TABLE OF CONTENTS

LIST OF FIGURES 5
LIST OF TABLES 5
LIST OF ANNEXURES 6
LIST OF ABBREVIATIONS 7
EXECUTIVE SUMMARY 8
CHAPTER 1: SCREENING 13
CHAPTER 2: SCOPING 14
2.1 Spatial and Temporal Boundaries of Environmental Assessment 14
2.2 Important issues and concern raised during consultation 14
2.3 Significant Impacts and Factors to be Determined 15
CHAPTER 3: CONSIDERATION OF ALTERNATIVES 16
3.1 Site Alternatives, their selection and rejection criteria 16
3.2 Design/technology alternatives, their selection and rejection criteria 16
3.3 Environmental Alternatives, their selection and rejection criteria 16
3.4 Economic Alternatives, their Selection and Rejection Criteria 16
3.4.1 No-project option 16
3.4.2 Furnace technology 17
3.4.3 Material handling 17
3.4.4 Water quality 17
CHAPTER 4: DESCRIPTION OF PROJECT 18
4.1 General 18
4.2 Type and Category of Project 18
4.3 Project Objectives 18
4.4 Location and Site layout of Project 18
4.5 Site alternatives, their selection and rejection criteria 19
4.6 Design/technology alternatives, their selection and rejection criteria 19
4.7 Process, raw material and product alternatives 19
4.8 Pictures of project site and surroundings 19
4.9 Google earth map with coordinates 22
4.10 Land use on the site 22
4.11 Road Access 22
4.12 Vegetation Features 23
4.13 Cost and Magnitude of Operation 23
4.14 Schedule of Implementation 24
4.15 Description of Project 24
4.16 Project Process 25
4.16.1 Scrap receiving and sorting 26
4.16.2 Charging 26
4.16.3 Induction melting 26

4.16.4 Refining and alloying 26
4.16.5 Tapping and casting 26
4.16.6 Billet inspection and storage 26
4.16.7 Billets reheating 26
4.16.8 Hot rolling 26
4.16.9 Cooling bed and cutting 27
4.17 List of machineries/accessories 27
4.18 Supplies 27
4.18.1 Power Requirement 27
4.18.2 Water Consumption 27
4.18.3 Manpower 27
4.18.4 Personnel Protective Equipment 28
4.19 Management plans for operational system 28
4.19.1 Wastewater Management 28
4.19.2 Solid waste 28
4.19.3 Air emissions and control measures 28
4.19.4 Operational hours of the facility 29
4.19.5 Emergency Response 29
4.19.6 Health and Safety 29
4.20 Restoration and Rehabilitation Plan 29
4.21 Green or sustainable features planned 29
CHAPTER 5: DESCRIPTION OF ENVIRONMENT 30
5.1 Baseline Physical Environment 30
5.1.1 Topography & Geology 30
5.1.2 Seismicity 31
5.1.3 Climate 32
5.1.4 Ambient Air Quality 33
5.1.5 Ambient Noise 33
5.1.6 Wastewater Quality 34
5.2 Baseline Biological Environment 35
5.3 Baseline Socio-Economic Environment 36
5.3.1 Nearby Residences 36
5.3.2 Industry/businesses 36
5.3.3 Health Facilities 37

5.3.4 Educational Facilities 38
5.4 Lab Reports of Environmental Analysis 38
5.5 Suitability of the Site 38
CHAPTER 6: IMPACT ASSESSMENT 39
6.1 Methodologies for Impact Identification 39
6.2 Characteristics of Impacts 42
6.3 Project Impact Evaluation Matrix 43
CHAPTER 7: SCREENING POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES 45
7.1 Project Location 45
7.2 Design 45
7.3 Extension Phase 46
7.3.1 Soil Contamination 46
7.3.2 Air Emissions 47
7.3.3 Impact on Water Environment 48
7.3.4 Impact on Flora & Fauna 48
7.3.5 Impact on Noise Environment 48
7.3.6 Socio-Economic Impacts 49
7.4 Operational Phase 50
7.4.1 Impact on Ecology 50
7.4.2 Impact on Air Environment 50
7.4.3 Noise Environment 51
7.4.4 Solid Waste Management 51
7.4.5 Water consumption and wastewater production 52
7.4.6 Occupational Health and Safety 53
7.4.7 Security Risks 53
7.4.8 Emergency Response 54
7.4.9 Socioeconomic Impact 54
7.5 Potential Environmental Enhancement Measures 55
7.5.1 Enhancement in Employment Opportunities 55
7.5.2 Tree Plantation 55
CHAPTER 8: ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN 56
8.1 General 56
8.2 Objectives. 56
8.3 Proposed Mitigation Actions and Monitoring Program 56
8.4 Schedule for Implementation and Environmental Budget 64

8.5 Environmental Management Team 64
8.6 Proposed Monitoring program 64
8.7 Proposed EMP reporting and reviewing procedures 65
8.8 Environmental Training 66
CHAPTER 9: STAKEHOLDER CONSULTATION 67
9.1 General 67
9.2 Consultation Mechanism 67
9.3 Proponents Environmental Management Team 68
9.4 Responsible Authority 68
9.5 Other departments and agencies 71
9.6 Environmental Practitioners and experts 71
9.7 Affected and Wider Community 72
CONCLUSION AND RECOMMENDATIONS 76

LIST OF FIGURES

Figure 1. Aerial view of the project site....14
Figure 2. Surrounding pictures of the project site....21
Figure 3. Google earth map of project site with coordinates....22
Figure 4. Road access....23
Figure 5. Process flow chart of steel mill....25
Figure 6. Seismic zoning of Pakistan....31
Figure 7. Average temperature (a) and rainfall (b) in the project area....33
Figure 8. Nearby residential areas....36
Figure 9. Nearby businesses of the project area....37
Figure 10. Hospitals near project area....37
Figure 11. Educational institutes present near project area....38
Figure 12. Proposed Hierarchy of Monitoring team....64

LIST OF TABLES

Table 1. Cost breakdown....24
Table 2. Timeline for Project Development....24
Table 3. List of machineries used in steel mill....27
Table 4. Air Quality Monitoring Results....33
Table 5. Ambient Noise Monitoring Results....33
Table 6.Wastewater Analysis Results....34
Table 7.Impact Significance Criteria....39
Table 8. Impact Matrix Checklist for Construction Phase....40
Table 9. Impact Matrix Checklist for Operational Phase....41
Table 10. Impacts Characteristics....42
Table 11: Impact Evaluation Matrix....43
Table 12. Environmental Management Plan....58
Table 13. Proposed Monitoring Program....65
Table 14: Roles and Responsibilities....69
Table 15: Consultation with Environmental Practitioners and Experts....72
Table 16: Concerns Noted during Community Survey....73

LIST OF ANNEXURES

Following documents are attached as annexures:

Annex-A	Proponent CNIC
Annex-B	Land Ownership Documents
Annex-C	Proposed Site Layout Map
Annex-D	Certificate of Incorporation
Annex-E	Air Pollution Control Equipment Design Layout
Annex-F	Agreement of Slag Disposal
Annex-G	Baseline Monitoring Reports
Annex-H	Socioeconomic Survey Forms
Annex-I	Google Earth Map
Annex-J	Terms of references (TORs)
Annex-K	Glossary
Annex-L	References

LIST OF ABBREVIATIONS

CO_2	Carbon dioxide
dB(A)	A weighted decibel scale
EIA	Environmental Impact Assessment
EMP	Environmental Management Program
Engr.	Engineer
EPA	Environmental Protection Agency
WWTP	Wastewater Treatment Plant
IEE	Initial Environmental Examination
Ltd.	Limited
M/S	Messrs
m^3	Cubic meter
m^3/h	Cubic meter per hour
No.	Number
NOC	No Objection Certificate
NO_x	Oxides of Nitrogen
PEPA, 2012	The Punjab Environmental Protection (Amendment) Act, 2012
PEQS	Punjab Environmental Quality Standards
PKR	Pakistani Rupees
PM	Particulate Matter
PPEs	Personal Protective Equipment
Pvt.	Private
SOPs	Standard Operating Procedures
SO_x	Oxides of Sulfur
WAPDA	Water and Power Development Authority

EXECUTIVE SUMMARY

Title and Location of Project

This executive summary of Environmental Impact Assessment (EIA) Report presents a brief account of foreseeable environmental and social impacts likely to emanate from the project namely Extension of Steel Mill by M/s Sheikhoo Sugar Mills Limited (SSML) located at Anwar Abad, Tehsil and District Kot Addu. The land coordinates of the project site are **30°18'15.0"North** and **71°03'15.8"East** as latitude and longitude, respectively.

Proponent Details

The details of the proponent are as follow:

Proponent Details	
Proponent Name	Mr. Saqib Hameed (Group CFO/Company Secretary)
Company	M/S Sheikhoo Sugar Mills Limited
Office Address	Plaza No. CP 104, Defence Raya Fairways, Phase VI, DHA, Lahore.
Focal Person	
Name	Syed Arslan Bukhari
Contact Number	0307-2310048
Email address	arslan.bukhari@sheikhoosugar.com

Copy of proponent's CNIC is attached as **Annex-A.**

Name of Consultant

M/s Ecogreen Company (Pvt) Ltd. has been engaged for conducting EIA study of the above stated project. The main objectives of the said project are to establish baseline environmental conditions, identify potential environmental impacts and to suggest suitable mitigation measures accordingly. The contact details of the consultants are given below:

Consultant Details	
Consultant	**M/s Ecogreen Company (Pvt) Limited**
Address	2nd Floor, Plot # 7, A - Block Commercial Area, Canal View Society, Lahore
Contact No.	042-35294298 042-32355915
Email	info@ecogreen,com.pk
Focal Person	
Name	Dr. Areej Tahir
Designation	*Lead Environmental Professional*
Contact No.	0303-4804998
Email	Areej@ecogreen.com.pk

To prepare an EIA Report of the respective project the company nominated the following experts. The details of the experts are given below

Sr. #	Name	Qualification
Team Leader		
i.	Dr. Areej Tahir	Ph.D. Environmental Sciences
Environmental Scientist		
ii.	Ms. Kiran Irshad	M.Phil. Environmental Sciences

A brief outline of the proposal (type, process, technology and land requirement)

As per the provisions of the Punjab Environmental Protection (Review of Initial Environmental Examination and Environmental Impact Assessment) Regulations, 2022, this proposed project has been categorized under **Category B (18): "Steel Furnaces"** of the projects mentioned in **Schedule II.**

The instant project involves the extension of the steel mill of M/s Sheikhoo Sugar Mills Limited (SSML) within its existing premises (land ownership documents attached as **Annex-B**). SSML intends to enhance its total steel production capacity up to 650 MT/day through the installation of a 25 MT electric induction furnace. The principal activity of the project is the manufacture and sale of steel products. The proposed capacity enhancement will be carried out within the existing steel division of SSML, which covers an area of approximately **1,219,491 Sq. Ft**., of which the proposed project will occupy approximately **34,413 Sq. Ft (**Layout plan attached as **Annex-C)**. Total cost of the project is approximately **PKR 1 billion.** It is noteworthy that M/S Sheikhoo Sugar Mills Limited was incorporated in Pakistan on 3 January 1990 as a public limited company under the Companies Ordinance, 1984 (copy of incorporation certificate is attached as **Annex-D**)Steel division was set up later in 2018 within existing premises after obtaining Environmental Approval and other requisite permissions.

Salient Features of Project

Project Title	Extension of Steel Mill
Site Coordinates	30°18'15.0"North and 71°03'15.8"East
Total Area of steel division	**1,219,491 Sq.Ft.** approximately
Proposed Project Covered Area	**34,413 Sq.Ft.** approximately
Open Area	**852,353.25 Sq.Ft.** approximately
Final products	Steel billets and Grade 60 rebars
Cost of the Project	Approximately 1 Billion PKR

Environmental Budget	70 million PKR
Proponent Name	Mr. Saqib Hameed Group CFO/Company Secretary
Consultant Name	Ecogreen Company (Pvt.) Ltd.
Tree Planation	Trees will be planted along the boundary of Project Area and designated green areas as shown in the master layout.
Water Source	Muzaffargarh canal
Water Requirement	Instant project will require water for domestic purposes and cooling towers.
Wastewater	Domestic wastewater will be generated during constructional and operational phases whereas, no procedural wastewater will be generated as the cooling system is a closed loop system with zero discharge. The RO reject water will be used for secondary cooling of CCM billets.
Air Emissions	Only dust emissions will be generated during construction of the instant project while during operational phase, gaseous and dust emissions produced from furnace will be captured with air pollution control equipment i.e. baghouse filters. Thereby, the clean air in compliance with PEQS will be released into environment through chimney. Technical specifications and detailed engineering drawing of the air pollution control equipment is annexed with this report as **Annex-E**.
Solid Waste	Constructional and domestic solid waste generated during construction phase will be disposed off as practiced in area. The procedural waste mainly include slag which will be handed over to vendor for disposal as per agreement (attached as **Annex-F**).
Power source	Power requirement of the project will be fulfilled through Captive Power Generation of 28 MW capacity, 10.4 MW solar power plant and a standby generator of 2 MW capacity. Electricity will be the main input required by medium frequency electric induction furnace having capacity of 25 MT.
Production Capacity	This extension will enhance the total production capacity of the steel mills upto 650 MT/day
Manpower/Staff	Around 100-130 workers during construction phase while during operation phase, 50-60 workers will be hired.

Major Impacts and Recommended Mitigation Measures

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

a. Construction Phase

Anticipated impacts associated with the construction phase included noise (machine noise and vehicular noise), air emissions from earthwork, construction machinery and vehicles, whereas soil contamination due to leakage from or accidents of the construction or transportation vehicles or during on-site refueling, soflid waste from construction activities, municipal water and safety of the workers and employment conflicts are envisaged as the possible adverse environmental and social impacts. The said project is extension of steel mill which is to be undertaken within the existing premises of the Sheikhoo Sugar Mills Limited and as no human settlement exists within safe radius of selected site. Therefore, construction related impacts are not expected to extend to the community.

Mitigation measures recommended to be adopted during construction phase includes; running the machines/vehicles on good quality fuels, good working order ensuring regular maintenance, tuning and servicing, such as mufflers and silencers, etc. Water suppression and covered transportation and storage of the construction materials and slow driving on unpaved roads will be adopted to control dust emission. Solid waste of construction activities will be used for flooring, while the remaining solid waste will be managed as per practices in the area.

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

b. Operational Phase

No wastewater will be generated from the processes of the proposed project except for the reject water coming from Reverse Osmosis Plant that will be used for secondary cooling of CCM billets. The baghouse filter will be installed to control air pollution from the furnace (design layout of air pollution control attached as **Annex-E**). The slag generated from steel mill procedures will be handed over to the contractor for adequate disposal (**Annex-F**). Proper ventilation of building will be ensured and use of dust masks by workers will be adopted as a mitigation measure for safety of the workers. Recyclable waste including (PET bottles, PVC & PET sleeves, cardboard etc.) will be sold out to venders. Domestic waste will be handed over to garbage handlers as per practice of the area. Machinery will be regularly serviced and tuned to mitigate noise at source. Furthermore, noise barriers will block noise propagation and receptors will be protected by the use of PPEs. An Emergency Response Plan (ERP) will also be in place and the workers will be trained and guided about it.

Proposed Monitoring

During establishment & operation, monitoring will be carried out to check compliance of PEQS. Moreover, periodic monitoring should also be carried out regarding ambient air monitoring, noise pollution, wastewater & worker safety. A detailed site monitoring plan has been developed and given in **Chapter-08** of this EIA Report.

CHAPTER 1: SCREENING

For the prediction and mitigation of impacts associated with project implementation at an early stage of project development, it is pre-requisite under the environmental laws to undertake Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Study as the case may be. Based on its nature, size and related impacts, the project under consideration has been categorized for EIA As per the statutory notification of The Punjab Environmental Protection (Review of Initial Environmental Examination and Environment Impact Assessment) Regulations, 2022 made under Section 12 of Punjab Environmental Protection Act, 1997 (Amended 2012), which is reproduced as under;

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

As per Punjab Environmental Protection Act 1997 (amended 2012) and Punjab Environmental Protection (Review of Initial Environmental Examination and Environmental Impact Assessment) Regulations 2022, the project "Extension of Steel Mill by **M/S Sheikhoo Sugar Mills Limited**" falls under ***"Schedule II"*** *Category* ***B*** *Clause* ***18 – Steel Furnaces.***

Thus, an EIA Study has been conducted and report has been prepared for submission in EPA Punjab as prescribed to seek Environmental Approval/NOC.

