Hextar

"Construction of Hextar Industries Pvt. Ltd."

ENVIRONMENT IMPACT ASSESSMENT (EIA) REPORT

January-2023

ASIAN CONSULTING ENGINEERS (PVT. LTD.)
www.asiancon.com

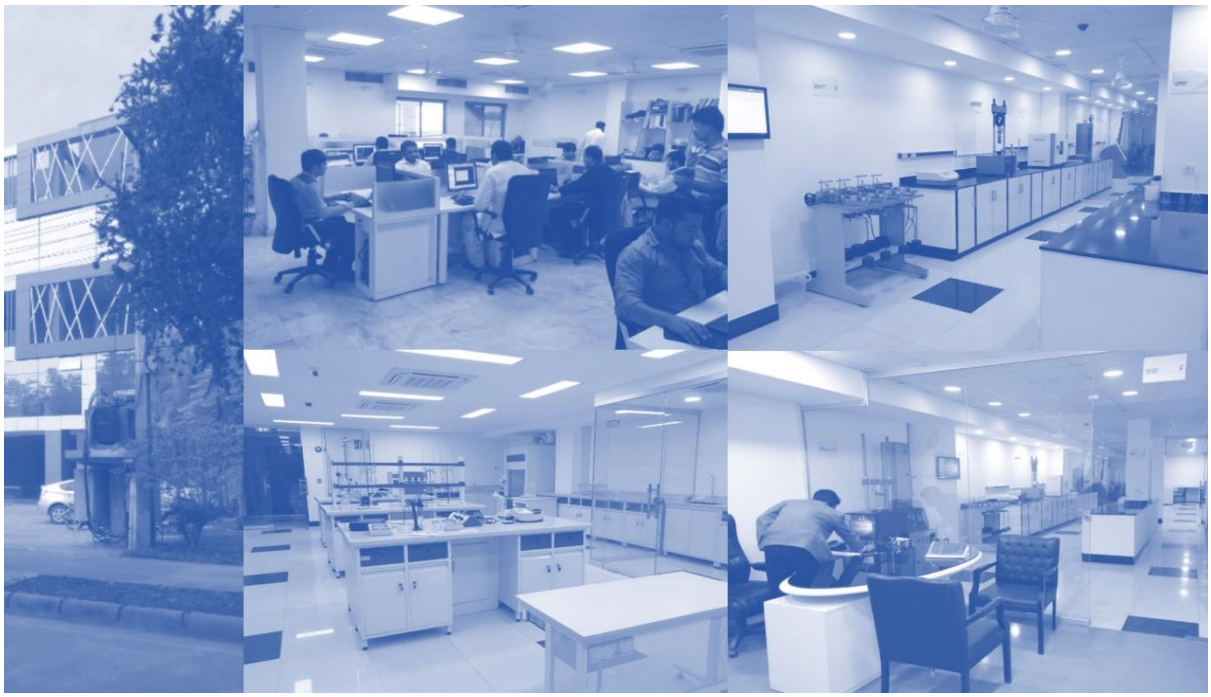
Head Office:
C-3, Jhelum Block, Green Forts-II, Lahore
Phone: +92 42 35450914-15
Fax: +92 42 35450916,
Email: arslan@asiancon.com

Islamabad: 204 Al-Safa Heights-1, F/11, Markaz, Islamabad.
Phone: +92 321 5943808

Karachi: Office No. 410, 4th Floor, Business Avenue, PECHS, Block-6, Main Shahrah-e-Faisal, Karachi.

Peshawar: Syed's tower Office No. 1, 4th Floor, Opposite to Custom House, University Road, Peshawar.

QUALITY CONTROL SHEET



QUALITY CONTROL SHEET						
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NOTES						

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EXECUTIVE SUMMARY

S.1.1 PROJECT TITLE AND LOCATION

The project, for which this Environmental Impact Assessment (EIA) Study has been conducted, is the construction of chemical industry under the name of Hextar Industries Pvt Ltd. at Khand Pind, Pando Ki Jugian Stop, 4-Km Sue Aasal, Ferozpur Road, Lahore.

S.1.2 PROJECT PROPONENT

Farrukh Saeed Durrani, the proponent of project, is intended to get Environmental approval for the construction of said unit by submitting the Environmental Impact Assessment Report for the compliance of section 12, PEPA, 1997 (Amended 2012).

Table 0-1, Details of Project Proponent

Name	Farrukh Saeed Durrani
CNIC	35201-6792771-5

S.1.3 THE EIA STUDY CONSULTANT

ASIAN Consulting Engineers Private Limited (AsCE) is providing their services to conduct environmental assessment for the project. ASIAN Consulting Engineers Private Limited is an independent consulting company working in the field of environment. Asian provides consulting services and sustainable solutions for infrastructure projects, industrial projects and social development projects.

The contact details for the company are given as under-:

Asian Consulting Engineers Private Limited
Tel: +92 42 35450914-5 | **Fax:** +92 42 35450916 | **Mobile:** +92 321 4260133
E-mail: arslan.hanif@asiancon.com, aleem.butt@asiancon.com
Address: C-3, Jhelum Block, Green Forts-II, Lahore, Pakistan.

S.1.4 BRIEF DESCRIPTION OF THE PROJECT

The project is the construction of Hextar Industries Pvt Ltd. The impacts of Construction & operational phase would be considered.

S.1.5 BRIEF OUTLINE OF THE PROPOSAL

Name of the proposed project	Hextar Industries Pvt Ltd..
Purpose of the Project	To establish the pesticides and fertilizer formulation unit for Hextar Industries Pvt. Ltd. To enhance economic growth of the country.
Process Details	
Manufacturing Process	Blending, formulations, packaging and storage

	of pesticides and fertilizers and storage in ambient environment,
Raw material	Pesticides technical, Emulsifiers, Stabilizers, Solvents, Fillers, Nutrient based salts, Nutrient Fertilizers, Nutrient based Acids, Acid to neutralize pH, Nutrient ashes and Nutrient Bases
Final product	Various formulation of chemicals (pesticides and fertilizer) and finished products for packaging (detailed list of chemicals mentioned in Chapter 4, project description)
Source and quantification of raw material	20 consignments of 16 tons weight per year from local and imported source
Production Capacity	30 metric tons/ day formulations and blending capacity 50,000 units per day packaging capacity
Land Requirement	
Total Area of Industry	43.9 kanal
Covered Area	54390 sqft
Open Area	143939 sqft
Status and location	
Location of the proposed site	Khand Pind, Pando Ki Jugian Stop, 4-Km Sue Aasal, Ferozpur Road, Lahore .
Water Requirement	
Water consumption for the project	5700 L/day during construction phase At operation phase 1500L/ batch will be used 4750 L/day of water will be used for domestic purposes.
Ways of extraction	Bore at 700ft
Source of Water consumption	Underground.
Source of waste water	Constructional, operation and Domestic Wastewater
Mode of treatment	Only domestic and construction wastewater will be produced that will be stored temporarily in soaking pit and collected regularly by AT waste management company (EPA certified waste management facility). Wastewater from machinery washing is recycled.
Solid Waste	
Source of solid waste generation	Construction, Domestic, expired products and empty bags
Mode of disposal	Domestic waste will be handed over to AT Waste Management Company (EPA certified waste management facility).
Manpower	
Labor Force	About 20-30 persons during construction
	About 20-25 persons during operations

Power requirements	
Source of power	Power requirements at the project site will be fulfilled by LESCO from transformer of 250KVA. 50KVA, 100KVA diesel generator

S.1.6 LOCATION

Land coordinates are given below:

North	open land
South	access road
East	Industry
West	open land

For further details, google earth map of the project is attached here under.

