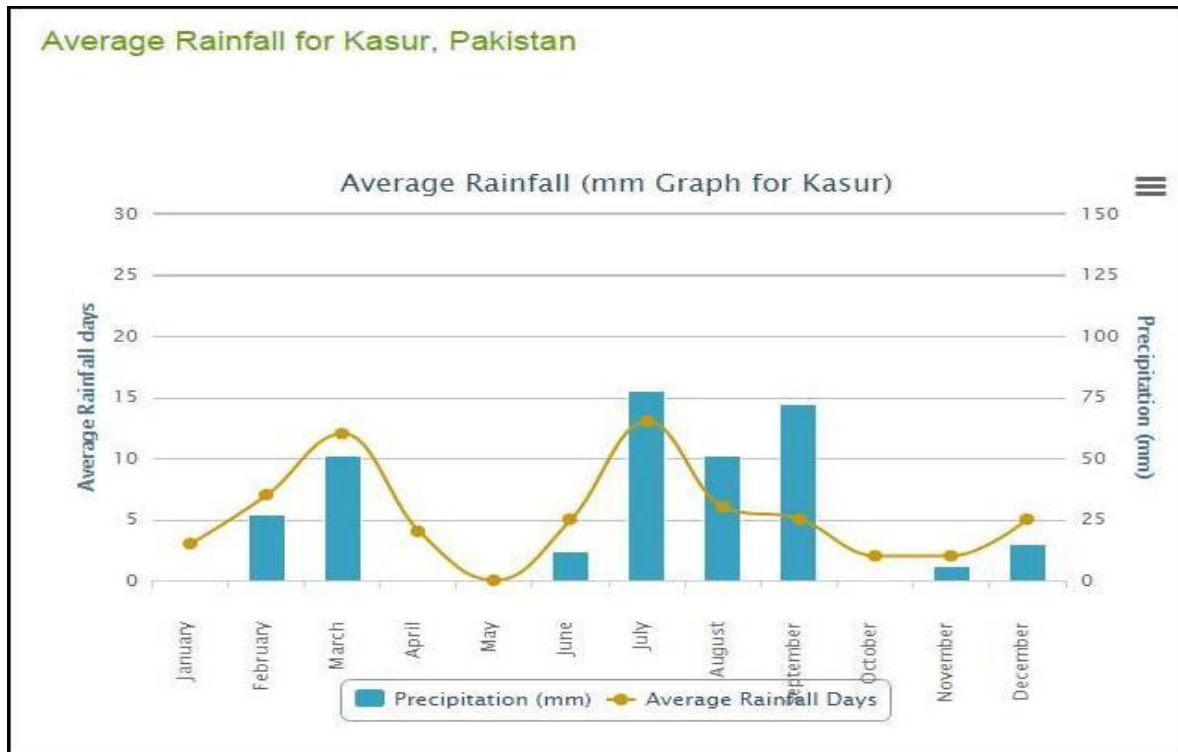
<http://www.meteovista.co.uk/Asia/Pakistan/Kasur/3311772#ui-tabs-16>

Figure 2: Graphical representation of climate of Kasur

3.1.5. PRECIPITATION:

Precipitation is the lowest in November, with an average of 3 mm. The greatest amount of precipitation occurs in July, with an average of 125 mm.

Between the driest and wettest months, the difference in precipitation is 122 mm. The variation in temperatures throughout the year is 21.5 °C.



3.1.6. AIR QUALITY:

Atmospheric pollution, particularly in industrial areas has a strong impact on daily life. Project site is located at Manawala opposite KTWMA Site, District Kasur where many industrial activities are already in process. Industries and vehicles are a major source of air pollution in the project area. Monitoring was conducted at the project site by using Fine Dust Sampler IPM-FDS 2.5/10 μ and Ambient Air Analyzer.

To record the baseline ambient air quality of the project area, monitoring was conducted at advised locations to assess the concentration of priority pollutants (Carbon monoxide, Nitrogen dioxide, Sulphur dioxide and PM₁₀) in the air. Lab reports of Ambient Air Monitoring are attached as **Annexure-D** with the EIA report.

3.1.7. NOISE LEVEL MONITORING:

3.1.7.1. BASIC ENVIRONMENTAL CONDITIONS:

During the measurement following conditions were prevailed on workplace:

3.1.7.2. METROLOGICAL CONDITIONS:

During the noise level monitoring weather was dry and sky was clear. Air was blowing at normal speed.