CHAPTER 2: SCOPING

2.1 Spatial and Temporal Boundaries of Environmental Assessment

The said project is proposed within the existing premises of the mills and will be installed by adopting appropriate measures to avoid disturbance to local environment and if there are any impacts, the proper remedial measures will be taken. The employment opportunities for the locals will be increased and so will the GDP of the country. The products manufactured at the instant project will not only enhance socioeconomic of the proponent but will also reduce the demand and availability gap locally and internationally. The Google Earth Map (**Figure 1**) attached shows the aerial view of project site with nearby facilities like educational institutes, hospitals, residential areas etc. The impacts on socio economic factors and environmental parameters will be keenly observed throughout the life of project.

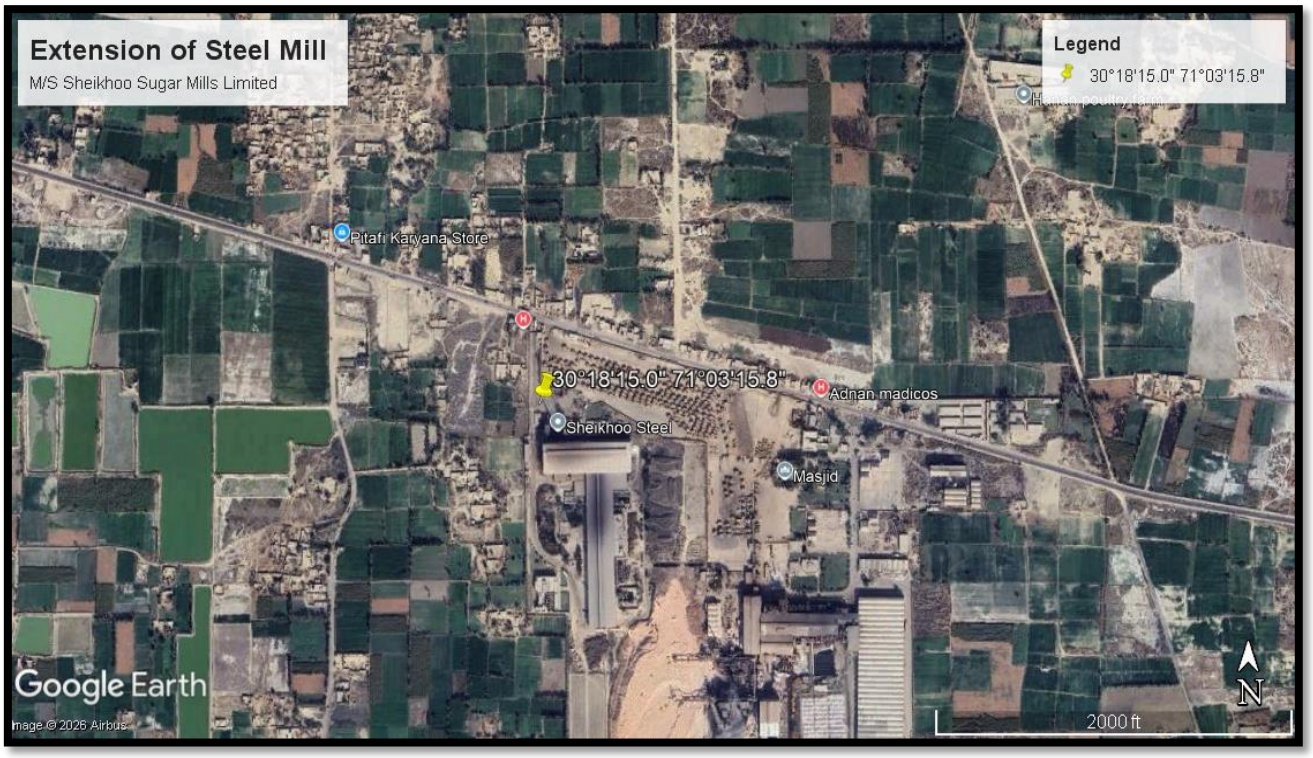


Figure 1. Aerial view of the project site

2.2 Important issues and concern raised during consultation

During consultation it was observed that maximum of people was in favor of project and following issues and concerns were raised. In chapter 9 Stakeholder Consultation it is mentioned in detail.

During survey following concerns of the local community, Government Departments and Environmental Practitioners and experts were noted:

- Locals should be preferred for the job opportunities.
- Adequate air pollution control equipment should be installed to ensure compliance with PEQS
- Wastewater should be treated and disposed off properly

- Solid waste should be managed effectively by adopting the standard practices of the area.
- Cleanliness of the area should be ensured.
- An effective EMMP should be designed and enforced with true spirit.
- Health of the workers should be ensured.
- Plantation should be carried out at extensive scale.
- Noisy activities should be confined.
- Indigenous tress around the facility should be planted to control air pollution.
- Tree cutting should be avoided to the extent possible.

2.3 Significant Impacts and Factors to be Determined

Main impacts and factors to be determined are

- Job opportunities for locals
- Tree plantation at designated green areas
- Occupational Health and safety
- Emergency preparedness
- Site Security
- Traffic Management
- Hygiene management
- Control Air emissions
- Confined noisy activities
- Resource conservation
- Excessive water consumption
- Energy efficient techniques must be adopted

CHAPTER 3: CONSIDERATION OF ALTERNATIVES

3.1 Site Alternatives, their selection and rejection criteria

No project site alternative was considered for the Extension of Steel Mill of M/S Sheikhoo Sugar Mills Limited as it is going to be executed within already existing unit/mill to enhance the production capacity. Hence, no site alternatives are considered for this project. The selected site is suitable for the following reasons:

- The site is owned by M/S Sheikhoo Sugar Mills Limited and there is no dispute associate with the landownership
- The site is located at a suitable distance from community.
- The site is accessible through main roads and infrastructure of that area is fully developed.

Keeping in view these requirements and the availability of land required for the instant extension, this site is best suited for the construction of aforementioned plant. It is envisaged that, there is no protected or environmentally sensitive area present in the vicinity of the project area that could be impacted due to the establishment of the said project. Accordingly, the selected site is ideally suited for the instant project as the site is located within existing premises of M/S Sheikhoo Sugar Mills.

3.2 Design/technology alternatives, their selection and rejection criteria

Extension of steel mill will be designed in line with contemporary environmental standards and regulations, while new techniques will be continuously incorporated into the design and technology where applicable.

3.3 Environmental Alternatives, their selection and rejection criteria

The extension of steel mill is expected to create low impacts on surrounding air quality as the mill will use air pollution control equipment to avoid release of air pollutants from furnace into the air, whereas, no wastewater will be generated as water required for processes will be recycled in closed loop. However, the RO reject produced will be used for secondary cooling of CCM billets. Moreover, plantation will minimize the emissions from vehicles by controlling its spreading in surrounding areas, thereby contributing positively to the regional environment.

The execution of the instant project will minimize the burden on solid waste during operational phase as produced domestic and reusable solid waste will be disposed off as per practices of area while the procedural waste will be sold out to vendors.

3.4 Economic Alternatives, their Selection and Rejection Criteria

3.4.1 No-project option

The no-project option is rejected as the mill is limited to 400 MT/day from two 20 MT furnaces. One new 25 MT furnace adds about 250 MT/day (assumed), reaching about 650 MT/day, an

increase of about 62%. The works cover about 34,413 sq ft within the existing 1,219,491 sq ft site, with no new land and about 50-60 new jobs.

3.4.2 Furnace technology

A third medium-frequency induction furnace, 25 MT, was selected to match the two existing 20 MT units (7,500 kW, 15.015 t/hr, about 500 kWh/t at rated power). This keeps operators, spares and the scrap-based process unchanged. An arc furnace was rejected on cost (about double) and dust, and blast furnace or cupola routes on scale and emissions.

3.4.3 Material handling

One 70 MT and one 15 MT EOT crane, three lifting magnets, two vibratory feeders of 30 t/hr and a 40 MT ladle transfer car were selected over forklifts and mobile cranes. This gives safer charging with fewer vehicle movements and less diesel exhaust.

3.4.4 Water quality

Three side-stream multimedia filters will treat part of the circulating water continuously, removing suspended solids and scale particles. This keeps the induction coils and heat exchangers clean and holds blowdown to about 0.4 m^3/hr. Blowdown will be reused for secondary cooling of CCM billets, so no routine discharge is planned. Chemical treatment alone was rejected as it increases blowdown and chemical use.

CHAPTER 4: DESCRIPTION OF PROJECT

4.1 General

Sheikhoo Sugar Mills Limited was incorporated in Pakistan on 3 January 1990 as a public limited company under the Companies Ordinance, 1984 (copy of Certificate is attached as **Annex- D**). Sheikhoo Group is the progressive industrial house of the country. Sheikhoo Group comprises of sugar and steel divisions. Sheikhoo Sugar Mills has been living this promise as Pakistan's top sugar provider for leading companies. Sheikhoo Steel is the newest venture of the Group, conceived with the aim to create steel products that become a bench mark for quality in Pakistan.

This section of the study concentrates on details of the proposed project and its salient features; such as; location, site layout, objectives, cost and magnitude of operation and various phases have also been examined as a response to possible environmental concerns.

4.2 Type and Category of Project

Punjab Environmental Protection Act 1997 (amended 2012) and Punjab Environmental Protection (Review of Initial Environmental Examination and Environmental Impact Assessment) Regulations 2022, the project "extension of steel mill by M/S Sheikhoo Sugar Mills Limited" falls under "**Schedule II" Category B, Clause** 18– Steel Furnaces.

4.3 Project Objectives

The objective of aforesaid project is to enhance the production capacity of steel products to meet market demand. The project will encompass modern state-of-the-art unit with the objective of initiating, producing and marketing, cost effective and superior quality products to improve the environment and well-being of the community. The above-said project will provide customized and quality products to cater the needs of steel by taking into consideration the best ways to reduce pollution and safeguarding the environment. The project will have following advantages:

- ✓ To meet the demand of steel products in the market.
- ✓ To manufacture steel and promote sustainable re-rolling of steel.
- ✓ Socio-economic up-lift of Sheikhoo Sugar Mills Limited and the local community through direct job placements and indirect business opportunities.
- ✓ To avoid environmental impacts by adopting best management practices.

4.4 Location and Site layout of Project

The proposed project is intended to be installed within existing premises of Sheikhoo Sugar Mills Limited in Anwar Abad, Tehsil and District Kot Addu. The geographical location of the said project is **30°18'15.0"North** and **71°03'15.8"East**. The site layout is attached herewith as **Annex-C**. However, the Google Earth Map showing the project location and its distance from nearby sensitive receptors is shown further.

4.5 Site alternatives, their selection and rejection criteria

No project site alternative was considered for the Extension of Steel Mill of M/S Sheikhoo Sugar Mills Limited as it is going to be established in already existing unit/mill to enhance the production capacity. Hence, no site alternatives are considered for this project.

Keeping in view these requirements and the availability of land required for the instant extension, this site is best suited for the construction of aforementioned plant. It is envisaged that, there is no protected or environmentally sensitive area present in the vicinity of the project area that could be impacted due to the establishment of the said project. Accordingly, the selected site is ideally suited for the instant project as the site is located within existing premises of Steel Mills.

4.6 Design/technology alternatives, their selection and rejection criteria

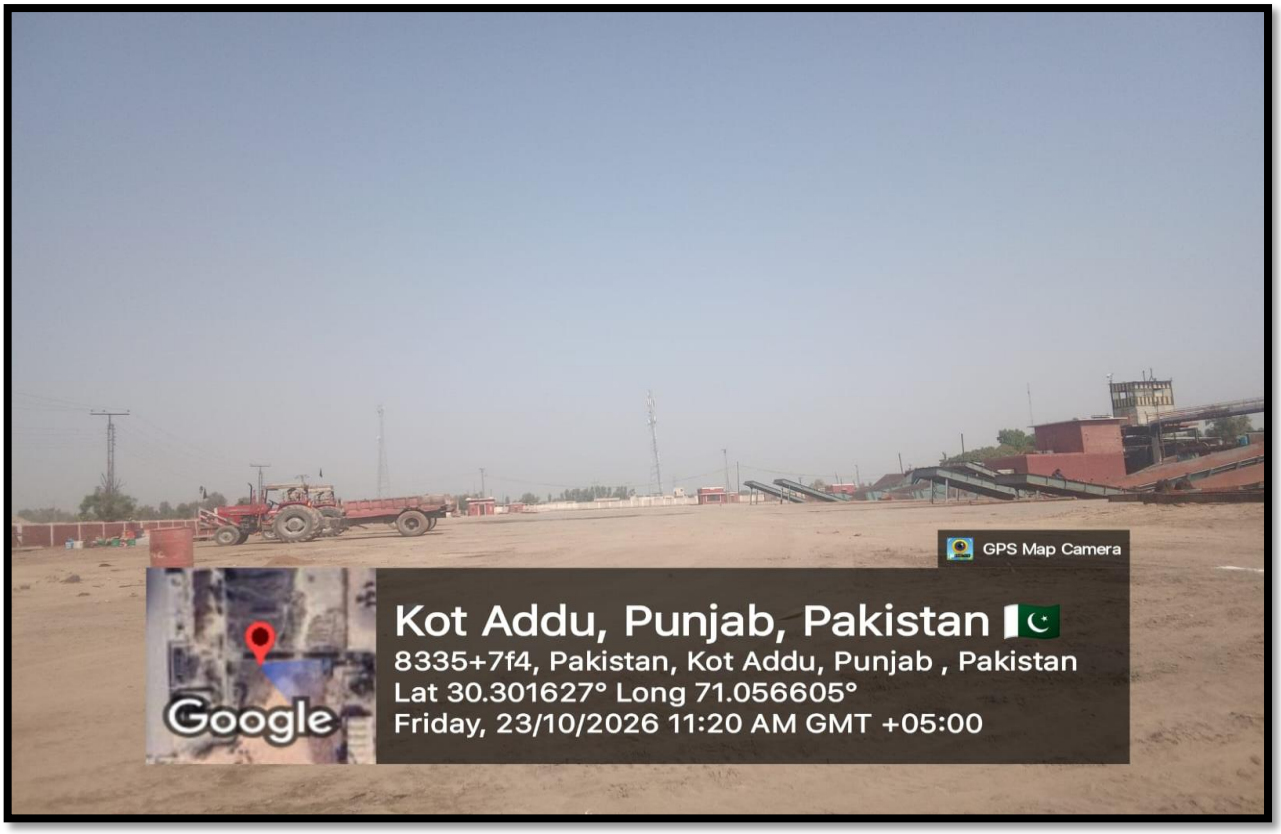
For existence of current project state of art technology has been selected to minimize emissions and ensure environmentally friendly operation. Proponent is doing heavy investment for this project so latest/state of art technology will be preferred to ensure good quality products.