S.1.7 MAJOR IMPACTS & THEIR MITIGATIONS

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

Table 0-2, Summary of Major Impacts during Construction & Operation Phase

Pollutant	Constructional Phase	Operational phase
Particulate matter (PM)/dust	• Particulate matter will be generated during the constructional and transportation activities at the site • Due to raw materials loading/ unloading	• During the operational phase dust will be only be generated due to transportation vehicles and generator stack.
Gaseous emissions	• Flue gases will be generated due to site generators and vehicles	• Flue gases will be generated due to generators and vehicles
Noise	• Noise will be only generated due to construction machinery and vehicles transporting materials	• Noise will be only generated due to generator, machines and vehicles transportation.
Odor	• Nil	• Nil
flora and fauna	• No significant impact on flora and fauna.	• No significant impact on flora and fauna.
Solid Waste	• Solid waste will be generated due to construction and	• Solid waste will be generated from domestic sources, expired products and empty

Pollutant	Constructional Phase	Operational phase
	domestic sources. Also due to sludge from septic tank	bags • Also due to sludge from septic tank
Soil Contamination	• Soil can be contaminated due to leaching of oil, fuel, any stored oil.	• Soil can be contaminated due to leaching of oil, fuel, any stored oil.
Waste water	• Waste water will be generated from constructional and domestic sources	• Waste water will be generated due to domestic sources. • Machinery washing, domestic wastewater, other process wastwaer
Health and safety issues	• Health and safety issues will be arising due to machinery handling and constructional activities	• Health and safety issues will be arising if flue gases or noise exceed the permissible limits of PEQS, and improper practice of work during storage, handling and transportation of fuel.
Socioeconomic	• Disturbance to neighbors by constructional activities	• Employment opportunity

S.1.8 RECOMMENDATION FOR MITIGATION MEASURES

Pollutants	Recommendations during Construction phase	Recommendations during Operation phase
Particulate matter (PM)/dust	• Sprinkling of water will be done • All constructional raw material will be kept covered.	• Maintain vehicle speeds.
Gaseous emissions	• Constructional machinery and vehicles will be tuned and maintained properly. • All project vehicles will be checked regularly	• Canopies should be built over generators to avoid noise pollution (if any) • Generators should be maintained properly. • PPEs should be provided to workers where needed. • All the places within the unit are paved to avoid any dust emissions during loading/unloading and transportation.
Noise	• Vehicles to carry raw materials will be operated during night time as far as possible. • Ear plugs will be provided	• Ear plugs/muffs will be provided to workers in case the noise exceeds the PEQS during working hours. • Proper Maintenance of

Pollutants	Recommendations during Construction phase	Recommendations during Operation phase
	in case of heavy noise	machines and generated will be done to avoid noise. • Trainings for safe driving practices & HSE trainings of the employees and workers will be recommended. • Within the unit, horns are prohibited during working hours and speed limit of 15 km/hour should be permissible.
Odor	• Nil	• Nil
Impacts on flora and fauna	• Only herbs and shrubs are present currently at project site	• Plantation will be done at project side during operation in order to improve the environment of the area.
Solid Waste	• Constructional waste will be utilized for road filling and maintenance • Domestic waste was disposed of properly, handed over to contractors, placed in bins.	• Waste bins are placed at suitable places. • Colored Bin System is recommended in company. • Domestic/office waste will be handed over to A.T Waste Management
Soil erosion/Soil Contamination	• Placed plastic sheet under generator or leaching material to avoid leaching (if any) • Less removal of vegetation or clearing of land	• Soil contamination will be controlled by maintaining leakage record of vehicles, and by regular inspection. • Fuels and chemicals to be stored properly at safe place. • Where needed, secondary containments are used to secure environment.
Waste water	• Construction waste will be treated in septic tank before disposal in any drain.	• Waste water from Industry will be treated in Septic tank then collected by AT waste management (EPA certified facility).
Health and safety issues	• PPEs will be provided to workers during constructional activities. • First aid will be provided to project related employees. Specially the worker dealing with	• Hextar Industries (private) Limited will designate teams for HSE concern emergency equipment like fire extinguishers, spill kits, water hydrant system, effective use of PPEs and first aid are

Pollutants	Recommendations during Construction phase	Recommendations during Operation phase
	loading and unloading of Fuel	already well managed.
Socioeconomic	• People will be informed in advance when work is about to start at the site. • Job opportunity was provided to local people of the area	• Community wellbeing should be considered and neighbor's privacy should not be disturbed. • Local people should be preferred for the employment.

S.1.9 PROPOSED ENVIRONMENTAL MONITORING

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

- Ambient Air

Quarterly monitoring for ambient air should be conducted during construction & operational activities of the project and report should be submitted to EPA Punjab.

- Noise

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

- Water Quality

Quarterly monitoring of water quality should be conducted during construction & operational phases of the project and report should be submitted to EPA Punjab.

S.1.9.1 Schedules of Proposed Monitoring:

Sr. No.	Parameters	Monitoring Schedules
1	Ambient Air Monitoring (NO_x, CO_x, SO_x, VOCs, PM_{10})	Quarterly
2	Noise Level	Quarterly
3	Water quality	Quarterly

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

SECTION - 1: INTRODUCTION

The development of any Project brings about changes, both positive and negative, in the environmental and social settings of the Project Area. The intensity and the level of change, however, depend upon the nature of the project and the baseline environmental conditions of the area.

1.1 PURPOSE OF THE REPORT

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

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

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

1.2 IDENTIFICATION OF THE PROJECT

The project is the Construction of Agrichemical Industry under the name of Hextar Chemicals Pvt. Ltd.

1.3 THE PROPONENT

Farrukh Saeed Durrani, the proponent of project, is intended to get Environmental approval for the construction of said unit by submitting the Environmental Impact Assessment Report for the compliance of section 12, PEPA, 1997 (Amended 2012).

Table 1-1, Details of Project Proponent

Name	Farrukh Saeed Durrani
CNIC	35201-6792771-5

1.4 BRIEF DESCRIPTION OF PROJECT

1.4.1 Nature & Size of Project

The project for which this Environmental Impact Assessment (EIA) Study has been conducted for construction of the Hextar Industries Pvt Ltd.. that is located at Khand Pind, Pando Ki Jugian Stop, 4-Km Sue Aasal, Ferozpur Road, Lahore and is a pesticides and fertilizers blending, mixing formulation and packaging unit. Total area of industry is 43.9 canal. And covered area of project is 54390 sqft and open area is 143939 sqft. The capital cost of the project will be about 48 million rupees.

1.5 THE CONSULTANT

ASIAN Consulting Engineers Private Limited (AsCE) is providing their services to conduct environmental assessment for the project. ASIAN Consulting Engineers Private Limited is an independent consulting company working in the field of environment. Asian provides consulting services and sustainable solutions for infrastructure projects, industrial projects and social development projects.