3.1.7.3. MONITORING INSTRUMENT:

The description of the instrument used for the noise level monitoring is given below:

Name: Digital sound level meter

Model: AR824

Company: Intel Instruments plus

Frequency Range: 31.5 Hz to 8 kHz

3.1.7.4. METHODOLOGY ADOPTED:

Noise level was monitored at four points; lab results are attached as **Annexure-D**

3.1.8. GROUND WATER:

The underground water will be used as a source of water at the project site. Sample was taken from the tube well near the project area to test its parameters. Lab results are attached as **Annexure-D**.

3.1.9. ECOLOGICAL RESOURCES

Biodiversity has an important role in the functioning of the ecosystem. Human being is one of the species of the ecosystem and that species is the end user in the food chain. Fauna and flora are the important components of the ecosystem. The observed species of fauna and flora at the project site are described below.

3.1.9.1. FLORA:

Native plants of the Punjab have been restricted to the graveyards and other protected sites/area. The observed flora in and around the project area is being mentioned below.

- a) Kikar (*Acacia arbica*),
- b) Beri (*Zizyphus jajaba*),
- c) Shisham or Tali (*Dalbergia sissoo*)



3.1.9.2. FAUNA:

Birds including sparrows and crows were observed in the vicinity of the project area. And during the interview of the local peoples, they reported the presence of jackal's and dogs in the night.

3.1.10. SOCIOECONOMIC ENVIRONMENT:

“The socioeconomic environment is one the component of the regional ecosystem.” The development projects can impact either negatively or positively to the regional socio economic environment.

The socioeconomic environment is one the component of the regional ecosystem.” The development projects can impact either negatively or positively to the regional socio economic environment.

3.1.10.1. POPULATION

According to the local people the estimated population of nearby three villages present in the project area is approximately 25000 persons.

3.1.10.2. PROFESSION

Main profession of the area is agricultural activities however some of the peoples are doing jobs in different institutes of the District and upcountry.

3.1.10.3. INCOME

Per-capita income in the surrounding area is approximately 25000-35000 Pakistani rupees.

3.1.10.4. EDUCATION LEVEL

Literacy rate in the area is approximately ranging from 15-25% (Source: UC Chairman of village Babarkhai, Gehlan.

3.1.10.5. LANGUAGE

The popular language of the area is “Punjabi”

3.1.10.6. CULTURAL DIVERSITY

The important cultural events in the district are the Urs of Baba Bulleh Shah and Urs of Baba Imam Shah Bukhari as well as the Urs of Baba Sheikh Bhago. Kasur is also known in folklore for its slippers. A famous Punjabi folk song is: "JuttiKasuri, Pairenapuri, hairab baves ahnuturnapaya." (The slippers of Kasur don't fit me, Oh God, I had to walk!) Food:



The staple food of the area is wheat, rice and pulses. Inferior grains are not generally eaten. Meat is frequently eaten specially in the urban towns. Wheat (flour) is baked in the form of chapattis on an iron plate placed on the fire hear.

3.1.10.7. QUALITY OF LIFE VALUES

Quality of life the in the project area is poor as there are no proper sanitation system and basic health facilities. Some of the important factors are discussed are below;

3.1.10.8. HEALTH & EDUCATION

Basic health & education facilities are available in the rural area of the project site but these health and educational facilities are not sufficient. People have to visit the city Chunian and Kasur for the proper health and educational facilities.

3.1.10.9. COMPENSATION IN MONEY TERMS

As the project has been developed on the land of proponent and people are not getting affected from the project.

3.1.10.10. ARCHAEOLOGICAL AND HISTORICAL TREASURES

Archaeological or historical treasures within the project area are not available.

3.1.10.11. LAB REPORTS OF ENVIRONMENTAL ANALYSES

Lab reports of ambient air, drinking water and noise level monitoring of project area is annexed as **Annexure-D**.



CHAPTER # 4

4. CONSIDERATION OF ALTERNATIVES

4.1. Site alternatives:

The land for the proposed project is owned by the proponent, which is a crucial factor in ensuring the smooth execution of the project. No alternative sites were considered, as the selected industrial area is deemed best suited for the proposed raw leather processing unit. The industrial area already has the necessary infrastructure in place, including access roads, communication facilities, electricity, and basic utilities like sewerage, making it an ideal location.

In addition to the availability of essential infrastructure, the site is environmentally suitable, with a focus on maintaining a clean and sustainable environment. The project is expected to benefit the local community by providing increased employment opportunities and contributing to the region's economic growth.