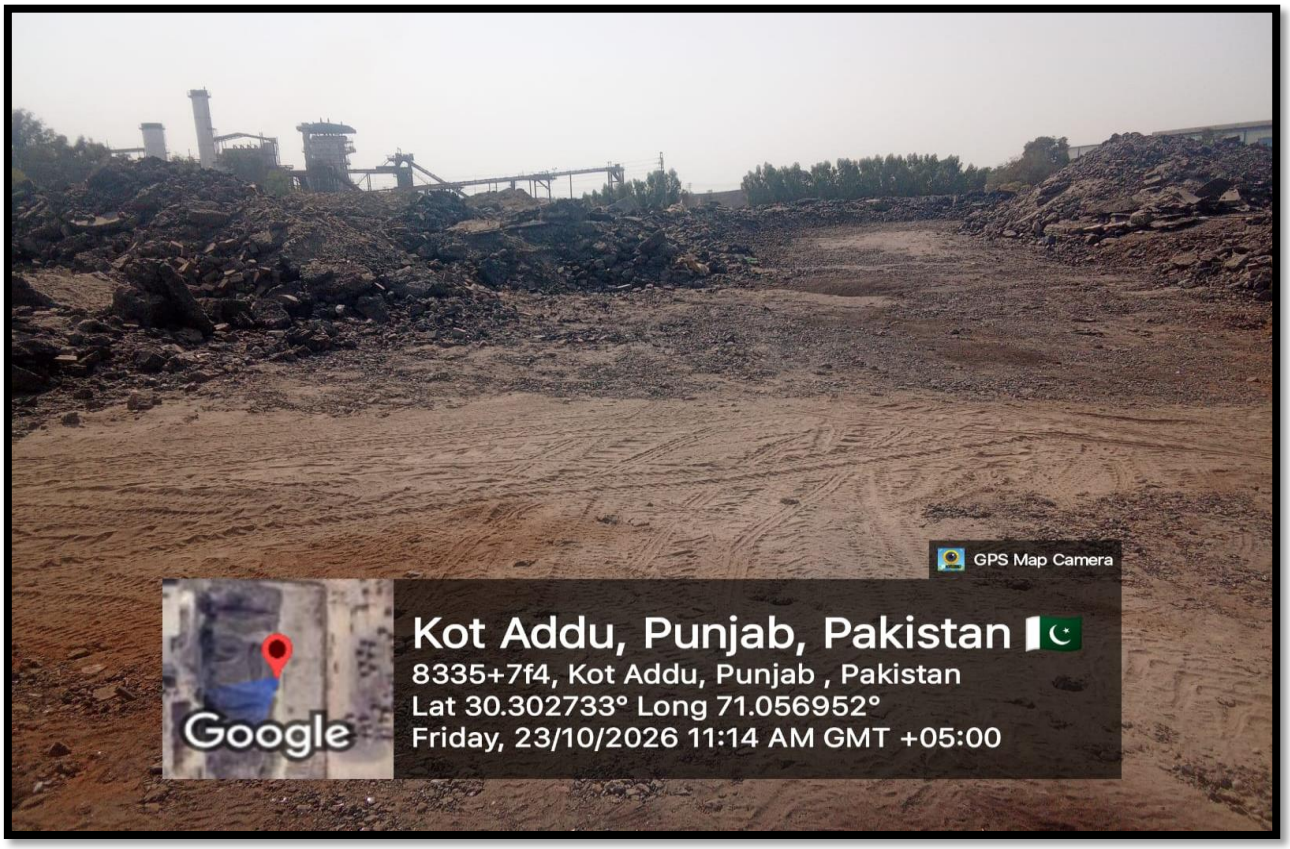
4.7 Process, raw material and product alternatives

No major alternatives were considered for the proposed project since it's a capacity enhancement project, therefore the existing procedures, raw materials, and manufactured products are already aligned with both national and international market demands. However, to ensure long-term sustainability and competitiveness, modern technologies will be introduced to improve production efficiency, minimize waste generation, and enhance the stability of products. The adoption of such measures will not only strengthen compliance with environmental and regulatory standards but also support continuous quality improvement.

4.8 Pictures of project site and surroundings

A pictorial view of the proposed project site is shown below


GPS Map Camera
Google
Kot Addu, Punjab, Pakistan
8335+7f4, Pakistan, Kot Addu, Punjab , Pakistan
Lat 30.301627° Long 71.056605°
Friday, 23/10/2026 11:20 AM GMT +05:00


GPS Map Camera
Google
Kot Addu, Punjab, Pakistan
8335+7f4, Kot Addu, Punjab , Pakistan
Lat 30.302733° Long 71.056952°
Friday, 23/10/2026 11:14 AM GMT +05:00

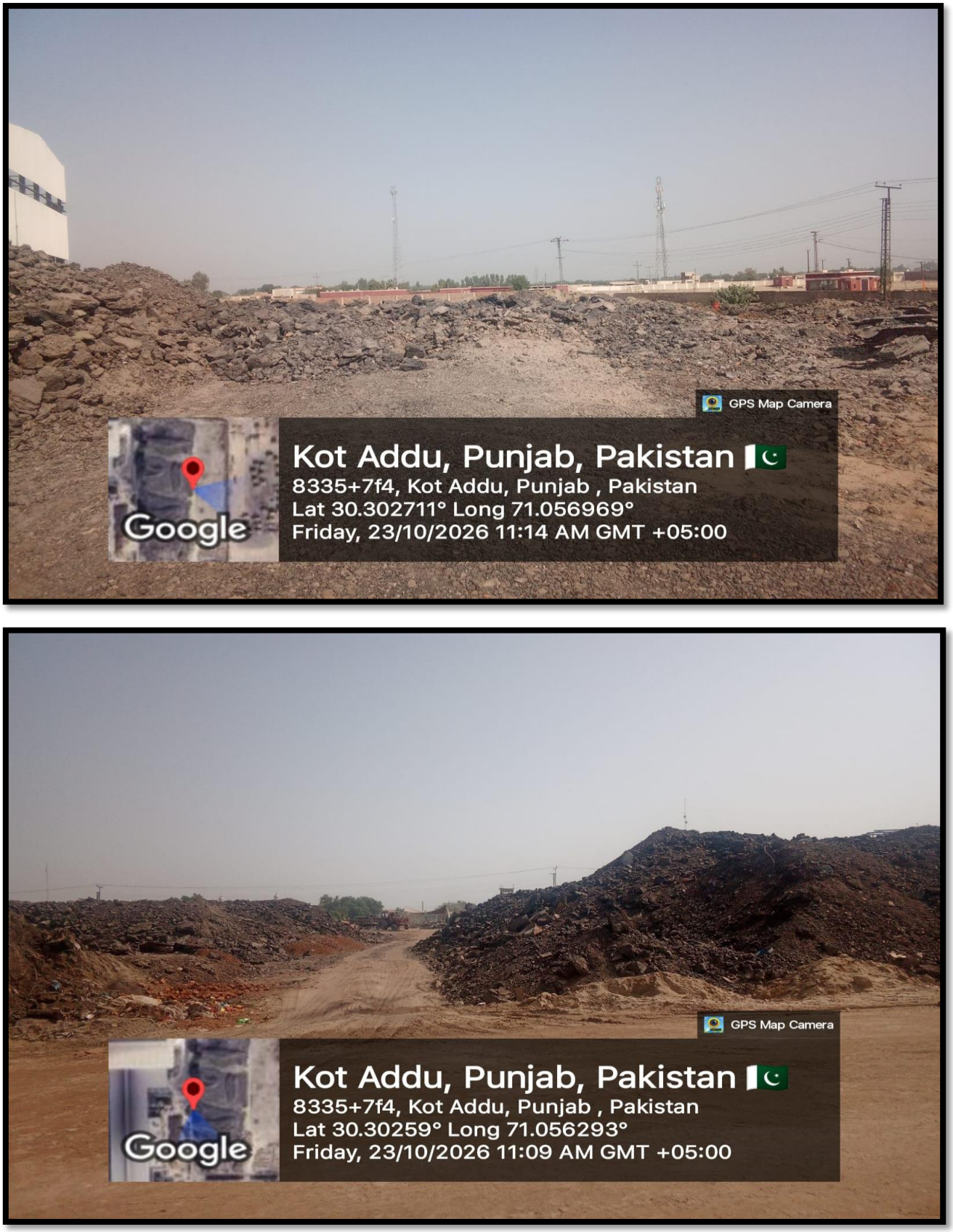


Figure 2. Surrounding pictures of the project site

4.9 Google earth map with coordinates

The google earth map of the aforesaid project along with coordinates is provided in **Figure 3**.

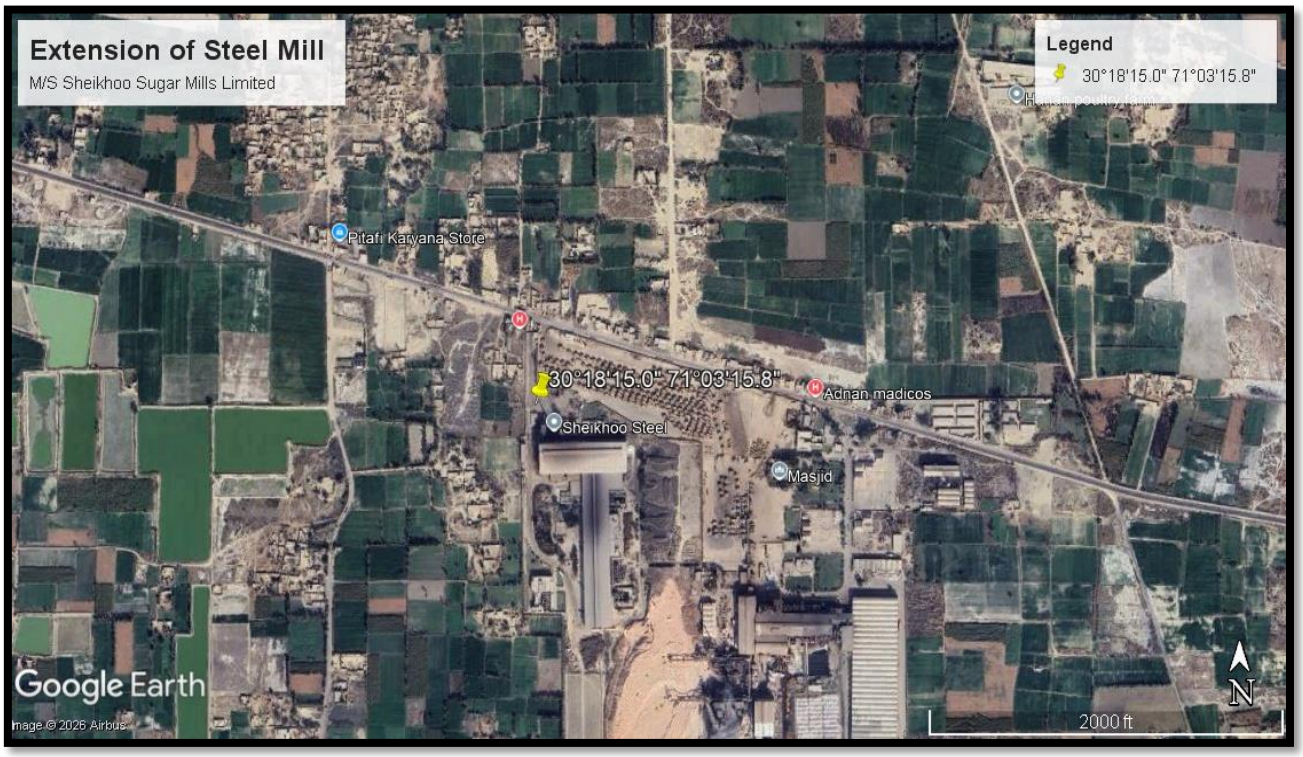


Figure 3. Google earth map of project site with coordinates

4.10 Land use on the site

The project is enhancement of production capacity and is going to be established within the existing mill premises. The said project is proposed and existing infrastructure will be used for installation of machineries and equipment as per the requirements.

4.11 Road Access

The site is accessible through Sinawan Sultan Colony Road at a distance of **0.2 km**. The road access map of project is attached below:

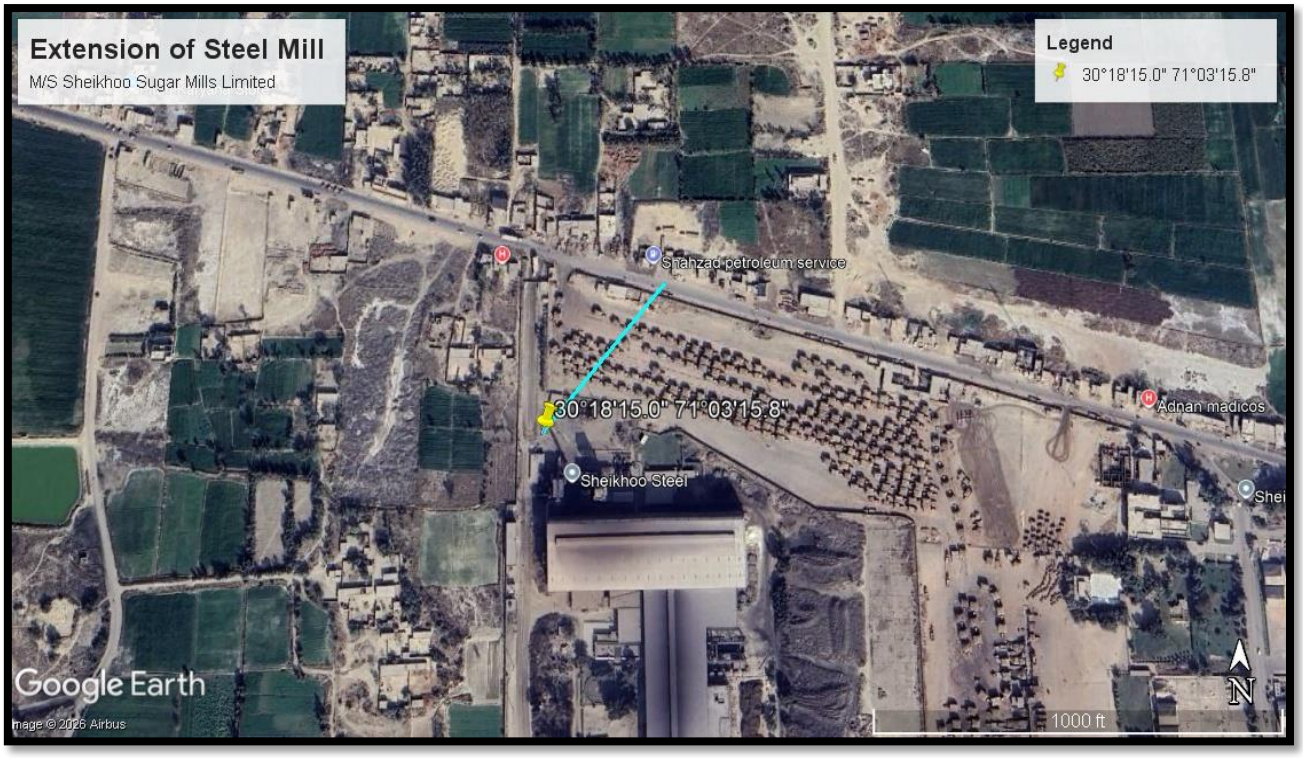


Figure 4. Road access

4.12 Vegetation Features

The site is located within the premises of existing steel mill, therefore, no vegetation will be uprooted for capacity enhancement of the aforesaid project. In study area following crops; wheat, rice and sugarcane are grown. The vegetative features of the study area include; safeeda, sheesham, peepal and kikar.

4.13 Cost and Magnitude of Operation

The estimated cost of aforesaid project is **approximately PKR 1 Billion**. Purchase of raw material, operation and maintenance of production machinery are the costly activities involved in the operation phase of said project. Equipment safety will be assured if these operations are carefully managed. However, budget will be allocated for purchase and maintenance of standardized PPEs for workers and for waste management and environmental enhancement. Despite these costs, this project was found to be financially feasible. Magnitude of operations includes:

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

The allocated environmental budget is **PKR 70 Million approx**. The allocated environmental budget will be spent on air pollution control, landscape/green zone management, solid waste

management, water treatment systems and its maintenance along with Environmental monitoring. The proponent will plant indigenous and ornamental plants to increase the aesthetic value of the area. Thus, the project is also a source of employment for locals and would help in economic development activities of the area.

Table 1. Cost breakdown

Value Capitalized for Extension of Steel Mill (PKR)	
Building cost	380 million
Electric installations	120 million
Environment Budget	70 million
Purchase of machineries	260 million
Miscellaneous costs	170 million
Total cost	**1 Billion**

4.14 Schedule of Implementation

The tentative schedule for said project implementation is approximately **8 months** and the detail timeline of the construction period is given in **Table 2:**

Table 2. Timeline for Project Development

Sr#	**Activities**	**4 Months**			**4 Months**		
		4W	***4W***	***8W***	***8W***	***4W***	***4W***
1	Detailed Designing						
2	Mobilization of Contractors						
3	Building Construction and Completion						
4	Site Restoration & Rehabilitation						
5	Plantation at Site						
6	Commissioning						
W=Weeks							

4.15 Description of Project

The said project is extension of steel mill by **M/S Sheikhoo Sugar Mills Limited** having covered area **34,413 Sq.Ft** and the cost of the project is **PKR 1 Billion Approx.** The existing total production capacity of the steel mills is approx. 400 MT / day which is proposed to be enhanced up to 650 MT / day with the installation of this new furnace having capacity 25 MT. Layout Map is attached as **Annex-C**.