The team of experts are given as under-:

Sr. No.	Team Member	Position Held	Qualifications
1.	Aleem Butt	Chief Environmentalist Team Leader-EIA	M.Phil. Environmental Sciences, Government College University (GCU)Lahore M.Sc. Environmental Sciences, Punjab University (PU), Lahore NEBOSH, Lead Auditor
2.	Noman Ashraf	Environmental Specialist	M.Phil. Environmental Sciences, Government College University (GCU) Lahore PGD, Environmental Law University of the Punjab, Lahore
3.	Faiza Anjum	Environmental Specialist	MS Environmental Sciences University of the Punjab, Lahore
4.	Sajjad Hussain	Chief Chemist	M.Phil. Chemistry Government College University (GCU) Lahore
5.	Hafsa Mehmood	Environmentalist	BS Hons Environmental Sciences, Government College University (GCU) Lahore

Sr. No.	Team Member	Position Held	Qualifications
6.	Ayesha Rasheed	Environmentalist	BS Hons Environmental Sciences, Government College University (GCU) Lahore
7.	Asma Butt	Sociologist	M.Sc. Sociology, university of the Punjab
8.	Engr. Umair Tallat	Sr. Field Engineer	M.S. Environmental Engineering, NUST Islamabad
9.	Mujeeb ur Rehman	Field Engineer	BS. Environmental Engineering, UET Lahore

The contact details for the company are given as under-:

Asian Consulting Engineers Private Limited
Tel: +92 42 35450914-5 | **Fax:** +92 42 35450916 | **Mobile:** +92 321 4260133
E-mail: arslan.hanif@asiancon.com, aleem.butt@asiancon.com
Address: C-3, Jhelum Block, Green Forts-II, Lahore, Pakistan.

1.6 LOCATION

Land coordinates are given below:

North	open land
South	access road
East	Industry
West	open land

For further details, google earth map of the project is attached here under.

Figure 1-1, Google Map of Project Site

1.7 METHODOLOGY OF EIA REPORT

EIA Study comprises of Executive Summary following eight chapters as detailed below;

Chapter 1, Introduction; gives rational and overview of the Project, need for Environmental Impact Assessment study, its objectives and finally structure of the report.

Chapter 2, Scoping Project; gives details of spatial and temporal of project, important issues raised during consultation, significant impact and factor to be dertermine.

Chapter 3, Description of Project; gives a rather detailed account of the Project particularly emphasizing those Project components which are of importance in relation with environmental and social aspects.

Chapter 4, Analysis of Alternatives; describes the analysis of alternatives, which could be site alternative, design or technology alternatives.

Chapter 5, Stakeholders and Public Consultations; deals with the outcome of the consultation carried out with the local communities, knowledgeable

people, public representatives, etc. It discusses the concern of various types of the people and provides an outline how these have been addressed within the study of the Project.

Chapter 6, Description of Environmental and Social Baseline Conditions; provides information about the environmental and social settings of the Project Area including geology, climate, flora, fauna, water resources, socioeconomic conditions etc.

Chapter 7, Potential Environmental Impacts and their Mitigation Measures; identifies the potential impacts due to the implementation of Project on the physical, biological and social environment of the Project Area.

Chapter 8, Environmental Management and Monitoring Plan; outlines the environmental management plan, identifies the roles and responsibilities to implement EMMP, suggest monitoring frequencies of various parameters and EMMP costs etc.

Chapter 9, Conclusion and Recommendations; sums up the report and conclusions and recommendations resulting from the study

SECTION - 2: SCREENING AND SCOPING OF PROJECT

2.1 SCREENING OF THE PROJECT

According to the IEE and EIA Regulations, 2022, the Hextar Industries Pvt Ltd.. project falls under Schedule II (List of projects requiring an EIA), Section B-8 " Pesticide and fertilizer manufacturing unit."

Table 2-1, Spatial and Temporal Boundaries of Environmental Assessment

Spatial Boundaries	Temporal Boundaries
REGIONAL: Impact could extend to the region surrounding the proposed Project	YEAR ROUND: Significant throughout the year
LOCAL: Impact limited to the local area in close proximity to the proposed Project	SEASONAL: Significant on a seasonal basis, depending on nature of valued environmental component (VEC)

2.2 IMPORTANT ISSUES AND CONCERNS RAISED DURING CONSULTATION

During the survey, respondents were inquired about their views regarding the proposed project. Almost all respondents showed their concerns about the Proposed Project. Some of the respondents had positive thinking and they were in favour of the project. But few respondents showed their concerns regarding construction phase dust and noise issues. They expressed vividly that such projects should be completed in time.

During the survey, respondents were inquired about their views regarding the perceived impacts of the project during construction phase. Almost all respondents express their positive and negative views. The views are:

- There will be noise and dust pollution
- There will be health and safety issues
- There will be issues related to chemical safety

2.3 SIGNIFICANT IMPACTS AND FACTORS TO BE DETERMINED

- Soil Contamination and Erosion
- Ground water contamination
- Air quality deterioration
- Noise
- Waste material
- Labor HSE issues
- Chemicals and fire safety

SECTION - 3: ANALYSIS OF ALTERNATIVES

This Chapter deals with the analytical overview of different alternatives that have been considered. The analysis has been carried out critically so as to justify the need of the Project and to select the most feasible alternative. Besides the economic viability; environmental sustainability and social soundness of the project has also been considered while analyzing different alternatives.

3.1 THE NO PROJECT ALTERNATIVE

A zero-alternative entail maintaining existing use to which the project site has previously been put to. This alternative would eventually evade any short-term potential negative impacts from project execution. To this end, any potential positive impacts envisaged during midterm and long-term project implementation will be missed.

Adopting zero alternatives would mean abandoning all the potential that the site offers to investor(s), contribution to government revenue and even local community livelihoods improvement.

3.2 LOCATION ALTERNATIVES

To fulfill the industrial aspects of the project under reference of this EIA Report, it is to be sited at a place where processing activity is either already going on or there are bright prospects of the same. Concurrently, it must also meet the legal requirements of the Punjab Environmental Protection Act.

3.3 MODIFIED CONSTRUCTION TECHNOLOGY ALTERNATIVES

The development will be constructed using modern, locally and internationally accepted technology and materials to achieve public health, safety, security and environmental aesthetic requirements. Equipment that saves energy and water will be given first priority without compromising on cost or availability factors. The concrete pillars and walls will be made using locally sourced stones, cement, sand (washed and clean), metal bars and fittings that meet the quality standards requirements.

3.4 TECHNOLOGY ALTERNATIVES

There is local machinery available that is environmentally friendly. Proponent has already bought machinery for units Final design of hall and Machinery is based on latest available technology to produce high quality. These machines have pollution remove technologies built in. Therefore, it the best option to use that technology.

3.5 ENVIRONMENTAL ALTERNATIVES

Two alternatives' sources were considered for the lighting in the Project Area:

- Using existing power supply of LESCO
- Using Solar Energy

Although the option of lighting through solar panels seems suitable as sun being the most suitable alternate energy source but it was not selected due to the following reasons:

Solar lights can be adopted but, the security of solar lights can be a major issue as these are very expensive and prone to theft. To overcome this problem, the height of the lights can be increased. But increasing height to avoid theft will reduce the light intensity. Apart from security reasons, solar power is inconsistent and not reliable as it depends on the steady delivery of special atoms called photons to keep the electricity generating process going on. As soon as the sun disappears behind thick clouds or falls below the horizon at night, the photons stop striking the solar panels and the power drops. Some solar power can be stored in large battery arrays. Solar power would only be viable with current technology as long as the sun's photon atoms can strike a solar panel directly. The power generation during foggy weather and cloudy days will be reduced. So, the power supply from LESCO will be considered.