Given the availability of the land, the necessary infrastructure, and the proximity to an industrial area, the selected site is ideally suited for the proposed construction of the raw leather processing unit for the production of wet blue by M/S Kasur Tanneries Pvt. Ltd.

4.2. Technology Alternatives:

The proposed development will be done 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 Kasur Tanneries (Pvt.) Limited 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 site is located in Manawala, District Kasur, Pakistan. The site is situated in an industrial area where various industries, including tanneries, are already operational. These industries are complying with the Punjab Environmental Quality Standards (PEQS) by installing necessary pollution control devices. The establishment and Construction of this raw leather processing unit for the production of wet blue in this area are expected to have minimal impact on the daily lives of the local population in Kasur.



The project proponent is committed to ensuring the regular maintenance of the Effluent Treatment Plant (ETP) during the operational phase of the project to ensure that the effluent remains within the prescribed PEQS limits. This will help minimize any adverse water pollution impacts. Additionally, the proponent has assured that the vehicles used in the transportation and operations related to the tannery will be properly maintained, minimizing vehicular emissions and ensuring compliance with environmental standards.

In conclusion, the selected site in the industrial area of Manawala, District Kasur, is well-suited for the proposed project, as it aligns with existing industrial activities and is capable of meeting the necessary environmental standards.

4.4. Economic Alternatives

The project proponent intends to undertake the proposed construction of a raw leather processing unit for the production of wet blue at Kasur Tanneries Pvt. Ltd. The Construction of this project will contribute to the sustainability of the tanning industry, as the project will ensure that no untreated wastewater is released into the environment. The establishment of an effective Effluent Treatment Plant (ETP) will ensure that all wastewater is treated to meet environmental standards before discharge, promoting environmental stewardship and minimizing pollution.

Furthermore, the project will accelerate the economic development of the Kasur district. Pakistan, by contributing to the local economy through job creation during both the Constructional phase and the operational phase, providing jobs for laborers, workers, and managerial staff., increased industrial activity, and export potential. This will help strengthen Pakistan's position in the global leather industry, fostering long-term economic growth.



CHAPTER # 5

5. SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & THEIR MITIGATION MEASURES

5.1. Environmental Impacts during the Constructional 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 Constructional 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 Constructional 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 Constructional 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 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 Constructional activities**

Solid waste generation due to domestic and Constructional 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 Constructional 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 arise during the Constructional 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



5.2. 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.

5.3. 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 process, 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

5.4. 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.

5.5. 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 and operation activities.
- 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 through waste treatment facility that will be installed within the premises of the subject project.
- 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.

5.6. 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.

5.7. 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 Kasur Tanneries Pvt. Limited (Unit-II) 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 Kasur Tanneries Pvt. Limited (Unit-II) 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 Kasur Tanneries Pvt. Limited (Unit-II) 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 constructional phase.
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.

6.7. Equipment Maintenance Detail

The subject project of raw leather processing unit (wet blue) under the name of M/S Kasur Tanneries Pvt. 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 (EMP) FOR RAW LEATHER PROCESSING UNIT BY M/S KASUR TANNERIES PVT. LTD.

DURING CONSTRUCTIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Air Quality (Dust & Emissions)	Dust and emissions from construction activities, machinery, and vehicles	<ul style="list-style-type: none"> - Use water sprinkling techniques to suppress dust during excavation, demolition, and material handling activities. - Ensure all construction machinery is regularly maintained to reduce exhaust emissions. - Apply dust suppressants on unpaved roads and construction sites. 	Site Manager, Contractor
Noise Pollution	Noise generated by construction machinery, equipment, and worker activities	<ul style="list-style-type: none"> - Limit construction work to specified hours - Provide noise barriers or acoustic enclosures around noisy equipment or machinery. - Use quieter machinery where possible. 	Contractor, Site Manager
Water Quality (Effluent & Runoff)	Contamination of local water bodies due to runoff from construction site	<ul style="list-style-type: none"> - Install silt fences around construction zones to minimize soil erosion. - Treat any runoff or wastewater using sedimentation tanks before discharge into water bodies. - Ensure no hazardous materials are discharged into water systems. 	Environmental Officer, Site Manager
Waste Generation (Construction Debris & Hazardous Waste)	Solid waste such as construction debris, hazardous materials like chemicals, paints, etc.	<ul style="list-style-type: none"> - Implement waste segregation and recycling practices (separate concrete, metal, wood, and hazardous waste). - Store hazardous materials in secure containers, away from water sources. - Dispose of waste following local regulations. 	Waste Management Team, Site Manager