4.16 Project Process

The said project is Extension of Steel Mill to increase the production of steel products. The products are steel billets and grade 60 rebars. The process is described below in the order in which material moves through the plant, and **Figure 5** shows the process flow diagram

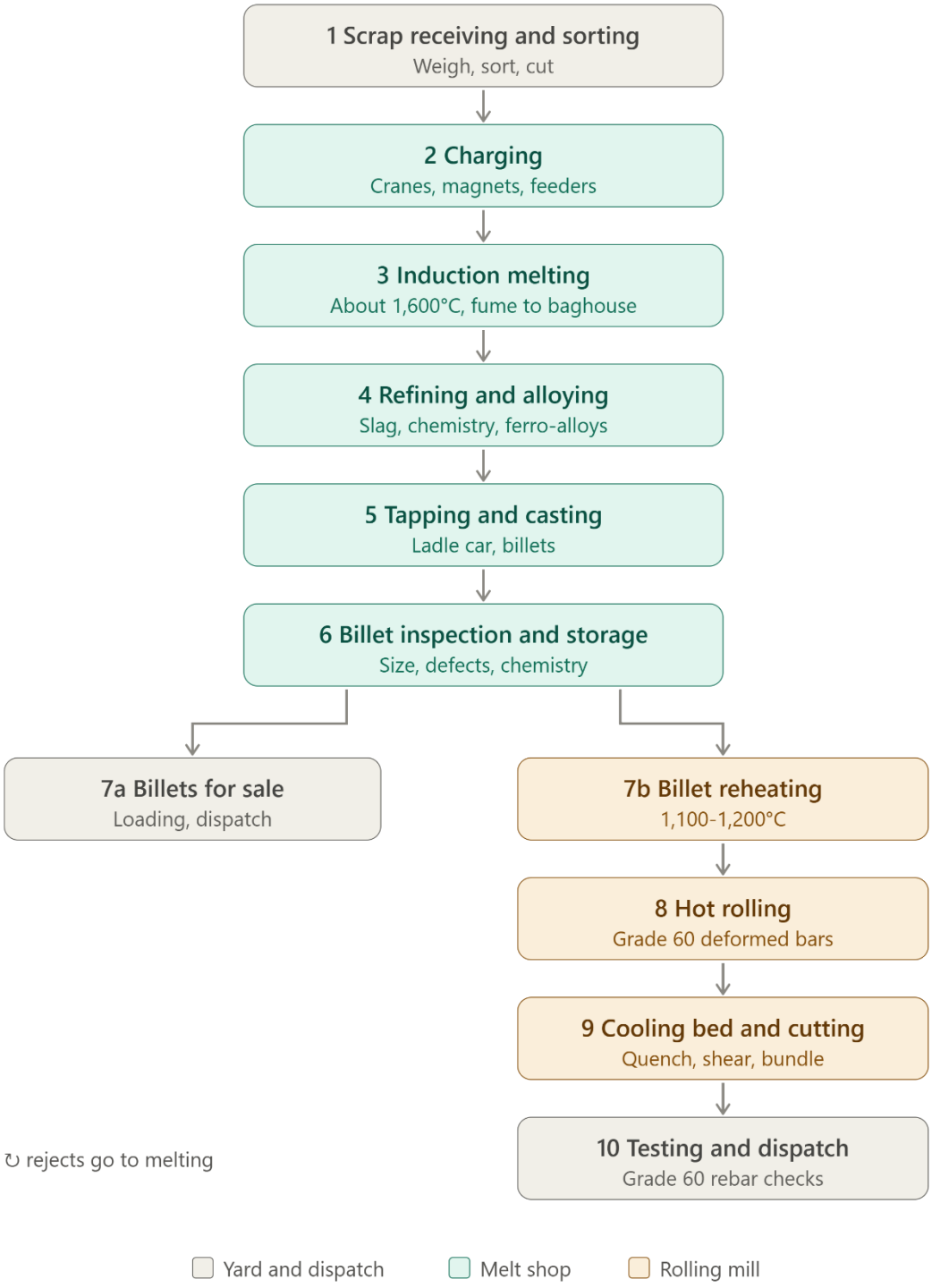


Figure 5. Process flow chart of steel mill

4.16.1 Scrap receiving and sorting

Ferrous scrap arrives by road and is weighed at the weighbridge. It is stored in the scrap yard by type, such as heavy melting scrap, shredded scrap and turnings. Oversize pieces are cut down, and non-metallic and non-ferrous contamination is removed.

4.16.2 Charging

The 70 MT and 15 MT EOT cranes, with electrical lifting magnets, move the scrap to the furnace. Two vibratory feeders of 30 tons/hr each meter it into the furnace at a controlled rate.

4.16.3 Induction melting

Medium-frequency current in a water-cooled coil heats the scrap in the crucible until it melts at about 1,600°C. At the rated melt rate of 15,015 kg/hr, a 20 MT heat melts in about 120 minutes, and the proposed 25 MT furnace works on the same principle. A hood above the furnace draws the fume to a baghouse before release through a stack. The cooling circuit, made up of the cooling towers, pumps, side-stream filters and RO-treated water, protects the coil and power supply.

4.16.4 Refining and alloying

Once the charge is molten, the slag is skimmed off. Ferro-alloys such as ferrosilicon and ferromanganese are added to remove oxygen and bring the steel to the chemistry for Grade 60, which sets its strength.

4.16.5 Tapping and casting

The furnace is tilted and the steel is tapped into a ladle, which the 40 MT ladle transfer car carries to the casting machine. The steel is cast into square.

4.16.6 Billet inspection and storage

Billets are cut to length and inspected for size, surface and internal defects, and chemical composition. They are stored on a billet yard with a loading area. From here the flow splits: some billets are sold, and the rest are rolled.

4.16.7 Billets reheating

Billets that are sold are loaded onto trucks and dispatched. This route has no reheating or rolling, so it adds no flue gas, mill scale or rolling water, but the loading and the yard produce dust and truck traffic. Billets for rolling are heated in a reheating furnace to about 1,100 to 1,200°C so that the steel is soft enough to shape.

4.16.8 Hot rolling

The heated billets pass through roughing, intermediate and finishing stands, with each pass reducing the section. The last pass uses ribbed rolls that press ribs and markings onto the surface, so that the bar grips concrete. Water cools the rolls and the bars and is recirculated through scale pits and settling tanks.

4.16.9 Cooling bed and cutting

The bars move onto a cooling bed. Grade 60 strength is usually finished here, by controlled water quenching. The cooled bars are cut to standard lengths by shear, bundled and tagged with grade and heat number.

4.17 List of machineries/accessories

Equipment/machinery to be used in steel mill are given in the table below.

Table 3. List of machineries used in steel mill

Sr#	Machinery	Quantities
1	Electric Induction Furnace 25 MT	1
2	EOT Crane 70MT	1
3	EOT Crane 15MT	1
4	Electrical lifting Magnet	3
5	Vibratory scrap Feeder 30tons/hr	2
6	Ladle transfer car 40 MT	1
7	Pumps 250m3/hr	3
8	Pumps 200m3/hr	2
9	Side Stream Multimedia Filters	3
10	Cooling Towers Steel 500m3/hr	1
11	Cooling Towers Steel 250m3/hr	2

4.18 Supplies

Following supplies will be required/used for steel processing mill.

4.18.1 Power Requirement

Power requirement of the project will be fulfilled through In-house steam turbine of 28 MW capacity, 10.4 MW solar power plant and a standby generator of 2 MW capacity.

4.18.2 Water Consumption

Water requirement will be about 18 m^3/day during construction and about 54 m^3/day during operation, comprising 50 m^3/day of cooling tower makeup and 3.7 m^3/day for domestic use. Cooling water circulates in a closed loop of 1,000 m^3/hr, and the existing 12 t/hr RO plant, run for about one hour a day, supplies the makeup.

4.18.3 Manpower

The factory workforce requirements will include both permanent staff and daily wagers. During construction, 135 workers and in operation phase about 61 workers will be hired to perform operations at mill.

4.18.4 Personnel Protective Equipment

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

- Protective Helmets
- Protective Goggles
- Ear Plugs
- Protective leather/rubber shoes
- Gloves-leather, canvas, rubber and plastic
- Protective shields
- Overcoats
- Surgical masks

4.19 Management plans for operational system

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

4.19.1 Wastewater Management

Instant project is the extension of steel mill which will generate wastewater from domestic usage during establishment while, domestic and RO reject water will be produced during operational phase. The RO plant will produce 7.5 m^3/day of reject water from operating one hour that will be used for secondary cooling of CCM billets whereas 3 m^3/day of domestic wastewater released during operation phase will be treated in septic tanks and released in nearby Ghazighat drain.

4.19.2 Solid waste

The solid wastes of the said project are municipal waste and slag generated from steel melting process. The domestic waste will be handed to local waste collectors while the slag will be handed over to contractor for adequate disposal (Slag disposal mechanism and Agreement is attached as **Annex-F**). The disposal of non-biodegradable and recyclable matter, such as containers, waste papers, used materials, waste packaging materials, will be sold to local contractors for recycling or reuse purpose.

4.19.3 Air emissions and control measures

During construction, dust emissions will be controlled by water sprinkling. Proper tuning of vehicles carried out on the regular basis in order to control the air pollution. The material prone to wind will be covered with tarpaulin.

During operation phase, gaseous and dust emissions produced from furnace will be captured with air pollution control equipment i.e. baghouse filters (Design specifications are attached as **Annex-E**). Thereby, the clean air in compliance with PEQS will be released into environment through chimney. Generators are placed in separate rooms. To avoid traffic jam due to vehicular movements, adequate parking for trolley and trucks will be arranged. Workers will be provided with PPEs to reduce the impact of air emissions. Hence, by adopting proper mitigation measures, air emissions have been controlled.

4.19.4 Operational hours of the facility

The operational hours of the facility will be 24 hours.

4.19.5 Emergency Response

The proponent and supervisor will chair incident control. In the case of minor emergency, the first aid box will be provided. For incidents and accidents that may take place unexpectedly during project operations no matter how effective, strong and efficient the mitigation measures for all adverse impacts; especially the safety issues may be adopted. These may include; accident and natural disasters.

4.19.6 Health and Safety

The workers designated to relevant tasks will be trained on responding to situations like injuries. The workers would be provided with appropriate gadgets to control such incidents. The warning signs would be employed at the unit to control health and safety related issues. In addition to this, fire-fighting equipment including hydrants, pipelines, sprinklers would be installed at project site to tackle fire incidents.

4.20 Restoration and Rehabilitation Plan

As the said project is extension of steel mill and going to be established within same premises. Hence, no structure of any significance stands at the site to be relocated or dismantled. Land is already under Sheikhoo Sugar Mills Limited, therefore, no relocation and rehabilitation is required.

4.21 Green or sustainable features planned

i. Tree plantation plan

As part of green and sustainable measures, M/S Sheikhoo Sugar Mills Limited will plant trees at designated green spaces within its premises and along the boundary wall of the unit. Further, Sheikhoo would also conduct tree plantation as advised by EPA in Kot Addu district. Landscape of the area will be enhanced by planting native and ornamental plants after the construction of the unit.

ii. Rainwater harvesting plan

The rainwater will be effectively stored in tanks to use in cooling towers after treatment through RO plant. This measure will reduce the burden on natural resource by effectively using rain water as make up water.

CHAPTER 5: DESCRIPTION OF ENVIRONMENT

This section describes the baseline conditions, which shows the clear-cut picture of existing environmental resources; physical, ecological and socio-economic environment of the Project Area. Information on these aspects has been derived from field visits to the project area as well as information obtained through visits to the Government departments and other relevant agencies. The primary data was collected by surveying the project area and its nearby vicinity. The secondary data regarding physical parameters (topography, geology, seismology, hydrology and climatology) was obtained by visiting relevant departments and their official websites. The biological parameters (flora and fauna) were also studied in the project area. The vegetation of project area was studied by preparing a floristic list based on visual observation. The species were recorded with reference to their historical existence in the project area.

Information on wildlife fauna species (mammals, amphibians, reptiles, birds, etc.) in the assessment area was compiled based on opportunistic observation, gathering the existing information and consultation with local experts, community members and government departments. The socio-economic aspects were studied and analyzed by conducting detailed socio-economic surveys.

5.1 Baseline Physical Environment

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

5.1.1 Topography & Geology

Kot Addu is a district located in the southern part of Punjab province. Kot Addu is located in flood plain of River Indus at its left bank and the lands around this town are affected by flood water when the Indus River goes in very high floods. The Town is located on Multan-Attock-Rawalpindi section of railway track and serves as a junction wherefrom the train service is available for Multan, D.G. Khan, Attock and Rawalpindi.

The tehsil of Kot Adu is a prominent commercial and industrial hub and under mentioned industries are located in this zone;

- Pak Arab Oil Refinery (PARCO)
- Kot Adu Power Company
- Lal-Peer Thermal Power Station
- Sheikhoo Sugar Mills
- Fatima Sugar Mills
- Gillani flour Mills

Kot Addu is located at east of the Indus River at distances of about 100 km from Multan, 80 km from D.G.Khan, 60 km from Muzaffargarh, 60 km from Layyah and 16 km from Taunsa Barrage. The area around the Town is a flat flood plain and is ideal for agriculture. Two main canals (Muzaffargarh Canal, and Taunsa-Panjnad link canal) off taking from Indus River, are flowing at the northern and eastern side of this Town.

The topography of project area is flat. The site selected for extension of steel mill is located within premises of Sheikhoo Sugar Mills Limited at Sinawan-Sultan Colony Road, Anwar Abad, Tehsil and District Kot Addu. The coordinates of the site are; Latitude 30°18'15.0"North and Longitude 71°03'15.8"East.

5.1.2 Seismicity

A seismic hazard analysis is based on both the geological and seismological history of the region, including recent and historical seismicity (earthquake catalogue), supplemented with available paleo-seismological information.

Pakistan is an earthquake prone country. A number of earthquakes have hit Pakistan resulting in losses of life and property. Pakistan Meteorological Department (PMD) presently has a network of eleven seismic stations. By using recorded data the seismicity and zoning maps of Pakistan have been developed by PMD. Seismic Zoning Map of Pakistan showing Proposed Project site area is presented as Figure, indicating zones according to the Building Code of Pakistan - 2007. The project site falls in Seismic Zone 2A/minor to moderate damage zone according to the Seismic Zoning Map of Pakistan.