3.6 ECONOMIC ALTERNATIVES

Raw material for construction will be purchase from nearby area from local vendor, so that the transportation cost of material might be save.

SECTION - 4: DESCRIPTION OF PROJECT

This chapter presents all aspects of the project. It describes the nature of the project, its location, designs and site layout/ plan. It presents the activities that will be involved during all stages of project; how product will form, detail of process and machinery as well as details on supportive resources i.e. man power and utility requirements.

4.1 OBJECTIVE OF PROJECT

Following are the main objectives of the project:

- To fulfill the requirements of Agriculture industry
- Prepare good quality fertilizer and Pesticides parts to fulfill country's requirement
- Enhance the growth of economy.
- Create job opportunities for the local people, definitely.

4.2 LOCATION & SITE LAYOUT OF PROJECT

To fulfill the Industrial aspects of the project under reference of this EIA Report, it must also meet the legal requirements of the Punjab Environmental Protection Act, 1997 (Amended 2012). Availability of land at the best convenient place is equally important among other considerations for the site selection. Availability of access roads, communication facilities, electricity, basic infrastructure, sewerage etc. is yet the other necessary requirements.

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

The site selected on the following reasons:

- Easy access to road
- Site is safe from any kind of flood
- Site is away from residential areas
- Area of land availability was enough.

Land coordinates are given below:

- North open land
- South access road
- East Industry
- West open land

For further details, google earth map of the project is attached here under.

Figure 4-1, Google Map of Project Site

Detailed Google Map is Attached as Annexure -E

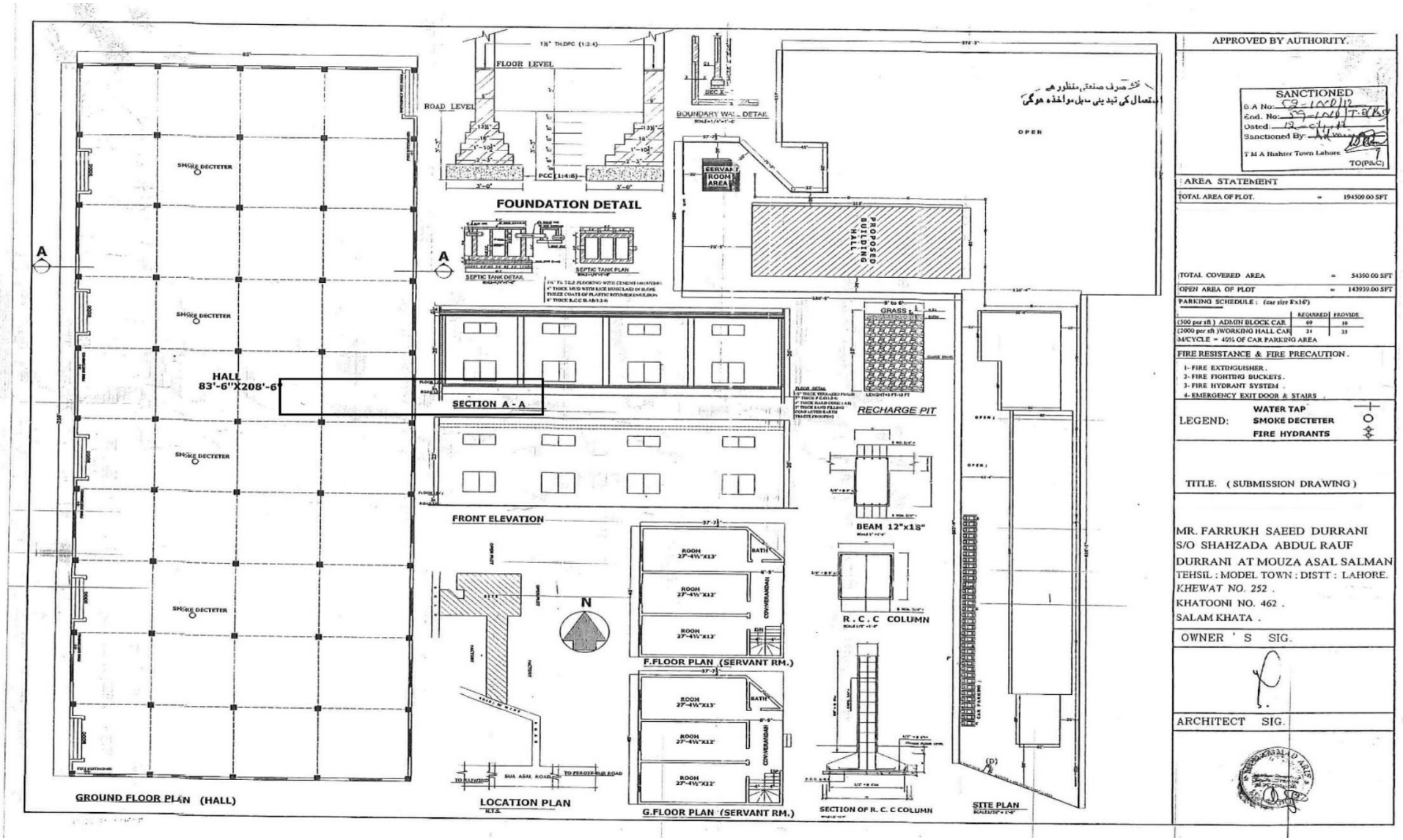


Figure 4-2, Layout Map of the Project

4.3 LAND USE & VEGETATION FEATURES ON SITE

Status of land at project site is industrial with several industries already established in the vicinity of project site. TMA Approved map for project site is attached as ANNEXURE-E. A few herbs and shrubs are present at project site that will be cleared during construction. Efforts will be made to protect any tree within the protect corridor during construction works.

4.4 ROAD ACCESS

A service road is present at front side of industry. This road connects to Sue Asal Road.

Figure 4-3, Road Map

4.5 COST & MAGNITUDE OF THE PROJECT

Total cost of the project is 48 million PKR which include all the thing regarding this project. The production capacity for blending and formulation is 30 metric ton per day and for packaging is 50000 units/day.

4.6 SCHEDULE OF IMPLEMENTATION

Detailed feasibility studies and designing of the project have been completed. Necessary legal, administrative and financial formalities have been also completed. The project is expected to be completed within 3 months from the date of environmental approval. Subsequently the construction, operational and maintenance aspects of the project will be undertaken by the proponent.