DURING CONSTRUCTIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Soil Erosion & Sedimentation	Erosion and sedimentation from excavation and soil disturbance	<ul style="list-style-type: none"> - Install erosion control measures such as silt fences, mulching, and ground cover. - Stabilize disturbed areas immediately after construction is completed. - Avoid excavation during heavy rainfall. 	Contractor, Environmental Officer
Traffic Management	Increased traffic flow and congestion due to delivery trucks and construction vehicles	<ul style="list-style-type: none"> - Create a traffic management plan to minimize congestion, scheduling deliveries during off-peak hours. - Establish clear signs and barriers to direct traffic safely around the construction site. - Provide workers with proper transport arrangements to minimize local road usage. 	Coordinator, Site Manager
Health & Safety Risks (Workers)	Potential accidents and health risks to workers on site from machinery, chemicals, and dust	<ul style="list-style-type: none"> - Provide workers with appropriate Personal Protective Equipment (PPE) such as helmets, gloves, goggles, and masks. - Conduct regular safety training sessions. - Set up safety barriers around hazardous zones. 	HSE Manager, Site Manager



DURING OPERATIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Air Quality (Emission from Tanning Process)	Emissions from chemical processes, machinery, and volatile organic compounds (VOCs) during tanning	<ul style="list-style-type: none"> - Install air filtration systems such as scrubbers and fume extractors to capture harmful gases and particulates. - Use low-emission machinery and equipment in the processing area. - Ensure proper ventilation to limit air contamination. 	Operations Manager, HSE Manager
Water Quality (Effluent Management)	Contamination of water sources from tanning wastewater containing chemicals	<ul style="list-style-type: none"> - Install an advanced Effluent Treatment Plant (ETP) to treat and neutralize hazardous chemicals before discharge. - Regularly monitor the effluent quality to comply with environmental standards. - Recycle treated water in the facility for non-consumption activities like cleaning. 	ETP Manager, Environmental Officer
Water Consumption	Excessive water consumption for soaking, tanning, and dyeing processes	<ul style="list-style-type: none"> - Implement water-efficient technologies such as closed-loop systems. - Regularly monitor water usage and implement practices to optimize consumption (e.g., reuse process water where possible). - Educate staff on water conservation practices. 	HSE Manager, Operations Manager
Waste Generation (Leather Scraps, Chemical Waste)	Generation of solid waste (leather scraps) and hazardous waste (unused chemicals, dyes)	<ul style="list-style-type: none"> - Set up a dedicated waste management system for segregating leather scraps, chemicals, and other by-products. - Recycle leather scraps for use in other industries (e.g., footwear, upholstery). - Ensure safe disposal of hazardous chemicals by certified disposal companies. 	Waste Management Team, Operations Manager



DURING OPERATIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Energy Consumption	High energy use for machinery, lighting, and tanning processes	<ul style="list-style-type: none"> - Invest in energy-efficient machinery and lighting systems (e.g., LED lights, energy-efficient pumps). - Use renewable energy sources such as solar or wind power where feasible. - Implement energy conservation programs like routine maintenance and upgrading old systems. 	HSE Manager, Operations Manager
Chemical Use & Management	Environmental and health risks associated with improper handling and storage of chemicals	<ul style="list-style-type: none"> - Store chemicals in well-ventilated, secure areas with proper signage and emergency spill kits. - Ensure that Material Safety Data Sheets (MSDS) are available and accessible to all workers. - Regularly train staff on safe handling and emergency response procedures. 	HSE Manager, Store Manager
Health & Safety (Occupational Hazards)	Risks to workers from exposure to chemicals, machinery, and hazardous environments	<ul style="list-style-type: none"> - Provide personal protective equipment (PPE) for workers such as gloves, masks, and eye protection. - Regular health and safety audits. - Conduct routine worker training on the safe handling of chemicals and machinery. 	HSE Manager, Operations Manager
Solid Waste Management	Disposal of non-recyclable waste generated from production activities	<ul style="list-style-type: none"> - Establish waste segregation and recycling programs for different waste streams (e.g., general waste, chemical waste). - Contract with certified waste disposal companies for hazardous waste. - Minimize the amount of waste generated through lean production techniques. 	Waste Management Team, Environmental Officer