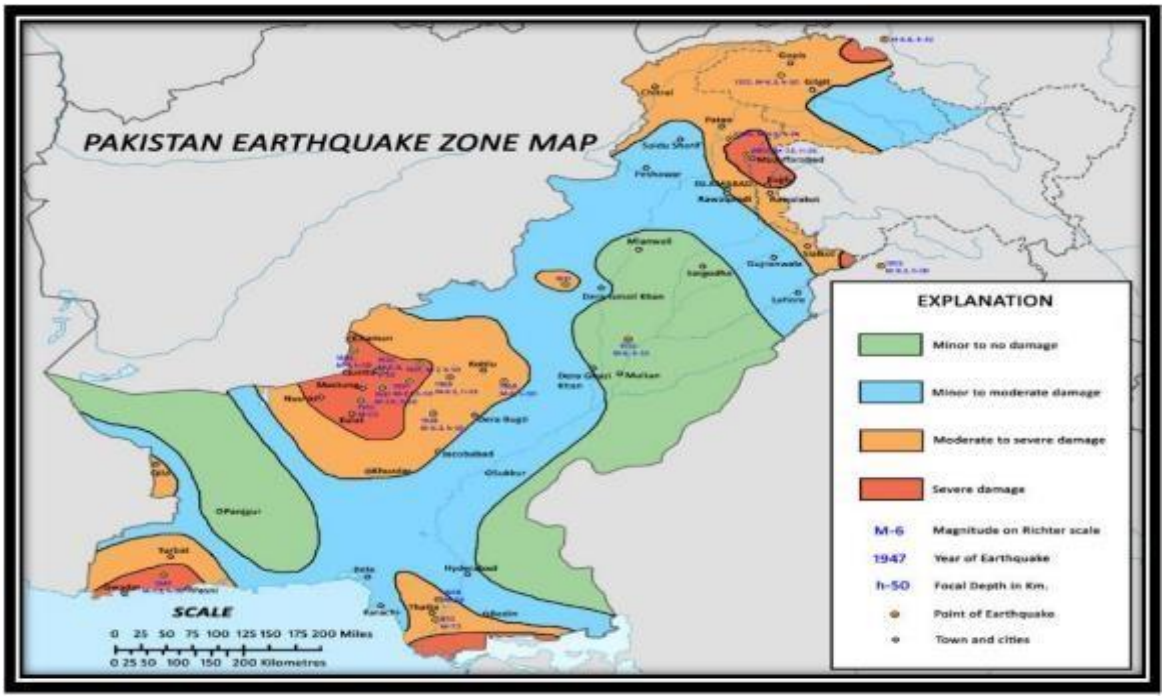


Figure 6. Seismic zoning of Pakistan

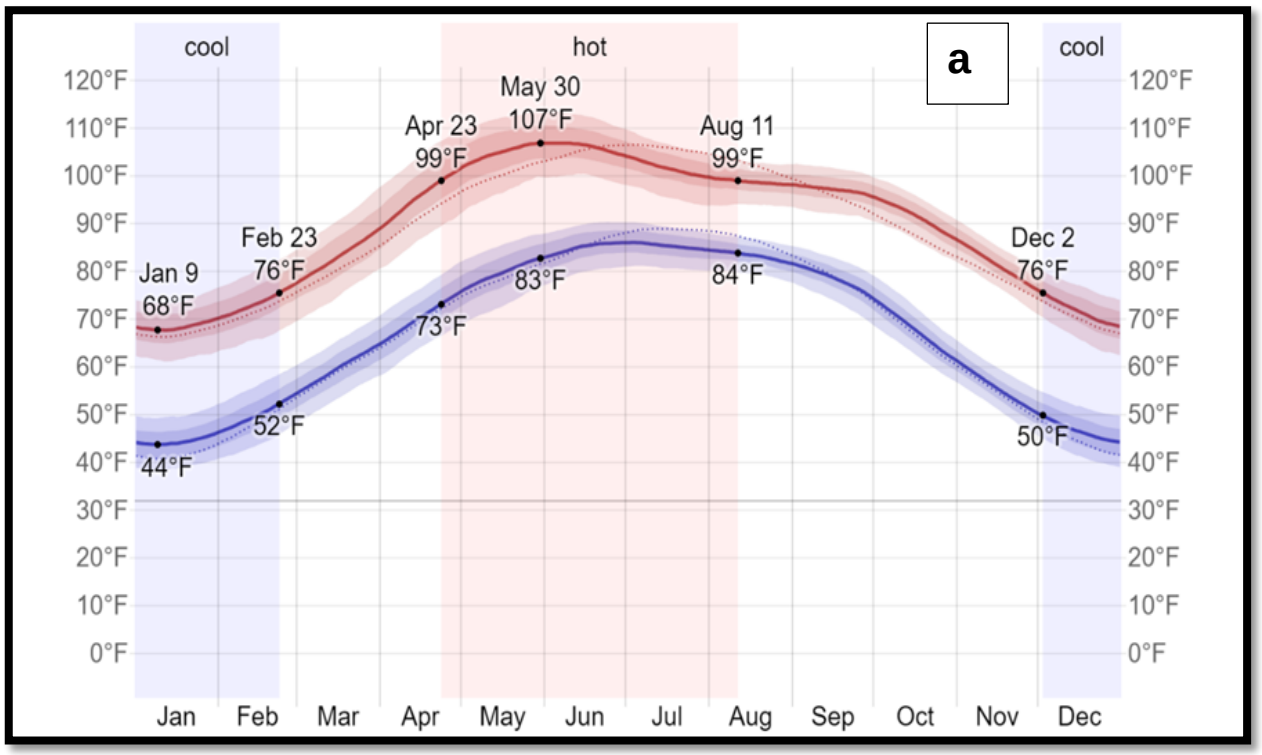
5.1.3 Climate

The city of Kot Addu is located in southern Punjab province at almost the exact centre of Pakistan. The closest major city is Multan. The area around the city is a flat, alluvial plain and is ideal for agriculture, with many citrus fruits' and mango farms. There are many canals that cut across the Kot Addu District, providing water from nearby farms. This makes the land very fertile. However, usually land close to the Chenab are usually flooded in the monsoon season.

Kot Addu features an arid climate with very hot summers and mild winters. The city witnesses some of the most extreme weather in the country. The highest recorded temperature is approximately 54 °C (129 °F), and the lowest recorded temperature is approximately −1 °C (30 °F). The average rainfall is roughly 127 millimetres (5.0 in). Dust storms are a common occurrence within the city.

In Kot Addu, the summers are sweltering and clear; the winters are short, cool, and mostly clear; and it is dry year round. Over the course of the year, the temperature typically varies from 44°F to 107°F and is rarely below 39°F or above 113°F.Based on the pool score, the best time of year to visit Kot Addu for hot-weather activities is from mid September to mid October.

The hot season lasts for 3.6 months, from April 23 to August 11, with an average daily high temperature above 99°F. The hottest month of the year in Kot Addu is June, with an average high of 106°F and low of 85°F.The cool season lasts for 2.7 months, from December 2 to February 23, with an average daily high temperature below 76°F. The coldest month of the year in Kot Addu is January, with an average low of 44°F and high of 68°F.



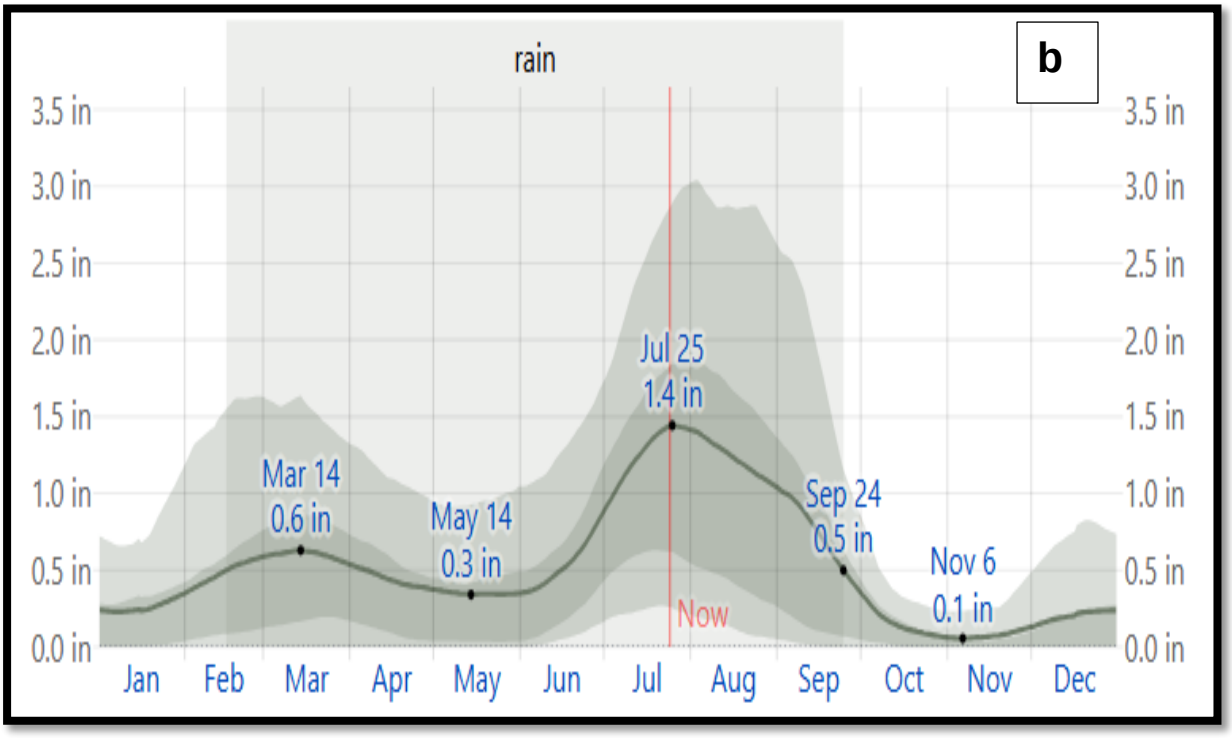


Figure 7. Average temperature (a) and rainfall (b) in the project area

5.1.4 Ambient Air Quality

The primary air pollutants are; carbon monoxide (CO), oxides of nitrogen (NOx), sulfur dioxide (SO_2), and particulate matter (PM). In order to determine the air quality of the area, environmental monitoring was carried out by ESPAK being EPA certified Laboratory and having the requisite sampling device and expertise for collection of samples. To determine the air quality of the area ambient air monitoring (24 hrs) was carried out and following results were obtained:

Table 4. Air Quality Monitoring Results

S#	Monitoring Source	CO	NO_2	NO	SO_2	O_3	$PM_{2.5}$	PM_{10}	SPM
PEQs		mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
		5	80	40	120	130	35	150	500
1	Near APC	0.9	23	13	9.2	33.4	30.4	138	388

5.1.5 Ambient Noise

Noise level measurements had been carried out within the selected site. This analysis showed that values are much below the limit prescribed under the Punjab Environmental Quality Standards (PEQS). Monitoring reports are attached as **Annex-G.**

Table 5. Ambient Noise Monitoring Results

S. No.	Monitoring source	Unit	PEQs	D.Time	N. Time
1	Centre of site	dB (A) Leq	65 (Night time) 75 (Day time)	65	54

5.1.6 Wastewater Quality

The wastewater released from M/S Sheikhoo Sugar Mills Limited was tested at final outlet and the results are given below:

Table 6.Wastewater Analysis Results

Sr. No.	Parameter	Method	Unit	Result	PEQS
1	pH value (H^+)	SMWW 4500H^+ B	-	7.2	6-9
2	Total suspended solids (TSS)	SMWW 2540 D	mg/L	22	200
3	Total dissolved solids (TDS)	SMWW 2540 C	mg/L	955	3500
4	Chlorine (Cl)	SMWW 4500-Cl G	mg/L	ND	1.0
5	Chloride (as Cl^-)	SMWW 4500Cl^--B	mg/L	240	1000
6	Fluoride (as F^-)	U.S. EPA 9214	mg/L	0.2	10
7	Cyanide (as CN^-)	SMWW 4500 CN-F	mg/L	ND	1.0
8	Ammonia (NH_3)	SMWW 4500-NH_3-D	mg/L	ND	40
9	Sulfide (S^{2-})	SMWW 4500-S^{2-} F	mg/L	ND	1.0
10	Sulfate (SO_4^{2-})	SMWW 4500-SO_4^{2-} C	mg/L	156	600
11	Chemical oxygen demand (COD)	SMWW 5220 D	mg/L	72	150
12	Biochemical oxygen demand (BOD_5) at 20°C	SMWW 5210 B	mg/L	40	80
13	Grease and oil (as n-HEM)	U.S. EPA 1664 B	mg/L	ND	10
14	Phenolic compounds (as phenol)	SMWW 5530 C	mg/L	ND	0.1
15	Anionic detergents (as MBAS)	SMWW 5540 C	mg/L	ND	20
16	Arsenic (As)	SMWW 3114 B	mg/L	ND	1.0
17	Barium (Ba)	SMWW 3111	mg/L	ND	1.5
18	Boron (B)	SMWW 4500-B B	mg/L	ND	6.0
19	Cadmium (Cd)	SMWW 3111	mg/L	ND	0.1
20	Chromium (trivalent and hexavalent)	SMWW 3111	mg/L	ND	1.0
21	Copper (Cu)	SMWW 3111	mg/L	ND	1.0
22	Iron (Fe)	SMWW 3111	mg/L	ND	8.0

23	Lead (Pb)	SMWW 3111	mg/L	ND	0.5
24	Manganese (Mn)	SMWW 3111	mg/L	ND	1.5
25	Mercury (Hg)	SMWW 3112	mg/L	ND	0.01
26	Nickel (Ni)	SMWW 3111	mg/L	ND	1.0
27	Selenium (Se)	SMWW 3114 B	mg/L	ND	0.5
28	Silver (Ag)	SMWW 3111	mg/L	ND	1.0
29	Zinc (Zn)	SMWW 3111	mg/L	ND	5.0
30	Total toxic metals	Calculated value	mg/L	ND	2.0
31	Temperature	Thermometer	°C	32.1	NGVS

5.2 Baseline Biological Environment

The proposed study area is barren and has scattered amount vegetation/flora. Mainly grasses and shrubs are present on site and trees or big plants like Accciamodesta (Kikar), Dalbergiasissoo (Sheehsam), Sufaida (Eucalyptus) are present in the area that will not be cut off during the proposed activity. Some agriculture activity was going on the boundaries of the proposed area. Local crops include wheat, Jowar and Bajra.

Mostly the land is barren so the project will not cause any major adverse impacts on the surrounding. Land selected for the proposed project is barren only some grasses & shrubs are present in scattered quantity. Mostly area is covered by the dry land. Fertile land is rare in the study area. Small patches of the soil are present that are used by the house hold for the vegetable harvesting and grazing.

1. Kikar (native and introduced) -Prosopisjuliflora
2. Kandi / Jand -Prosopis cineraria
3. Bushes -Mesquite bushes
4. Guava -Psidiumguajava
5. Shahtoot - Morusrubra
6. Wild Grasses Grass

There is no wildlife except jackals, dogs and snakes etc. Common species of birds found in the project area are sparrows, crows, pigeon, dove tiliar (starling), lal mena, parrot, quail, pintail, and humming bird etc. River Indus and Ghazi Ghat Seasonal Lake are the source of freshwater fishes in the project area. Some commercial fisheries operate in the project area. There are no game reserves or protected lands/areas or endangered or rare species in the area in the range of 5 km from the project site

5.3 Baseline Socio-Economic Environment

Socio-economic environment is represented by the human and economic development and quality of life values. For the study of socio-economic environment of the project area, field surveys were conducted and interviews were held with the various stakeholders. The socioeconomic conditions of the project area are as follow:

5.3.1 Nearby Residences

The instant project is located at a safe distances of about **1 km** to **3 km** to nearby residential areas as shown in the figure. The residential communities found nearby the project site are rural in nature and mainly present in the scattered form as can be seen in the figure provided below:



Figure 8. Nearby residential areas

5.3.2 Industry/businesses

Few small businesses are present around the instant project at the distances of **1 km** to **3 km** as shown in the figure.

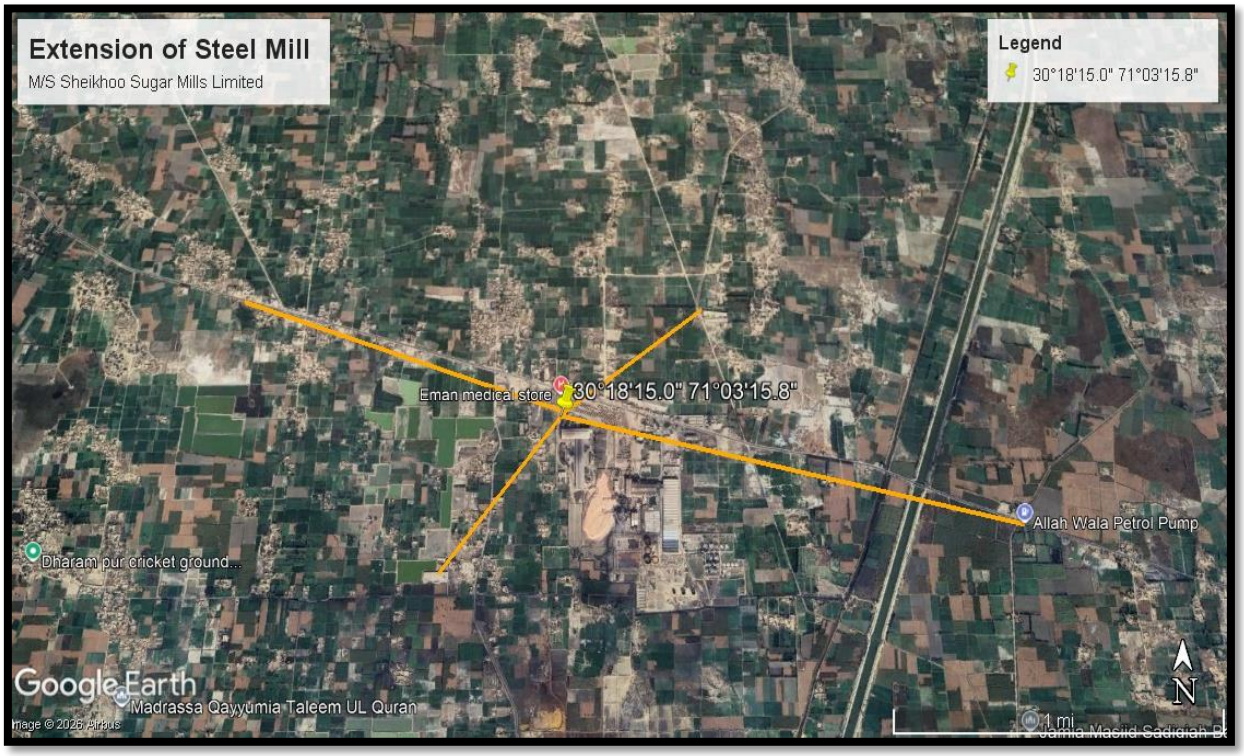


Figure 9. Nearby businesses of the project area

5.3.3 Health Facilities

Healthcare services are provided to the citizens by both public and private sector hospitals. The nearest medical facilities are shown in below image at the distances of **1-8 km** from the said project.