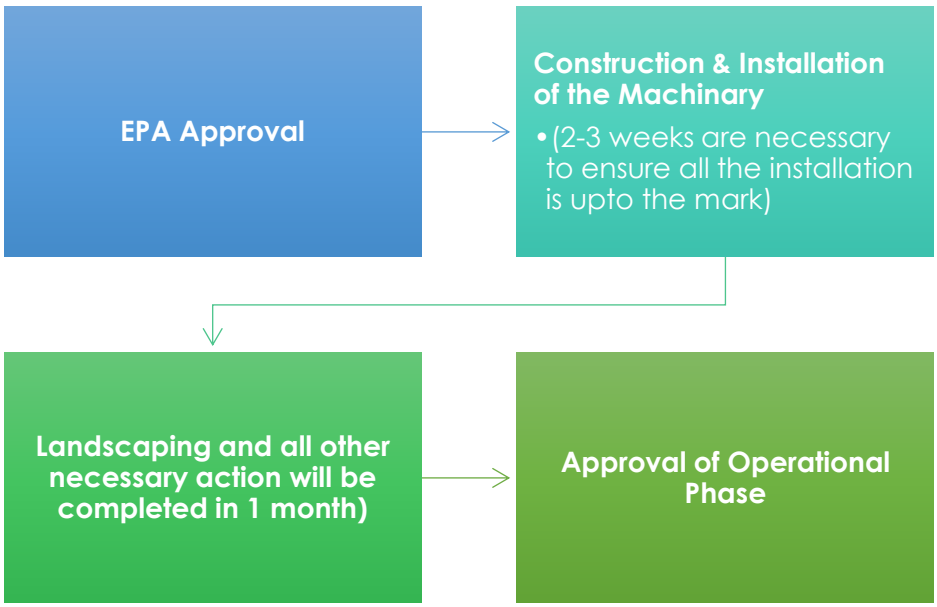


Figure 4-4, Schedule of implementation

4.7 PROJECT DESCRIPTION

Subject project is the Construction of Hextar Industries Pvt Ltd. Total area of industry is 43.9 kanal. And covered area of project is 54390 sqft and open area is 143939 sqft. The production capacity for blending and formulation is 30 metric ton per day and for packaging is 50000 units/day. Total cost of the project is approx. 48 million PKR. Final product will be various fertilizers and pesticide products.

4.7.1 Raw Material

Pesticides technical, Emulsifiers, Stabilizers, Solvents, Fillers, Nutrient based salts, Nutrient Fertilizers, Nutrient based Acids, Acid to neutralize pH, Nutrient ashes and Nutrient Bases

4.7.2 Final Products

List of products is given below

Table 4-1, List of products

Pesticides			Fertilizers
Acetochlor50 EC	Glyphosate IPA 48SL	Carbamates	Amino Acid 10%
Thiamathoxam + Lambda-cyhalothrin 22SC	Monomehypo 5 G	Sulfonylureas	Multi Micro Zn:Fe:Cu:Mn,6:2:1:1 10%
Buprofezine 25WP	Carbofuron 3G	Synergists	NPK 15:18:18
Bifenthrin 10 EC	Imidacloprid 70WS	Kasugamycin + Copper Oxyclorid 47 WP	Zinc 21% W/W
Mesosulfuron+ Fluruasulam + Fluroxypyr 26 OD	Metalaxyl+Mancozeb 72 WP	Copper Oxyclorid 50 WP	Humic Acid 40+7 %,
Butachlor 60 EC	Metmifop 8% + Cyhalofop-Butyl 12%	Pendimethalin 33EC	Boron 5% liquid
Cymoxanil + Mancozeb 72WP	Carbosulfan + Emamectin Benzoate 25EW	Organo-phosphates	Zinc 27% G
Acephate 75SP	Tribenuron methyl + Carfentrazone 24 WP	Organo-chlorides	NPK(8:8:6) liquid
Difenoconazol 25EC	Trichlorfon 80SP	Pyrtheriods	Potash 30% Liquid
Cypermethrin 10EC	Pyrimethanil 40SC	Buprofezin + Dinotifuran 63 WG	Zinc 10% (Liq.)
Chlorfenapyr 36SC	Pyrethrins	Quizalofop p ethyl 15 EC	Multi Micro Zn:Fe:Cu 7:2:1 10% w/w
Diflubenzuron + Lambdacyhalothrin 50 SC	Chlorotreniliprole	Lufenuron 5 EC	SOP 50%
Acetamiprid 20 SL	Synergists	Atrazine + Mesotrione 55SC	Humic Acid 10%+3.5%
Acetamaprid + Lambdacyhalothrin 26WDG	Bispyribac sodium + Bensulfuron 30 WP	Abamectin + Chlorfluazron 5EC	Zinc Sulphate Monohydrate 33 % G
Dimethoate 40 EC	Pyraclostrabin + Dimethomorph 18.7 WG	Lambda-cyhalothrin 2.5 EC	Organic Matter 25%
Thiophanate 70WP	Rimsulfuron + Quizalofop-P-Ethyl + Metribuzin 23.2 OD	Buprofezin + Dinotifuran 63 WG	NPK 20:20:20 powder
Tebuconazol + Azoxystrobin 50 SC	Azoxystrobin + Difenonazole 32.5SC	Chlorpyrifos 40 EC	Bombardier
Emamectin Benzoate + Lufenuron 3SC	Nitenpyram + Thiamethoxtram 50WDG	Cartap HCL 4G	
Diafenthuron 50 SC	Paraquat 20SL	Pyriproxyfen 10.8EC	
Emamectin Benzoate 1.9 EC	Sulphur 80 WG	Pyraclostrabin + Tebuconazole 45WP	
Atrazine 38SC	Clodinafop + Mesosulfuron 23 OD	Fipronil 5SC	
Bromoxynil octanate + MCPA 2EH 60 EC	Fipronil 0.4G	Mesosulfuron Methyl + MCPA	

Pesticides			Fertilizers
		Isooctyl+ Florasulum 25 OD	
Fipronil 2.5EC	DDVP 50EC	, Triazophos 40 EC	
Fipronil 5SC	Chlorpyrifos 48EC	Trifloxystrobin + Tebuconazol 75 WG	
MCPA + Fluruasulam + Fluroxypyr 25OD	Deltamethrin 1.5EC	Lambda-Cyhalothrin 15WP	
Bromoxynil octanate + MCPA 2EH 40 EC	Bifenthrin + Cypermethrin 3.5EC	Indoxacarb	

4.8 PROCESS DESCRIPTION

The industry receives already synthesized chemicals (active ingredients) as raw materials for pesticides and fertilizers that are then blended and formulated into various formulations (Emulsifiable Concentrate (EC), Soluble liquid (SL), Suspension concentrate (SC), Wettable powder (WP), Water-dispersible granuleor (WG) and Granular) and then packaged and stored as received as per requirement.