DURING OPERATIONAL PHASE			
Environmental Aspect	Impact	Recommendation / Mitigation Measure	Responsibility
Storage and Handling of Raw Materials	Risk of leaks or spills from improper storage of raw hides, chemicals, and dyes	<ul style="list-style-type: none"> - Ensure proper storage conditions for hides (cool, dry places) to prevent spoilage. - Use sealed, leak-proof containers for storing chemicals and dyes. - Implement spill containment measures (e.g., spill kits, secondary containment) in storage areas. 	Store Manager, Operations Manager
Noise & Vibration	Noise from machinery during leather processing and operations	<ul style="list-style-type: none"> - Install noise control systems (e.g., soundproof enclosures for noisy machinery). - Maintain machines regularly to minimize noise. - Limit the operation of high-noise equipment during late hours. 	Operations Manager, HSE Manager
Traffic Management (Dispatch)	Increased local traffic due to transportation of finished products	<ul style="list-style-type: none"> - Develop a traffic management plan for incoming raw materials and outgoing finished products. - Schedule transportation during off-peak hours. - Ensure that delivery vehicles are maintained to reduce traffic congestion. 	Transport Coordinator, Operations Manager



6.10. ENVIRONMENTAL MONITORING PLAN

Monitoring plan to be enforced during both constructional and operational phase will be implemented by the Project Manager of M/s Kasur Tanneries(Pvt.) Ltd).

An Environmental Monitoring Plan has been prepared for the subject project which is given below. Environmental monitoring will be conducted during constructional and operational phase on regularly basis.

Laboratory analysis/monitoring will be conducted for ambient air quality, water quality, and noise at the subject project and Environmental Monitoring Log book will be submitted to the EPA Punjab.

6.10.1. AIM OF MONITORING

The aim of monitoring is to oversee the environmental performance of the project through its lifecycle enforcing the PEQS. Timely implementation of mitigation measures leads to sustainable environmental management of the project.

6.10.2. OBJECTIVES OF MONITORING

Salient objectives of the environmental monitoring program are as under:

- To ensure effective surveillance of the environmental parameters at various stages of the project development.
- To enable the management, undertake the required mitigation measures when needed.
- To ensure compliance with the PEQS and legal obligations.

6.10.3. 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 Environmental Parameters is recommended:

6.10.3.1. AMBIENT AIR

Regular monitoring for Ambient Air should be conducted during construction and operational phase of the project and report should be submitted to EPA Punjab.



6.10.3.2. NOISE

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

6.10.3.3. WATER QUALITY

Regular monitoring for water quality should be conducted and report should be submitted to EPA Punjab.

Recommendation: Environmental Monitoring data log book should be maintained by the project proponent.



CHAPTER # 7

7. STAKEHOLDERS PARTICIPATION

Stakeholder consultation is a critical part of the Environmental Impact Assessment (EIA) process for any project. For the proposed project by M/s Kasur Tanneries Pvt. Limited, a series of consultations were held with various stakeholders from the local community, government agencies, and other relevant groups to gather their feedback on the project's potential social, economic, and environmental impacts. The consultations aimed to provide a platform for stakeholders to voice their concerns, suggestions, and expectations regarding the project.

7.1. METHODOLOGY OF CONSULTATION

The EIA team conducted public consultations through group meetings and individual discussions. A Comprehensive questionnaire was developed in order to conduct the survey. The primary focus was to engage local communities and gather their perspectives on the proposed construction of the facility, its potential benefits, and any concerns related to environmental impacts. The consultations targeted stakeholders including local residents, government officials, and business owners from the surrounding area. Public discussions were held at various locations near the project site, and stakeholders from local communities, educational and health institutions, shops, and other facilities were consulted. The team also made initial visits to the project site and held reconnaissance meetings to understand the local context better.

7.2. STAKEHOLDER IDENTIFICATION

A three-tier approach was adopted for stakeholder identification, which considered the various levels at which stakeholders could be impacted by the project. The stakeholders were classified at the provincial level (e.g., Environmental Protection Agency (EPA), Agriculture Department, Wildlife Department), district level (e.g., local government bodies), and village level (e.g., local residents, shopkeepers, school representatives, etc.). The consultations continued throughout the project lifecycle, ensuring that feedback was integrated into the environmental management plan. Regular engagement with these stakeholders is crucial to maintain transparency and responsiveness to their concerns.

7.3. PROPONENT'S ENVIRONMENTAL MANAGEMENT TEAM

M/s Kasur Tanneries Pvt. Limited management assured that all necessary mitigation measures would be implemented to minimize any potential environmental impacts during the



construction and operation phases of the project. The proponent's Environmental Management Team will oversee the adoption of these measures, including maintaining the aesthetics of the area and addressing concerns related to environmental degradation.