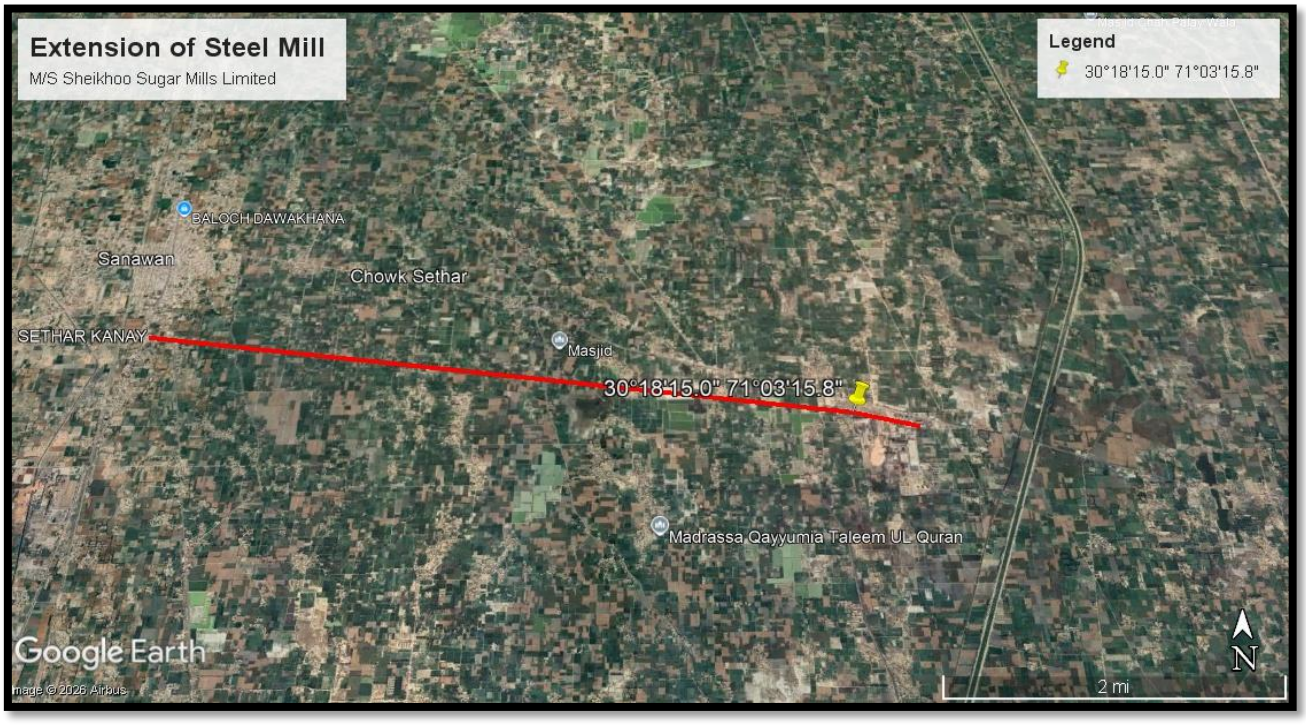


Figure 10. Hospitals near project area

5.3.4 Educational Facilities

The educational institutes located nearby of the said project are present at the distances of **2.5-3 km** which is a safe distance according to EPA:

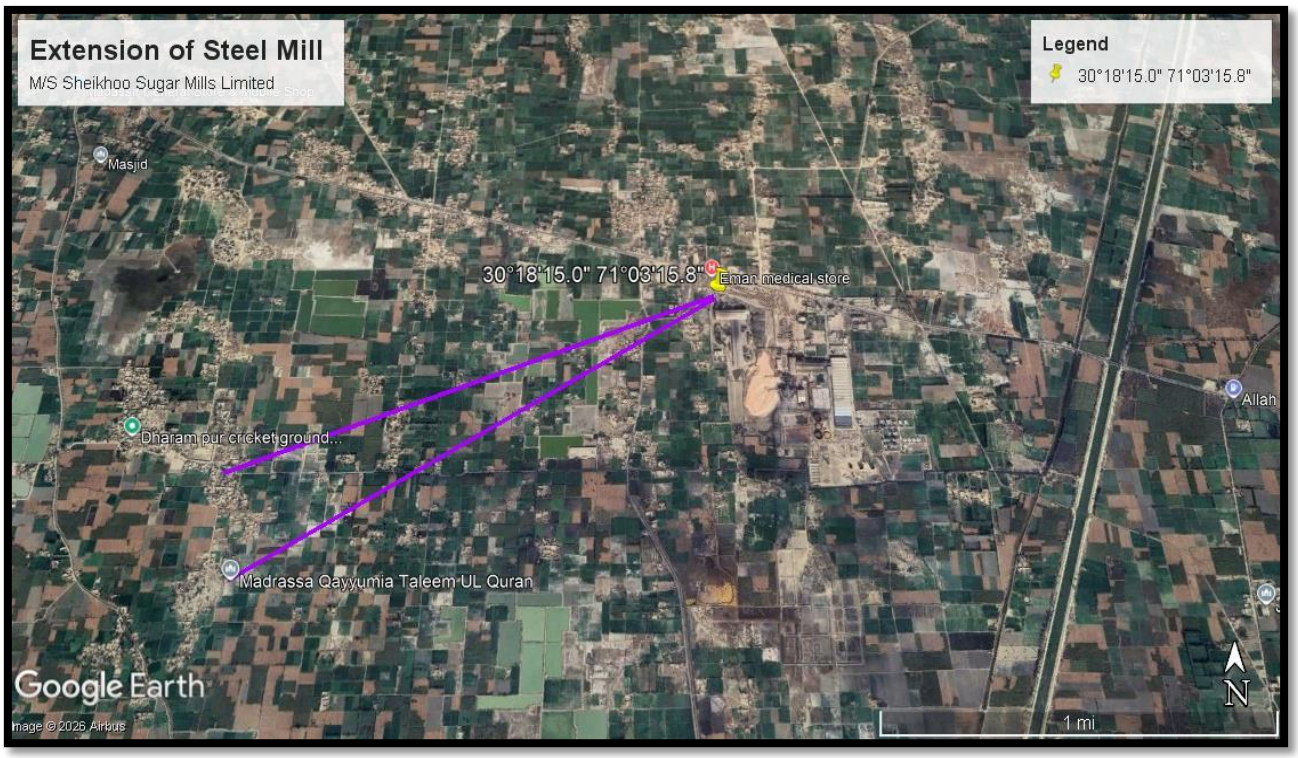


Figure 11. Educational institutes present near project area

5.4 Lab Reports of Environmental Analysis

Testing of different parameters was carried out from EPA certified laboratory i.e. ESPAK to check the quality of different environmental parameters. The copy of the lab reports of these parameters (ambient air analysis, wastewater quality analysis and noise) are attached herewith as **Annex-G**

5.5 Suitability of the Site

The project site is located in industrial cum agricultural area and away from the residential communities. The site does no fall in environmental sensitive area and all commodities are at a suitable distance from project site as they will not be impacted by the said project and its operational activities even locals will get benefits and job opportunities. No replacement, relocation and rehabilitation are required for the development of proposed project.

CHAPTER 6: IMPACT ASSESSMENT

This section discusses the potential environmental impact of instant project, methodologies for impact identifications and characteristics of impacts including nature, magnitude, extent, location, timing, duration, reversibility and risk. The assessment carried out in this Section is based on potential impacts on overall environmental receptors within the project area.

6.1 Methodologies for Impact Identification

During construction, adverse environmental & social impacts depend on the resources and receptors involved along with other parameters such as; geographical scope (magnitude and extent), temporal scope (duration) and reversibility. But for construction of instant project it has been anticipated that this project will have beneficial social impacts, it will bridge the gap between supply & demand, employment opportunity will be increased for which locals will be preferred and socio-economic uplift of the proponent. Having identified and characterized the potential significant impacts during design, construction/ installation and operation phase of project an Environmental Impact Severity Matrix & checklist to summarize all the identified impacts as mentioned below in tables.

Table 7.Impact Significance Criteria

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

Table 8. Impact Matrix Checklist for Construction Phase

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

Table 4. Impact Matrix Checklist for Operational Phase

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

6.2 Characteristics of Impacts

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

Table 50. Impacts Characteristics

Sr.#	Environmental Component	Impact Characteristics												
		Duration		Location		Frequency		Extent		Significance			Reversibility	
		Long	Short	Direct	Indirect	Cont.	Intermittent	Wide	Local	Large	Moderate	Minor	Rev.	Irrev.
Beneficial Impacts														
1	Employment Opportunity	◙		◙		◙			◙		◙		◙	
2	Solid Waste Management	◙		◙		◙		◙			◙		◙	
3	Land Value	◙			◙	◙		◙			◙		◙	
4	Tree Plantation	◙		◙		◙			◙		◙			◙
Adverse Impacts														
1	Solid Waste	●		●		●			●		●		●	
2	Health and Safety	●		●		●			●		●		●	
3	Physical Hazards	●		●			●		●		●			●
4	Security Risks	●		●			●		●			●	●	
5	Wastewater	●		●			●		●			●	●	
6	Air Emissions	●		●		●		●			●		●	

6.3 Project Impact Evaluation Matrix

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

Table 61: Impact Evaluation Matrix

Environmental Parameters	Impact Assessment during Different Phases	
	Construction	Operational
Planning and Designing		
i. Location	+2p	+2p
ii. Design	+1p	+1p
A: Physical		
1. Land Resources		
i. Soil Erosion and Contamination	-2t	-2t
ii. Transportation	-1t	-1t
iii. Solid Waste and By-Products	-2t	-1p
2. Air Resources		
i. Noise Pollution	-1t	-1p
ii. Air Pollution	-1t	-2p
iii. Dust Emissions	-1t	-1p
3. Water Resources		
i. Ground Water	-1p	-1p
ii. Wastewater	-1p	+1p
B : Ecological		
Flora		
i. Tree Cutting	NA	+1p
Fauna		
ii. Terrestrial Fauna	NA	NA
C: Socio-Economic		
i. Employment Opportunities	+1t	+3p
ii. Land Value Appreciation	+1t	+2t
iii. Economic Uplift of Study Area	+1p	+3p
D: Hazards		
i. Physical Hazards	-1t	-1p
iii. Health and Safety	-1t	-1p

Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable; t= Temporary; p= Permanent; app= Applicable; 0= Negligible

CHAPTER 7: SCREENING POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

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

7.1 Project Location

This said project is extension of existing unit and not involve any disturbance in the area. There is no human settlement, heritage building, social structure, grassland or preserved area in the project vicinity that could be damaged, dislocated or dismantled due to the project activity in proposed area. Project site is located within existing premises of Sheikhoo Sugar Mills Limited. Hence, the impact of location is considered to be in-significant as the project site is away from the surface water body, residential area and no protected area (is reported in 5.0 km vicinity of the project area).

Nature of Impact

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

Mitigation Measures

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

- The selected site located at adequate distance from the various sensitive receptors.
- The selected site is located in M/S Sheikhoo Sugar Mills and due to establishment of aforesaid project no change in the land use of area is being envisaged.
- The site is owned by the proponent and no dispute is associated.
- The wastewater will be treated prior to its disposal.
- The generated solid waste will be collected by Contractor and it will be disposed off through the standard practices of area.

It is envisaged that no mitigation measures will required as the said project will be constructed within the premises of M/S Sheikhoo Sugar Mills Limited and no adverse impacts on its surroundings due to significant distances from all sensitive receptors.

7.2 Design

The design phase of aforesaid project optimized the use of best available technology in order to prevent or minimize potentially significant environmental impacts associated with the project as well as to ensure high level business and environmental performances. In pre-construction/design phase, a management system was provided

at design level for the reduction of impacts. Design of said project will adhere to all standards, technical and legal requirements in order to avoid adverse impacts on the socio-environment and human health. Efficient infrastructure will be developed. Procurement of construction materials from approved dealers will be ensured. The technology adopted for the Steel Mill is state of the art technology. This technology is adopted because of the following reasons:

- The process will take place in a fully closed system which will ensure zero emissions from the proposed plant.
- Through the selected system high quality of product will be produced.
- No procedural wastewater will be generated from the mill except for RO reject water which will be used for secondary cooling of CCM billets.

The Proponent intends to reduce the environmental and social issues up to practically possible safe limit. The Client had adopted SOPs for Emergency Reponses Plan and Fire Fighting Plan which are explained in sub-sections below.

Nature of Impact

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

Mitigation Measures

No additional mitigation measure will be required as state of art technology is being adopted for Steel Mill.

7.3 Extension Phase

During the extension of Steel Mill, civil structure work and installation of equipment will be done. It would bring in immediate but short-term changes on various components of environment near the project site. This section explains how aforesaid project will affect different environmental aspects and its mitigation measures to manage the impact. The anticipated impacts will be temporary and localized in nature. Even though, the measures are proposed to minimize such impacts.

7.3.1 Soil Contamination

During construction, the chances of soil erosion and contamination are less, as no major constructional activities will be involved in said project. There are low chances of land contamination due to release/spill of lubricants, oil and other materials as no major construction is involved. The impact will be short term, localized and can be controlled through immediate appropriate management and mitigation measures. This impact is considered negative of minor magnitude. Hence, the impact is in-significant.

Nature of Impact

The nature of said impact will be direct, low and hence in-significant.

Mitigations

Following mitigation measures will be adopted to protect the soil from erosion and contamination:

- Spill prevention and response plan for storage, usage and transfer of fuel should be prepared (if used on site) and implemented.
- Workers should be trained on spill prevention and response plan (if needed).
- Maintenance of vehicles as well as equipment will be carried out at designated areas within the facility.
- Any hard surface or tarpaulin should be spread on area to prevent soil contamination.
- Regular inspections should be carried out to detect leakages in construction vehicles and equipment.
- Machinery involved should be maintained properly to avoid leakages.
- The proponent will be required to instruct and train their workforce in storage and handling of materials that can potentially cause soil contamination.
- Solid waste generated during construction of the unit will be properly and safely disposed of as per practice of area.

7.3.2 Air Emissions

The main source of air emission during said phase is dust. It will be generated due to movement of equipment at the site during constructional activities. Dust emissions are expected to result in increased particulate matter thus affecting baseline air quality, primarily in working area for a short duration.

Nature of Impact

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

Mitigations

Following mitigation measures will be adopted:

- In order to reduce concentration of suspended dust particles & transport roads will be sprinkled with water on the regular basis.
- Construction/ Installation activities causing dust should not be carried out on excessively windy days.
- Workers will be provided with masks for protection against the inhalation of dust and they should be trained for its use.
- Strict speed limit for the vehicle carrying the raw-material should be imposed.
- Emission of exhaust gases from vehicles used for construction should be controlled.