4.9 FLOW CHART

Process Flow
In Feed
Out Feed/Waste

Pesticides/Fertilizers Packing & Formulation/Blending Process

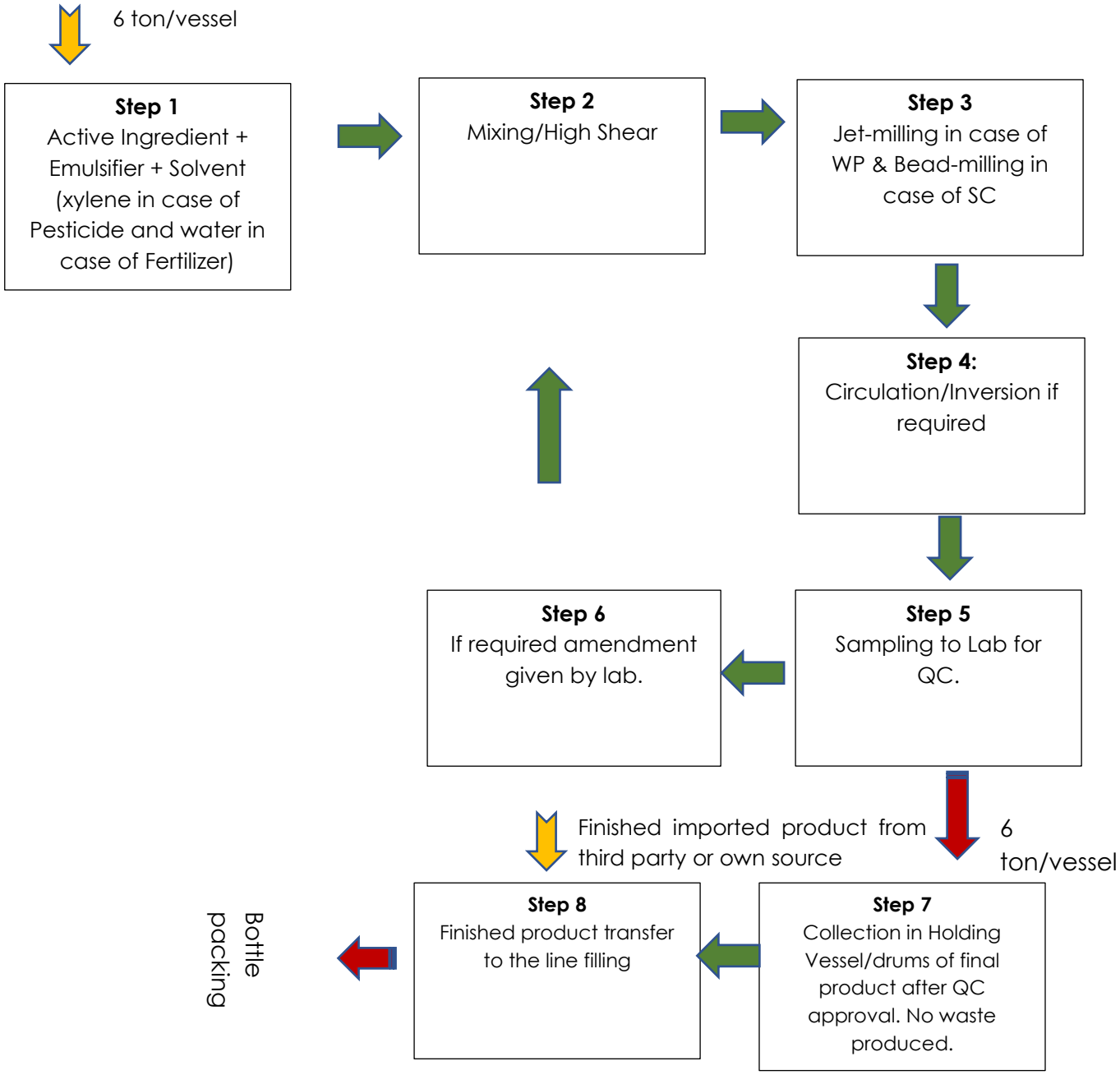


Figure 4-5, Process flow

4.10 LIST OF MACHINERY

List of machinery to be installed in Hextar Industries Pvt. Ltd. Is as follows;

Table 4-2, List of machinery

Sr. No.	Machinery	Capacity	Number
	Plant of Formulation and Refilling for Granules		
1.	Mixer with feeding worm	3MT/hour	1
2.	Mixer with feeding worm	1MT/hour	2
3.	Dryer	3MT/hour	3
4.	Auto refilling machine	3MT/hour	3
5.	Elevator (bucket 45 Feet)	1MT/hour	2
6.	Elevator (bucket 35 Feet)	3MT/hour	1
7.	Final grader (to-and-fro)	3MT/hour	3
8.	Storage Tank	2MT	2
9.	Storage Tank	5MT	3
10.	Slurry Tank with agitation	600kg	2
11.	Electrical control panel with PLC	-	1
12.	Iron structure	-	-
	Plant of Formulation and Refilling for Liquid Pesticides		
1.	Agitator/Reactor with feeding pump	6MT	1
2.	Agitator/Reactor with feeding pump	5MT	1
3.	Agitator/Reactor with feeding pump	2MT	2
4.	Auto refilling machine (8 Nozzles) with heat sealing	6MT	2
5.	Auto refilling machine (2 Nozzles)	2000 units/hour	1
6.	Auto refilling machine (1 Nozzles) with vessel	500 units/hour	2
7.	Heat Sealer (Single)	1000 units/hour	2
8.	Nutrient Formulation Mixture	5MT	1
9.	Auto Carton Sealer/CTN Taping Machine	200c/ns	1
10.	Shrink Tunnel (machine for shrink sleeves)	2000 units/hour	3
11.	Belt Conveyer:		2
12.	Iron structure for formulation:		1
	Plant of Repacking/Refilling for Powder Pesticides		
1.	Auto refilling machine	500 units/hour	1
2.	Auto bag Sealer (heat sealing of pouches)	1000 units/hour	2
3.	Belt Conveyer		1
	Workshop (Mechanical & Electrical)		
1.	Lathe Machine (4 Feet)	-	1
2.	Welding Unit	-	2
3.	Grinder	-	3
4.	Drill Machine	-	3
5.	Electric unit with Meters (for ampere, volt, etc.,)	-	1
	Others		
1.	Heli Lifter	4 tons	1
2.	Inject Printer (data printing machine)	5000pcs/hr	1
3.	Diaphragm Pump		3
4.	Diesel Generator	100 KVA	1
5.	Diesel Generator	50 KVA	1

4.11 WATER CONSUMPTION & WASTEWATER DISPOSAL

Industry is using ground water as source of domestic water, for that bore is done at 700 ft. In constructional phase, 5700 L/day water will be used.

At operation phase 1500L/ batch will be used during process, 4750 L/day of water will be used for domestic purposes. Water consumed during machinery washing will be recycled.

80% of total water consumed will be wastewater that will be treated through septic tanks and disposed of through AT Waste Management Company (agreement attached as Annexure J).