7.4. RESPONSIBLE AUTHORITY

The responsibility for overseeing the implementation of the proposed mitigation measures lies with the management of M/s Kasur Tanneries Pvt. Limited. The company is committed to adhering to all environmental regulations and ensuring that the project's impact on the surrounding community and the environment is minimized.

7.5. OTHER DEPARTMENTS AND AGENCIES

For the impact analysis, detailed meetings were held with local community leaders, educational institutions, health facilities, and NGOs. These discussions helped identify key issues related to the project and its potential effects. All relevant concerns were incorporated into the Environmental Management Plan to ensure a holistic approach to mitigating the project's impacts.

7.6. ENVIRONMENTAL PRACTITIONERS AND EXPERTS

The team of environmental consultants from M/s Pak Green Enviro-Engineering (Pvt.) Ltd. conducted site visits and consultations with stakeholders from nearby villages. They gathered information on the socio-economic impacts of the project and incorporated feedback from different professionals, including local business owners, farmers, teachers, and health professionals. The consultations with women were also conducted, although some hesitated to provide personal information due to social constraints.

7.7. AFFECTED AND WIDER COMMUNITY

No specific community was found to be directly affected by the project within the study area. The consultations with the local population revealed a general positive response toward the project. Stakeholders emphasized that the project could bring tangible benefits, such as job creation and local development, while ensuring that mitigation measures were taken to preserve the environment.

7.8. CONSULTATION FINDINGS

The results from the consultation meetings with stakeholders indicate a strong overall support for the project. The local community members expressed positive feedback regarding the project's potential to bring socio-economic benefits to the area, particularly in terms of



employment opportunities and business growth. Many respondents felt that the construction of the project would improve the local infrastructure, contribute to social mobility, and increase the importance of the area.

However, there were also concerns raised regarding the potential environmental impacts, especially in relation to the potential effects on the area's aesthetic value and the environment. Some participants were worried about the impact on the scenic beauty of the area, but the project proponents assured that mitigation measures, such as land reclamation and maintaining the aesthetics of the area, would be implemented to address these concerns.

7.9. STAKEHOLDER FEEDBACK

The responses from stakeholders, summarized below, provide a more detailed picture of their views: Stakeholder's Consultation forms are attached with this report as **Annexure-F**.

7.9.1. SAMPLE SIZE

20 sample size was selected by the Team of consultants for conducting the socioeconomic survey. Women were also consulted for the said survey; some of their names are mentioned in the above list of respondents while most of them were not willing to give personal information.

7.9.2. STATISTICAL ANALYSIS

Two Different statistical software excel and SPSS have been used for the statistical analysis of the data collected during the visit of study site villages through questionnaires.

7.10. RESULTS AND DISCUSSION

7.10.1. GENDER

The consultations involved 20 respondents, including both 11 male and 9 female participants.

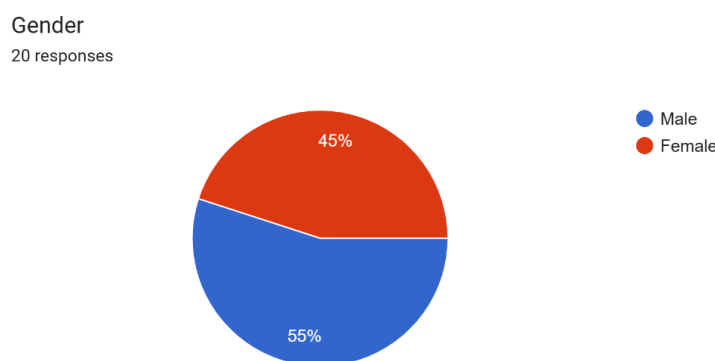


Figure 3: Gender of the Respondents

7.10.2. PROJECT SUPPORT AND IMPORTANCE

The majority of the respondents (11), both male and female, expressed strong support for the proposed project. Most (9) agreed that the construction of the facility would increase the importance of the area, contributing to its overall growth and development. Participants were optimistic about the project's potential to raise the profile of the local community and enhance its standing within the region. The support for the project reflected a shared belief that it would bring significant benefits to the community.