7.3.3 Impact on Water Environment

The construction will consume water for structure building and for domestic purposes. The overall impact on water environment due to aforesaid project activities are considered short-term and in-significant.

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

Mitigations
Following mitigation measures will be adopted:

- Water conservation techniques should be adopted to conserve water.
- Labor should be trained to conserve the water.

7.3.4 Impact on Flora & Fauna

No impact on the flora and fauna is being envisaged as said project is located within Sheikhoo Sugar Mills Limited. No additional disturbance is being envisaged for implementation of said project.

Nature of Impact

The nature of said impact will be in-significant.

Mitigations

Following mitigation measures will be adopted:

- After the completion of installation phase trees will be planted in the designated green areas.
- For the management of landscape, local and native trees will be planted.
- Trees will be planted along the project area boundary.
- Unnecessary up-rooting of the trees and plants must be avoided.

7.3.5 Impact on Noise Environment

The noise produced during establishing of the unit may not have significant impact on the existing ambient noise levels as all sensitive receptors are located at adequate distance. The major installation work will be carried out during the day hours only. The construction/ Installation equipment may generate high noise which can affect the personnel operating the machines. Use of proper personnel protective equipment will mitigate any adverse impact of noise on the working population.

Nature of Impact

The nature of proposed impact will be in-significant.

Mitigations

Following mitigation measures will be adopted:

- Selection of up to date and well-maintained equipment with reduced noise levels ensured by suitable in-built damping techniques or with appropriate muffling devices.
- Limiting noisy activities to the day hours, wherever possible.
- Providing the construction workers with suitable hearing protection like; ear cap, or earmuffs and training them how to use effectively.
- Use of low noise machinery, or machinery with noise shielding and absorption are the mitigation measures suggested for said project.

7.3.6 Socio-Economic Impacts

In project area, no significant changes are envisaged in traditional life style and occupation of local people residing in the nearby communities as it is being established at adequate distance from various sensitive receptors. The local people are rather benefited due to the provision of job opportunities. No impact is envisaged due to influx of workers as local will be preferred and hired for working. Social issues may arise which will cause minor negative impact on the social life style of people. Moreover, health and safety related issues may arise during the construction / Installation activities. These impacts are in-significant can be further reduced significantly by adopting best management practices.

Nature of Impact

The nature of said impact will be in-significant.

Mitigation Measures

Following mitigation measures will be adopted to reduce the socio-economic impact on the community:

- Good relations with local communities will be promoted by encouraging Contractor to provide opportunities for skilled and un-skilled employment to the locals as well as on-job training.
- The contractor should prefer hiring local labor from adjacent community;
- The contractor will keep the copy of National Identity Card (CNIC) of his employees and will warn the workers not to involve in any anti-social activities otherwise they may face dire consequences.
- At the time of hiring, the Contractor has to ensure that workers should be of good repute.
- First aid kits having all the necessary first aid stuff will be available at site.
- Routine medical check-ups of all the field staff including unskilled labor needs to be conducted by qualified physician and surgeon.
- Training of workers should be carried out for operating various constructional/ Installation machinery, safety procedures should be adopted, environmental awareness should be carried out, equip all workers with safety boots, helmets, gloves, protective masks and monitoring of their proper and sustained usage

will be carried out. In case of accidents, contractor will provide free medical treatment to the community.
- The Contractor will be responsible for sensitivity towards the local customs and traditions.

7.4 Operational Phase

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

7.4.1 Impact on Ecology

Currently, the site is being used for industrial activities. After the completion of said project different native and ornamental plants species will be planted at designated green spaces and along boundary of project site. The overall aesthetic beauty of the area has been enhanced and it will have a significant impact on the overall ecology, aesthetic and landscape of the area.

Nature of Impact

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

Mitigation Measures

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

7.4.2 Impact on Air Environment

During operational phase, sources of air emissions is electric furnace. The particulate matter and dust will be produced from this equipment.

Nature of Impact

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

Mitigation Measures

Following mitigation measures will be adopted:

- For fugitive dust suppression regular sprinkling of water will be carried out.
- Vehicles used for transportation of raw material as well as finished product and the utility vehicles will be regularly serviced and maintained in order to keep the environmental impact on account of their exhaust emissions to its minimum level.
- Dust collection hood will be installed to divert air emissions released from the furnace to Baghouse filters.

- Native tree would be planted along the boundary of project area to keep environment healthy. For removal one tree, 3-5 trees will be planted.

7.4.3 Noise Environment

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

Nature of Impact

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

Mitigation Measures

In general the following methods will be adopted to control the noise pollution from the above-said unit;

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

7.4.4 Solid Waste Management

The solid waste generated from the steel unit is mainly slag produced during melting of scrap materials. While recyclable waste sold out to contractor and domestic waste will be handled as per area practices.

Nature of Impact

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

Mitigation

Following mitigations should be adopted to manage generated solid waste:

- The solid waste generated from processes like slag will be stored in a designated area and handed over to contractor.
- The non-reusable solid waste generated during screening of scrap will also be handed over to contractor
- Waste bins will be placed in the facility at the strategic position for the collection of solid waste.
- The installed bins will be covered in order to reduce the chances of the disease vector production.
- Regular training will be given to the workers dealing with the waste management it will include; identification, segregation and management of waste.

7.4.5 Water consumption and wastewater production

Water requirement will be fulfilled by Muzaffargarh canal. Process water requirement will be approx.50 m^3/day. Domestic wastewater will be treated through septic tank before disposal while the RO reject water will be used in secondary cooling of CCM billets.

Nature of Impact

The nature of impact will be low and minor.

Mitigation

Following mitigations should be adopted to manage generated wastewater:

- The domestic wastewater will be treated through septic tanks prior to final disposal.
- Water conservation activities will be adopted for the preservation of water.
- Water conserving methods will be applied by placing taps and toilets.
- All faults will be monitored and fixed.
- Freshwater conservation techniques should be adopted to ensure sustainable development
- Monitoring of effluents shall be carried out as per requirement of Self-Monitoring and Reporting Tools (SMART) to ensure compliance with the PEQS.
- It will be ensured that no solid waste will be entered in the wastewater.

7.4.6 Occupational Health and Safety

Following health and safety impacts arise during the operational phase of the above-said project:

- Slips, trips and falls on ground
- Unguarded machinery
- Hazards associated with the fire and explosion
- Noise and vibration
- Electrical burns and electric shock

Nature of Impact

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

Mitigation

The following mitigation measures are suggested that could be applied to reduce the risk of health and safety:

- Workers are properly trained handling machines and equipment.
- Floor surfaces shall be maintained and cleaned on regular basis.
- Floor should be kept clean and free of oil spills, other slippery fluids or materials and obstructions.
- The effective use of hearing-protection devices shall be ensured.
- Protective measures and emergency rescue procedures should be followed strictly.
- Only authorized persons shall be allowed in the processing and industrial premises.
- Unloading of raw-material and loads of final products should be controlled, supervised, slow and smooth.

7.4.7 Security Risks

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

Nature of Impact

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

Mitigation Measures

Following mitigation measures will be adopted:

- Proper security will be provided to the workers working in the premises of proposed project.
- CNIC of all the workers will be kept by the proponent.
- Security to the workers at site should be provided.

7.4.8 Emergency Response

Emergency response preparedness committee will be formulated consisted of heads of all the departments. Emergency Response Leader will be the head of the team assisted by safety team and safety supervisors. Emergency Response Leader along with his team will ensure that in the case of emergency, team is prepared for fire-fighting and the first aid kits will be provided which may include; blankets, hot water bottles, stretchers, benches, sterilized dressing, snake bite kit, cotton and iodine (2% alcohol). Incidents and accidents may take place unexpectedly during project operations no matter how effective, strong and efficient the mitigation measures for all adverse impacts; especially the safety issues may be adopted. These may include; accident and natural disasters.

Nature of Impact

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

Mitigation

Following mitigation measure will be adopted:

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

7.4.9 Socioeconomic Impact

It is envisaged that adverse impacts associated with the said project includes; local community will be disturbed due to increase in the traffic load (i.e., vehicles carrying raw material and final products), wastewater management, soil pollution, etc. The intensity of impacts occurred due to the establishment of aforesaid project will be quite low. The commencement of aforesaid project will have a beneficial impact on the

surrounding community such as; increase in employment opportunity, increase in wages of the local area employees, increase in revenue generation, provision of social welfare funds of employees and appreciation of land value. Moreover, the said project is located within the premises of Sheikhoo Sugar Mills Limited and residential areas are at safe distance from project site.

Nature of Impact

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

Mitigation Measure

No mitigation measures will be required.

7.5 Potential Environmental Enhancement Measures

Following potential environmental enhancement measures will be adopted:

7.5.1 Enhancement in Employment Opportunities

During extension of steel mill, the employment opportunity will be enhanced. Workers will be hired from local community, include; skilled and un-skilled workers. During construction phase, around 100-135 workers will be hired and in operational phase approximately 50-60 workers will be employed. It will include technical and non-technical staff. Locals will also have the opportunity to diversify their income by being employed during various project phases. Hence, there will be an increased employment opportunity for the local people which will have a positive impact on the socio-economic status of the area.

7.5.2 Tree Plantation

At the end of extension, landscape of the area will be enhanced by planting native and ornamental plants along the boundary of project site. This will enhance the aesthetic beauty of the area.

CHAPTER 8: ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

8.1 General

This chapter summarizes the various mitigation measures as outlined previously in this EIA Report that will be implemented during the designing, construction/ Installation operational and decommissioning stages of project. It does not discuss further the mitigation measures which have been adopted within the design and planning of the project, as these are comprehensively covered in previous section of this EIA Report. Outline and key features of the EMMP for operations phase of the aforesaid project is presented in the sub-sections below. As per the environmental legislation in Pakistan, the compliance status of the conditions mentioned in the construction/Installation should be submitted along with other documents to the environmental protection agency to obtain confirmation for compliance and Environmental Approval for project operation. Even after implementation of the suggested mitigation measures, the impact may remain significant, and requires regular environmental monitoring.

8.2 Objectives.

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

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

8.3 Proposed Mitigation Actions and Monitoring Program

It lists all the mitigation measures identified in the EIA and the associated environmental

or social aspect in line during construction and operational phase with the administrative framework involving all the responsible implementing authorities who are required to take the planned actions/measures and monitor it accordingly. It enhances project benefits by reducing its impacts and making it environmentally friendly. The environmental management and monitoring plan is given below in Table 13.

Table 72. Environmental Management Plan

Project Activities	Type of Impact	Potential Impacts On Environment	Extent / Magnitude	Mitigation Measure	Institutional Responsibility	
					Implementing Body	Supervision
CONSTRUCTION PHASE						
Civil works	Physical, Social, Biological Aesthetical	Soil Erosion, Emissions, Water Contamination, Noise &Vibration, Wildlife affected, Employment, Health &Safety of Workers	More/ Adjacent area	• Record keeping and timely transfer of SW from bins to the disposal site for ultimate management and disposal • Dust emission from soil piles and aggregate storage stockpiles will be reduced by keeping the material moist by sprinkling of water at appropriate frequency • Covering the pile, for example with tarpaulin or thick plastic sheets, to prevent emission.	Contractor	Proponent

				• Noise control measures will be implemented • Paved roads are already there that will be used for transportation of raw material. • Camping site will be established during construction		
Movement and fueling of vehicles	Physical & Aesthetical	Soil &Water Contamination due to Fuel Leakages &Spillage, Emissions, Noise &Vibration	Moderate/ at the site	• Periodic maintenance and inspection of vehicles will be done • Vehicles with leaks will be operated after maintenance. • Vehicles should not be washed or serviced in the field.	Contractor	Proponent
Transportation of construction material	Bio-physical	Dust and Particulate Emissions, Noise Generation, Safety and Health Effects	Moderate/ Adjacent area	• Excessive use of horns will be avoided • PPE's will be provided to workers • Covering of trucks	Contractor	Proponent

				carrying transporting material • Night time driving of project vehicles will be limited where possible • Low speed limit will be maintained on the section of the access road that is adjacent to the community and site. • The fence surrounding the site will be put in on during the construction to prevent access to the construction site		
Ecological Resource	Physical, aesthetical and biological	Flora & Fauna	Moderate/ adjacent area	More tree plantation will be done at designated green areas.	Project Manager	Project Manager
Operational Phase						
Wastewater management	Physical/ social	Degradation of water quality	Local	Wastewater generated from process activities will be mainly RO reject	Environment officer	Proponent

				that will be reused for secondary cooling of CCM billets.		
Air quality management	Physical	Dust and PM	Moderate/adjacent areas	• Bag house filters will be used to control air emissions • Water will be sprinkled during transportation of raw and finished products to suppress fugitive dust. • Regular monitoring of ambient air and maintenance of machinery should be done on regular interval.	Environment officer	Proponent
Noise generation	Physical, social, biological	Psychological and hearing problems	Moderate/local	• There will be ban on the use of horn in the area. • Proponent has planned a proper plantation plan which will also act as barrier for noise.	Environment officer	Proponent

Solid Waste Generation	Physical, Biological, Social	Soil Contamination, effecting GW Quality, vectors production, odor, Health, Welfare	Severe/ local and global	• The solid waste from the project should not be allowed to pile up. • Solid waste should be disposed off properly as per local practice • Slag will be handed over to contractor • Recyclable waste should be dispose off through certified contractor.	Environment officer	Proponent
Health and safety	Biological	Injury may happen while handling machines	Severe	• Personal Protective equipments (PPE's) i.e. surgical masks, gloves and sanitizers will be provided to the workers • Warning signs will be placed in local language. • Fire drills training has been carried to avoid hazards • Proper maintenance	HSE Manager	Proponent

				of machines has been carried out • First aid kits and other necessary equipment will be kept available at site. • Dange larve eradication procedures will be adopted • COVID-19 SOP's must be implemented		

8.4 Schedule for Implementation and Environmental Budget

The establishment of the unit will be done within 8 months after getting Environmental Approval/NOC. The total cost of the project is **PKR 1 billion approx.** Environmental budget of **PKR 70 million** will be allocated to protect the environment which will include; tree plantation, environmental monitoring as per SMART Rules, etc.

8.5 Environmental Management Team

The primary responsibility for implementing different aspects of the EMP within the company lies with the concerned departments of Sheikhoo Sugar Mills Limited.