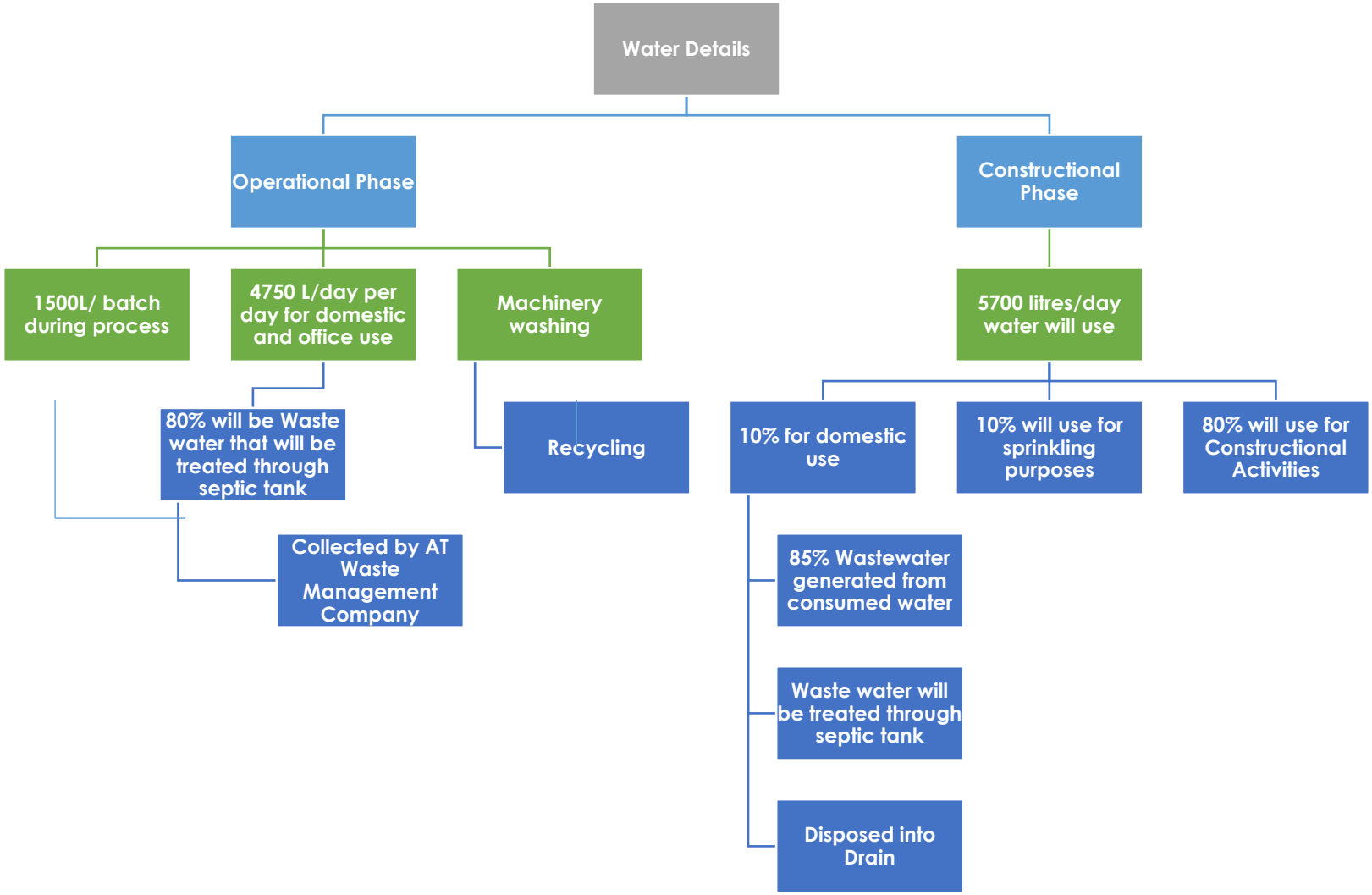


Figure 4-6: Water balance

4.12 SOLID WASTE

In constructional phase all waste materials such as landscape and land clearing debris, gravel and aggregate products, concrete, masonry scrap and rubble (brick, concrete masonry, stone), and plastics and paper from cement bags will be recycled during the construction activities as road filling and maintenance purposes. Solid waste generated during construction phase will be placed in separate bins. In operational phase, only office/ domestic waste will be that will be handed over to contractor.

During operation phase about 12.5 kg per person per day domestic waste will be produced that will be collected by local contractor.

Expired products, empty bags and liquid waste will be collected by AT waste management. Estimated average waste to be collected by AT Waste Management Company will be 1000kg/month.

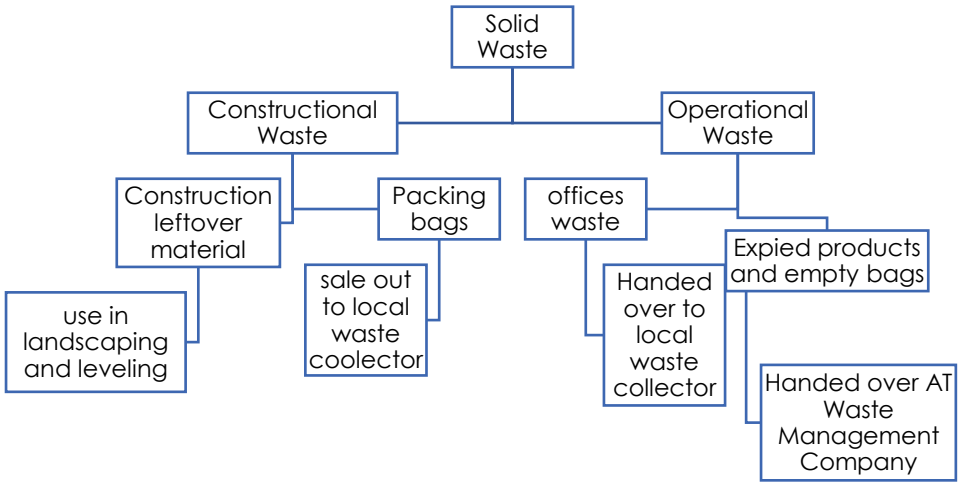


Figure 4-7, Solid Waste Detail

4.13 RESTORATION AND REHABILITATION PLANS

All possible precautions will be taken to prevent an untoward incident in terms of life and property losses. On completion of the project, solid waste will be removed from the site in order to maintain aesthetics of the area. All measures will be undertaken for ensuring occupational safety, security and clean environment during the working hours. Plantation and landscaping will also be done by the proponent after the completion of project.

4.13.1 Details of Restoration and Rehabilitation at the End of the Project Life

There will be no matter of rehabilitation as the site is already owned by the project proponent. At the end of the life of the project, it will be duly

dismantled with special precautions to avoid/ minimize pollution and at the same time taking all safety precautions to protect human life and property around the building.

The materials capable of recycling/reuse will be either sold in the market or to be reused for other suitable purposes.

4.14 GOVERNMENT & LOCAL APPROVALS:

The proponent will submit all relevant NOCs from other departments after the issuance of NOC from EPA.

SECTION - 5: DESCRIPTION OF ENVIRONMENTAL & SOCIAL BASELINE CONDITIONS

5.1 INTRODUCTION

This chapter describes the baseline conditions, which cover the existing physical, ecological, and socio-economic environment of the Project Area as well as the Study Area. Information on these aspects has been derived from the desk study of available data, field visits to the Project/Study Area and information obtained through detailed consultation with the Government departments and other agencies.

5.2 PHYSICAL RESOURCES

5.2.1 Topography

The project area is a part of the flat plain with very little slope. Hence, the topography is plain, unrelieved by any formations. The natural slope of the land is towards south side. The project site is at the height of 3300 ft from sea level.

5.2.2 Geology

The project site is located in Lahore which is a vast plain of alluvial material, deposited by Indus basin and five main rivers crossing the Punjab Plain. The alluvial deposits underlying the site are deposited by the river Ravi and its tributaries. The thickness of alluvial deposits in Lahore is thought to be more than 300 m which are underlain by the basement rocks of the Indian shield. The alluvial deposits mainly consist of sands, with intercalation of silt and clay layers of varying thickness. The geological structure of Lahore shows the presence of two aquifers aquifer 1 is shallow and aquifer 2 is deeper. The aquifers underlying the Lahore area are separated with an aquitard and are composed of unconsolidated alluvial sediments, with varying proportions of silt, sand and clay.

5.2.3 Seismology

The project site falls in the Punjab plain which shows low to moderate level of seismicity. The project region has also been subjected to severe shaking in the past due to earthquakes in the Himalayas. The epicentres of low to moderate magnitude earthquakes recorded in the Punjab Plain are associated with the subsurface fractures in the basement rocks which are concealed by the thick alluvial deposits. The known main active fault near Lahore is the Main Boundary Thrust (MBT) which passes at a distance of about 180 km towards northeast along the Himalayan front.