Are you in favor of the proposed construction?
20 responses

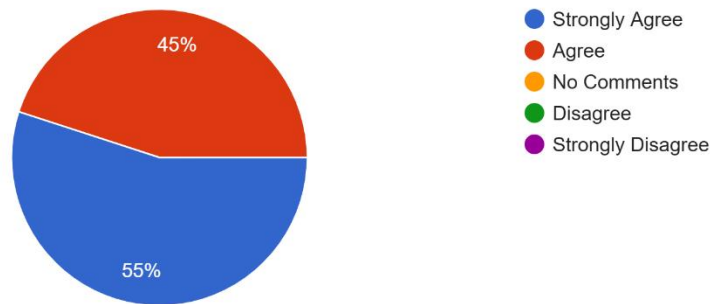


Figure 4: Respondents in favor of the Project

Will the project increase the importance of the area?
20 responses

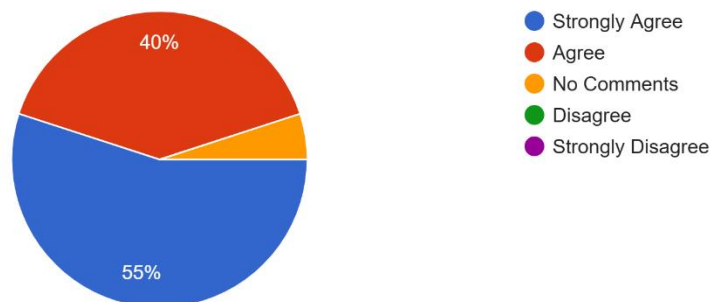


Figure 5: Respondents' Views on the Impact of the Project on the Importance of the Area

7.10.3. IMPROVEMENT OF LIVING STANDARDS

While many respondents believed that the project would improve the living standards of the area, a few raised concerns. Approximately, 17 respondents strongly agreed or agreed that the project would result in better infrastructure, more employment opportunities, and improved



services, which could enhance the overall quality of life. However, 3 individuals disagreed, possibly due to concerns over potential negative environmental impacts or uncertainties about the project's long-term benefits. Despite these reservations, the majority of the community seemed confident that the project would lead to better economic prospects.

Will the project help to improve the living standards of the area?
20 responses

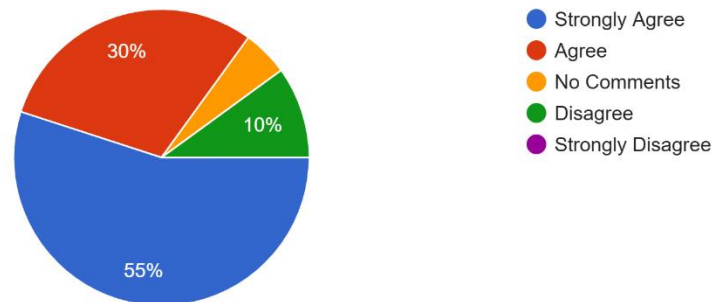


Figure 6: Respondents' Views on the Impact of the Project on the living standards of Area

7.10.4. ENVIRONMENTAL IMPACT CONCERNS

When asked about the environmental impact of the project, responses were varied. 14 respondents strongly disagreed and 3 disagreed that the project would have any negative effect on the environment, 1 showed concern regarding its potential to disrupt area's aesthetic value. 2 responders were neutral and given no comments.

Will the project affect the environment of the area?
20 responses

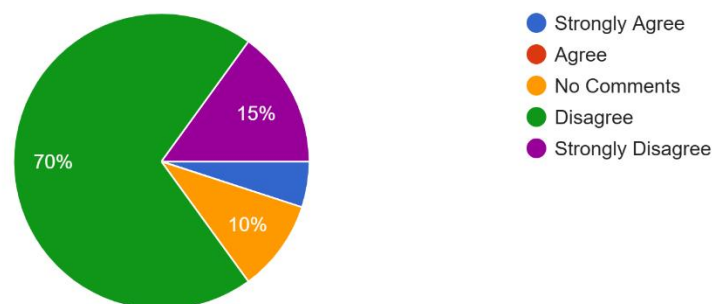


Figure 7: Respondents' Views on the Impact of the Project on the Environment of Area

7.10.5. SATISFACTION WITH THE PROJECT

In terms of satisfaction, a substantial number of participants expressed their contentment with the project and its potential benefits. 18 respondents indicated their approval, citing the job creation and economic growth the project would bring. Their positive outlook on the project reflected their anticipation of tangible improvements in their community. However, 2 individuals, were neutral regarding the project satisfaction.