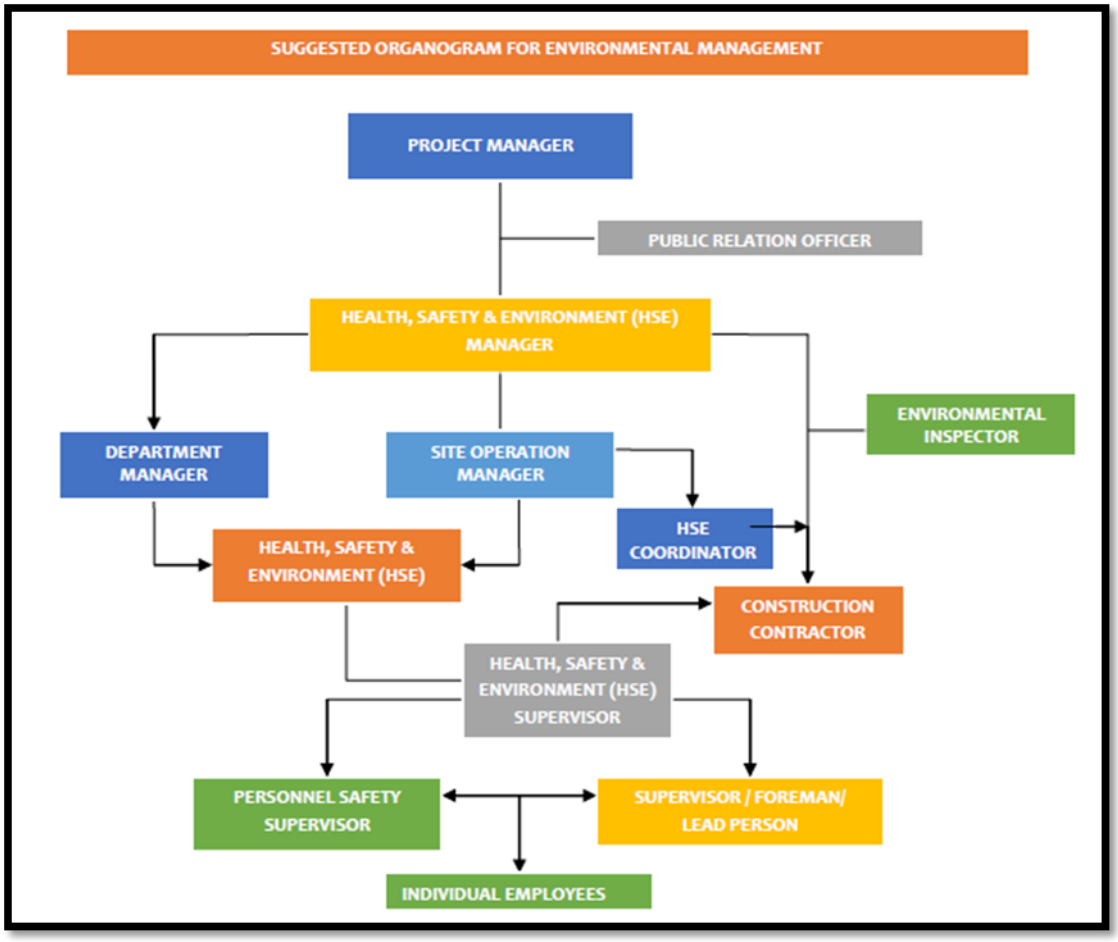


Figure 12. Proposed Hierarchy of Monitoring team

8.6 Proposed Monitoring program

Environmental monitoring is a vital component of the Environmental Management Plan. It is the mechanism through which the effectiveness of the EMP in protecting the environment is measured. The feedback provided by the environmental monitoring is instrumental in identifying any problem or lapse in the system under implementation and planning corrective actions. For domestic activities already constructed facilities will be used. Solid waste disposal will be according to standard practices of area. It should be noted that it is difficult to outline a formal monitoring protocol for specific environmental parameters and key impacts until detailed project

design has been completed. A formal monitoring protocol will be included within the revised EMP once the detailed project design has been completed.

Table 83. Proposed Monitoring Program

Components	Parameter to be Monitored	Measurement	Frequency	Location	Responsibility
Land Resource	Soil quality	Regular visual monitoring and soil analysis	Daily	On-site	Proponent
Noise Levels	Noise level on the site and adjacent area on dB(A) scale	Noise level reading will be measure on regular basis	Regularly	At all noisy locations within the facility	Supervisor
Workers safety	Injuries and accidents	Recording injuries	Daily	On-site	Supervisor
Wastewater	As per SMART Rules	Testing by EPA Certified Lab	Monthly	On-site	Supervisor
Ecological Resource	Flora & Fauna of the area	Observation by conducting surveys	During Baseline Survey, once in a year and after the completion of the Project	Around project site	Proponent

8.7 Proposed EMP reporting and reviewing procedures

Following protocols will be adopted for reporting & reviewing EMP:

- During extension of said unit, EMMP reporting and reviewing will be done by the contractor/proponent. Regular monitoring will be done and reports will be submitted in EPA, Punjab as per condition of Environmental Approval of construction/Installation phase.
- Monitoring reports will be reviewed by supervisor and proponent of M/S Sheikhoo Sugar Mills Ltd. and then will be shared with EPA, Punjab.
- Photographic records will also be maintained on regular basis.
- Recorded data will be reviewed by supervisory contractor/proponent so that it can be further improved if required.

8.8 Environmental Training

M/S Sheikhoo Sugar Mills Ltd. will ensure in-house training for the project staff, labor and the supervisory staff through the provision of one day basic training and one day advanced training, covering environmental and social aspects of the projects in general and implementation requirements will emphasis on the development project in general, on the roles & responsibilities of the staff and the labor while executing the environmental monitoring plan in particular. The training protocols will include the following aspects:

- Procedures for monitoring the air quality parameters and measures to be adopted for avoiding/minimizing air pollution, particularly from the transportation of raw materials/finished products will be given to the contractor/proponent.
- Safety measures against hazards for workforce and the local communities arising from the construction and operational activities.
- Emergency response trainings.
- Fire-fighting trainings and drills.
- Use of safety gadgets by the workforce.

CHAPTER 9: STAKEHOLDER CONSULTATION

9.1 General

Public consultation refers to the process by which the concerns of local affected persons and others who have plausible stake in impacts assessment of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. According to the IEE and EIA Review Regulations, 2022 public consultation is mandatory for any socio-environmental study. For this purpose, assessment survey and public consultation sessions held with different stakeholder groups that may be impacted. The consultation process was carried out in accordance with the guidelines laid by EPA, Punjab. The objectives of this process were to:

- Share information with stakeholders on project establishment and operation.
- To access the impacts on the physical, biological, and socio-economic environment.
- Understand stakeholder concerns regarding various aspects of the project.
- Understand the perceptions, assessment of social impacts and concerns of the communities of the project area.
- Find out the awareness level and situation of acceptability to identify any issues for the implementation of said project.
- To invite people to express their views about the positive/negative impacts on their life styles and environment.

This report includes all the comments, which were taken into account in preparing the definitive development concept for the construction of the said unit. Public consultation performas are attached herewith as **Annex-H.**

9.2 Consultation Mechanism

Primary stakeholders were consulted during informal and formal meetings. The consultation process was carried out in the Urdu language. During these meetings a simple, non-technical, description of the project was given, with an overview of the project's likely human and environmental impact. This was followed by an open discussion allowing participants to voice their concerns and opinions. In addition to providing communities with information on the proposed project, their feedback was documented during the primary stakeholder consultation. The issues and suggestions raised were recorded in field notes for analysis and interpretation.

By reaching out to a wider segment of the population and using various communication tools such as participatory needs assessment, community consultation meetings, focus group discussions, in-depth interviews, and participatory rural appraisal EIA involved the community in active decision-making. This process will continue even after this EIA has been submitted, as well as during

future EIA in which similar tools will be used to create consensus among stakeholders on specific environmental and social issues.

Secondary stakeholder consultations were more formal as they involved government representatives and local organizations, consulted during face-to-face meetings. They were briefed on the EIA process, the project design, and the potential negative and positive impact of the project on the area's environment and communities. It was important not to raise community expectations unnecessarily or unrealistically during the stakeholder consultation meetings in order to avoid undue conflict with community's leaders or local administrators. The issues recorded in the consultation process were examined, validated, and addressed in the EIA Report.

This section involves communication of possible impacts and concerns with

- ✓ Proponent
- ✓ The responsible authority
- ✓ Other departments and agencies
- ✓ Environmental Practitioners and experts
- ✓ Affected and wider community

9.3 Proponents Environmental Management Team

Consultation regarding M/S Sheikhoo Sugar Mills Ltd. was done with Proponent and supervisor and anticipated impacts were discussed. Concerns of locals, Environmental Practitioners & experts were discussed and asked to consider them while construction of above-said project. Locals will be preferred for employment after providing proper training. Mitigations measures mentioned in EMP will be truly implemented.

9.4 Responsible Authority

Overall responsibility for implementation of EMP will be that of project proponent. A supervisor will be appointed to manage the all-safety related hazards, environmental issues and ensure the compliance of PEQS. Following are the designated roles and responsibilities of employees involved in monitoring and management of the adverse impacts.

Table 94: Roles and Responsibilities

Roles and Responsibilities		
Sr#	**Concerned Persons**	**Duties**
1	**Project Manager**	Following will be the responsibilities of the Project Manager • Ensure that the contractor is aware of all specifications, legal constraints, standards and procedures pertaining to project specifically with regards to environment. • Ensure that all stipulations within the EMMP are communicated and adhered to by contractor(s). • Monitor the implementation of EMMP throughout project by means of site inspections and meetings. This will be documented as part of the minutes of the site meeting documents. • Ensuring project execution within defined budget and proposed timeframe. • Conducting regular check of project status and meetings with project team. • Provide support and guidance to team members as and when needed. • Project Manager is expected to continually monitor and improve the overall performance of their operation.
2	**Site Engineer**	Following will be the responsibilities of the Site Engineer during the construction and operational activities: • Be fully conversant with the EIA, EMMP and conditionsof its approval. • Be fully conversant with all relevant environmental legislation, policies and procedures and ensure compliance with Punjab Environmental Quality Standards. • Have overall responsibility for the implementation of EMMP. • Conduct audits to ensure compliance to the EMMP. • Liaise with the Project Manager or his delegate, the Environmental Officer and relevant discipline Engineers on matters concerning the environment. • Prevent actions that will harm or may cause harm to the environment and take steps to prevent pollution on the site. • Confirm activities to the demarcated construction site.
		In addition to the health and safety responsibilities held by staff, managers and supervisors must do whatever is reasonably practical to ensure that both the workplace

3	**HSE Manager**	and the work itself are safe. This includes: • Ensuring that staff is appropriately trained andsupervised. • Identifying, assessing and managing health and safetyrisks. • Consulting with workers (including staff, affiliates andcontractors): i. Health and safety risk assessments ii. Decisions are made about the measures to betaken to eliminate or control these risks iii. Health and safety risk assessments • Implementing health and safety risk management programs relevant to their operations, research and consulting functions and work environment. • Reporting (to the Human Resources Unit), investigating and responding to all hazards, accidents, and incidents and taking action to control the risk. • Assisting with the development, implementation and maintenance of a return to work program for injured staff. • Be fully conversant with the EIA, EMMP and conditions of its environmental approval Be fully conversant with all relevant environmental legislation, policies and procedures and ensure its compliance. • Convey the contents of this document to contractor site staff and discuss contents in detail with Project Manager and Contractor. • Undertake regular and comprehensive inspection of site and surrounding areas in order to monitor compliance with the EMMP. • Take appropriate action if the specifications contained in the EMMP are not followed. • Monitor and verify that adverse environmental impacts that are likely to be occur should be kept to a minimum level, as far as possible. • Review and approve construction methods, with input from the Site Manager, where necessary. • Ensure that activities on site comply with all relevant environmental legislation. • Compile progress reports on regular basis, with input from the Site Manager, for submission to the Project Manager, including a final audit before starting the operation at site. • Liaise with Site Manager regarding the timely monitoring. • Report any non-compliance or remedial measures that need to be applied.

		• All environmental problems arising on construction area will be reported to Site Manager by Environmental Manager. • Reports on such problems will be submitted to Project Manager by Site Manager.
4	**Contractors and Service Providers**	• Environmental management is part of on-site quality management. Under the environmental management plan, the contractor shall propose measures to minimize environmental impacts during construction and submit them to the HSE Officer. • Comply with the environmental management specifications. • In case of having impacts on environment, the contractor will refer them to concerned person in time to get instructions and then take next step. Adhering to any instructions issued by the Engineer/Project Manager on the advice of the HSE Manager. • Submitting a report at each site meeting which will document all incidents that have occurred during the period before the site meeting. • Maintaining a public complaints register. • Arrange that all his employees and those of his subcontractors receive training before the commencement of construction.

9.5 Other departments and agencies

Consultation regarding extension of steel mill (upto 650MT/day) of M/s Sheikhoo Sugar Mills Limited was carried out with Government official. Concerns of locals, Environmental Practitioners & experts and Government departments were discussed and asked to consider them while construction of above-said project. Locals will be preferred for employment after providing proper training. Mitigations measures mentioned in EMP will be truly implemented.

9.6 Environmental Practitioners and experts

Consultation with environmental practitioners and experts was noted and their comments and suggestions were observed and mentioned below.

Table 105: Consultation with Environmental Practitioners and Experts

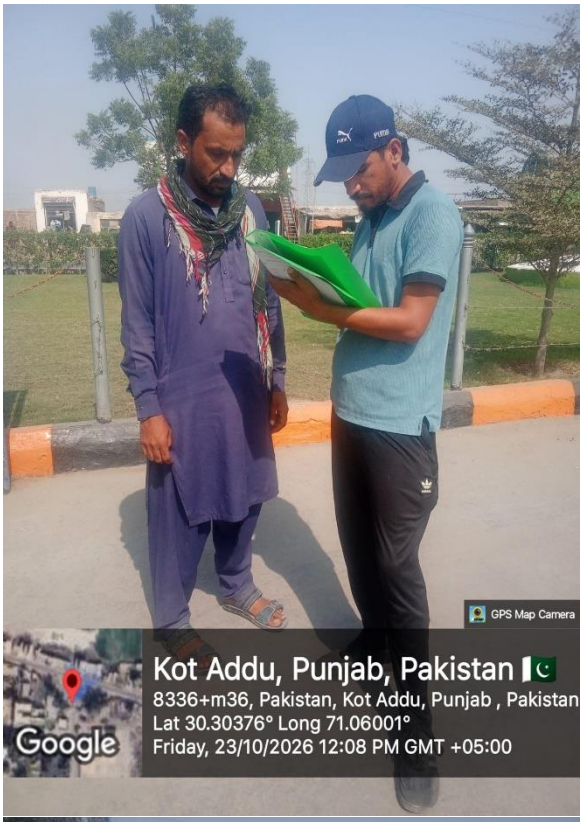
Sr. No	Name	Qualification	Comments/Suggestions
1.	**Fukaiha Falaq**	M.Phil Environmental Engineer	She said that: • Environmentally friendly operation of said facility should be ensured. Moreover, it will help to comply with PEQS. • Sewage water should be disposed of properly.
2.	**Mr. Attiq**	BS Environmental Sciences	Following comments/suggests were noted: • He said that locals should be preferred for employment opportunity. • In case of outsider's residence must be provided within the facility or in its nearby vicinity. • Proper mitigation measures must be adopted during construction and operation of said project.
3.	**Misbah Amanat**	B.S Environmental Engineer	• She said that in case of removal of vegetation trees must be planted after construction at designated green areas. • More water conservation strategies must be adopted. • Solid waste must be collected and disposed off properly by using standard practices of the area.
4.	**Mehreen Riaz**	B.S Environmental Engineer	• Proper leveling and commissioning must be done at the end of civil work. • Environmental manager must be hired to ensure the compliance of PEQS. • By installation of said project the impact on air quality must be minimized

9.7 Affected and Wider Community

Social survey was conducted to consult with local community. Their concerns were noticed and discussed with proponent and their team. Majority was in favor of project their details are given below in table 17.

Table 116: Concerns Noted during Community Survey

Sr.#	Respondents	CNIC/Contact	Concerns
i.	**Mumtaz**	0340-0171011	During the survey in the study area follow concerns of the local community were not • Locals should be preferred for the job opportunities. • Wastewater should be treated prior to final disposal. • Noisy activities should be confined. • Solid waste should be managed effectively by adopting the standard practices of the area. • Cleanliness of the area should be ensured. • An effective EMMP should be designed and enforced with true spirit. • Health of the workers should be ensured. • Plantation should be carried out at extensive scale. • Workers should be hired from local community. • Indigenous tress around the facility should be planted to control air pollution.
ii.	**M. Aslam**	0345-7279063	
iii.	**Abdul rehman**	0301-5190961	
iv.	**M. Aslam**	0300-8191819	
v.	**M. Ismail**	0345-7188711	
vi.	**Ghulam**	0302-6961500	
vii.	**M. Riaz**	0303-8757962	
viii.	**Allah rakha**	0304-5365731	
ix.	**Mazhar Hussain**	0302-6672021	
x.	**Ijaz**	0300-4567520	


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CONCLUSION AND RECOMMENDATIONS

The report presents Environmental Impact Assessment (EIA) for the extension of steel mill by M/S Sheikhoo Sugar Mills Ltd. EIA of Project is conducted according to guidelines notified by EPA. It includes description of the project, description of the environmental baselines, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is included in the study. The conducted EIA showed all anticipated impacts (both positive and negative), associated with the project. Appropriate mitigation measures as explained in the environmental study shall reduce, if not eliminate, these impacts so that these are within acceptable limits. Moreover, no deterioration, depletion or exploitation of resources is expected to be caused by this project.

Based on overall assessment of the environmental impact of the project, it is concluded that the project is not likely to cause any significant adverse impact on the social, physical and biological environment of the area, provided that suitable mitigation measures as identified in this study are implemented.

It is accordingly recommended that Environmental Approval for the project may be issued by the Punjab Environmental Protection Agency.