Level of satisfaction?
20 responses

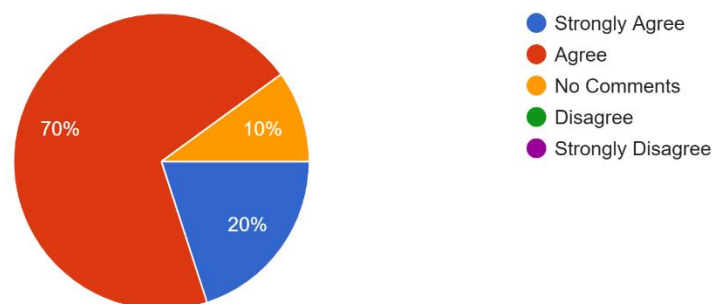


Figure 8: Respondents' Level of Satisfaction Regarding the Proposed Project

7.11. CONCLUSION

The stakeholder consultation process for the M/s Kasur Tanneries Pvt. Limited project demonstrated strong support for the initiative from the local community, with a clear recognition of its potential to boost the area's economic development. While environmental concerns were noted, the project proponents have committed to implementing mitigation measures to address these issues and maintain local aesthetic and environmental values. Continuous engagement with stakeholders throughout the project's lifecycle is crucial to ensure that any emerging concerns are promptly addressed



CHAPTER # 8

8. CONCLUSION AND RECOMMENDATIONS

8.1. CONCLUSIONS

The Environmental Impact Assessment (EIA) study indicates that the proposed tanneries and leather manufacturing facility project by M/s Kasur Tanneries Pvt. Limited is economically feasible, socially acceptable, and environmentally manageable. Upon completion, the project will provide significant benefits to the local community, including job creation and economic growth in the region. The project proponent is committed to adhering to all regulatory standards and ensuring an environmentally responsible implementation.

The project will implement sustainable practices in leather production and waste management, minimizing environmental impacts while contributing to industrial growth. Furthermore, M/s Kasur Tanneries Pvt. Limited intends to register the project with local authorities and establish comprehensive Emergency Preparedness and Response Standard Operating Procedures (SOPs) and Occupational Health and Safety SOPs to ensure the safety of workers and the surrounding environment.

8.2. MAIN ENVIRONMENTAL ISSUES

The primary environmental issues identified for the proposed tanneries and leather manufacturing facility include:

- Wastewater discharge and contamination risks due to chemical usage in leather processing.
- Air pollution from volatile organic compounds (VOCs) and odor emissions.
- Solid waste generation, including sludge and non-degradable materials.
- Occupational health and safety concerns for workers exposed to hazardous chemicals.
- Noise pollution from machinery and production activities.

8.3. RECOMMENDATIONS

Based on the findings of this study, further investigations are not required as the current assessment sufficiently addresses potential environmental impacts. The following mitigation and management measures are recommended for successful project implementation:



Effluent Treatment Plant (ETP):

- Install and operate a state-of-the-art ETP to treat all wastewater before discharge, ensuring compliance with national and international effluent standards.
- Regularly monitor and test effluent quality.

Air Quality Management:

- Implement air filtration systems and scrubbers to reduce VOCs and odor emissions.
- Ensure proper ventilation in all work areas.

Solid Waste Management:

- Segregate and dispose of solid waste responsibly, including sludge from the ETP, in compliance with environmental regulations.
- Explore options for recycling and reusing waste materials where feasible.

Worker Health and Safety:

- Provide Personal Protective Equipment (PPE), including gloves, masks, and chemical-resistant clothing, to all workers.
- Conduct regular health checkups and safety training for employees.

Chemical Handling:

- Adhere to Material Safety Data Sheets (MSDS) and best practices for the storage, handling, and use of chemicals.
- Implement spill containment measures and emergency response plans for chemical spills.

Environmental Enhancement:



- Undertake tree plantation and landscaping around the facility to enhance the aesthetic value and contribute to carbon sequestration.

Noise Control:

- Install noise-dampening systems on machinery and ensure proper maintenance to minimize noise levels.

Community Engagement:

- Engage with local communities through corporate social responsibility (CSR) initiatives, including health camps, education programs, and infrastructure development.

Emergency Preparedness:

- Establish and regularly update Emergency Preparedness and Response SOPs.
- Conduct periodic fire drills and chemical spill response training.

Energy Efficiency:

- Use energy-efficient equipment and adopt renewable energy sources where possible to minimize the carbon footprint of operations.

Monitoring and Reporting:

- Develop and implement an Environmental Management Plan (EMP) with clear monitoring and reporting protocols.
- Share periodic environmental performance reports with regulatory authorities and stakeholders.

Sustainability Initiatives:

- Explore opportunities to integrate eco-friendly tanning technologies and adopt water conservation practices to reduce resource consumption.

The current EIA report meets all necessary administrative and legal requirements, and it is recommended that environmental approval be granted for the project.