Probabilistic seismic hazard assessment recently carried out for Lahore area as part of the revision of seismic provisions of the Building Code of Pakistan

shows that the project area falls in Zone 2A. Seismic zone of Pakistan is shown in **Error! Reference source not found.**. It is therefore recommended that the p roject structures should be designed to cater the requirements of Zone 2A of Building Code of Pakistan (2007). Based on the evaluation of tectonic setting and seismicity of the project region, it is recommended that the important project structures should be designed to withstand a horizontal peak ground acceleration of 0.15g with 10% probability of exceedance in 50 year; **Figure 5-1**.

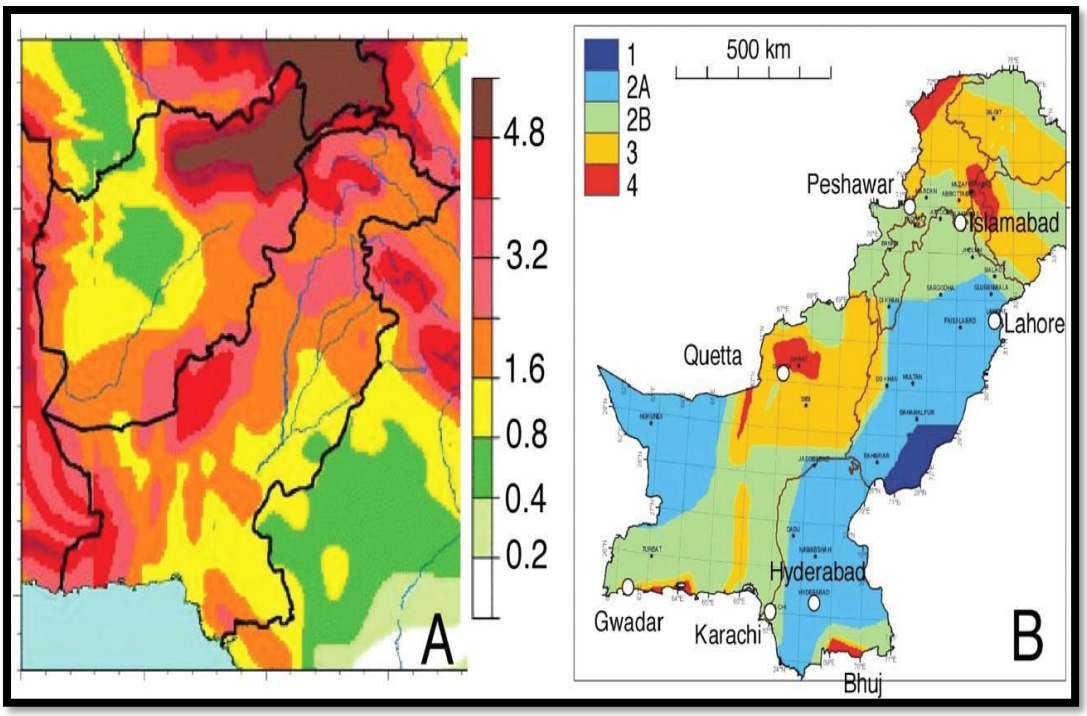


Figure 5-1, Seismic Zone of Pakistan (Geological Survey of Pakistan)

5.2.4 Soil

Subsurface Lithology is composed of Lean Clay/Silt/Silty/Sand/Poorly Graded Sand with Silt up to maximum investigated depth of 30 m below NSL. The topmost soil layer mostly comprises of Lean Clay in very soft to soft state. The thickness of this layer is approximately 3.0 m below NSL. This cover is absent at places.

A 7.0 m thick layer of Silt/ Silty/Sand/Poorly Graded sand with silt material in loose state is present underneath the topmost layer. The water table in the area is shallow in general having water logging and water pounding in some places.

5.2.5 Climate

The project site has mild climate. May, June, July and August are the hottest months. The temperature in summer from May to September is high, but the nights are relatively cool.

The highest temperatures throughout the year are in May and June. December and January are the coldest months. The highest and lowest average temperatures in summer are 112°F and 82°F respectively, and 70°F and 40°F in winter, respectively. The rainfall is mainly in July and August. The average annual rainfall is about 628.8 mm, and the annual relative humidity is 60.1%. The highest rainfall record is in July, with an average of 202.1 mm. At the end of cold weather, there are occasional thunderstorms and hailstorms. The relative humidity throughout the year is high. The driest month is October.

The average annual rainfall during the last 30 years period from (1987-2017) works out to be 628.8 mm. Nearly 50% of it received in the form of high intensity showers during the monsoon (July, August, September) and other 40% in winter. The yearly variations are considerable.

The average monthly maximum and minimum temperatures and annual rainfall of last 30 years (1987-2017) taken from meteoblue is presented in **Figure 5-2**.

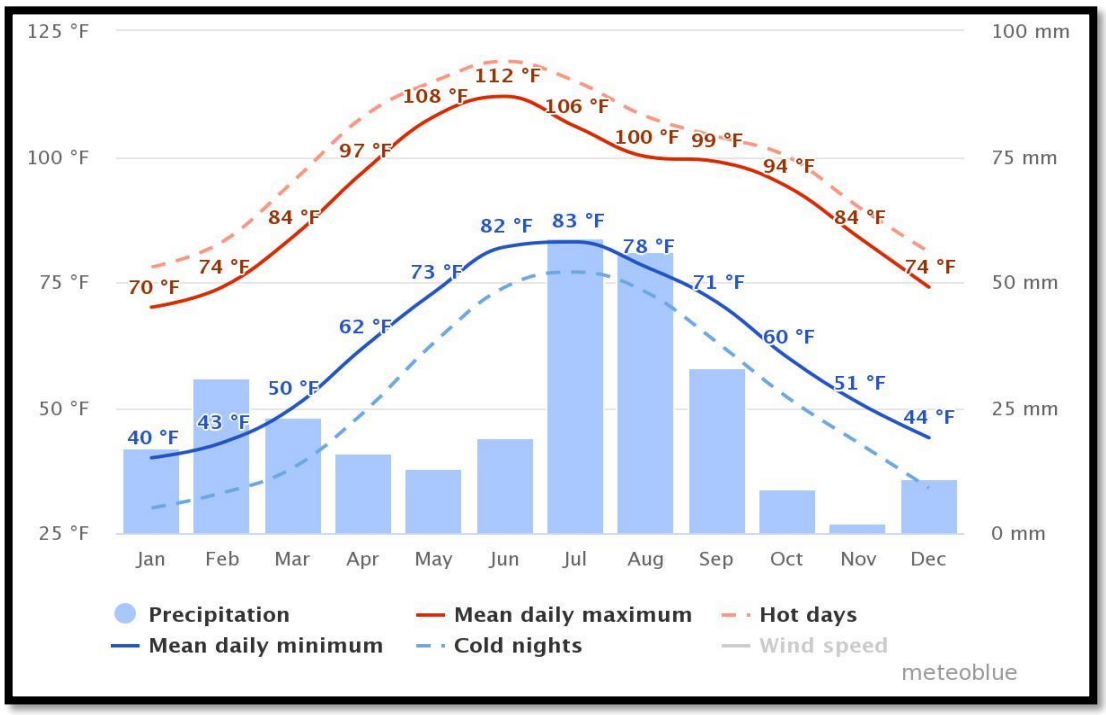
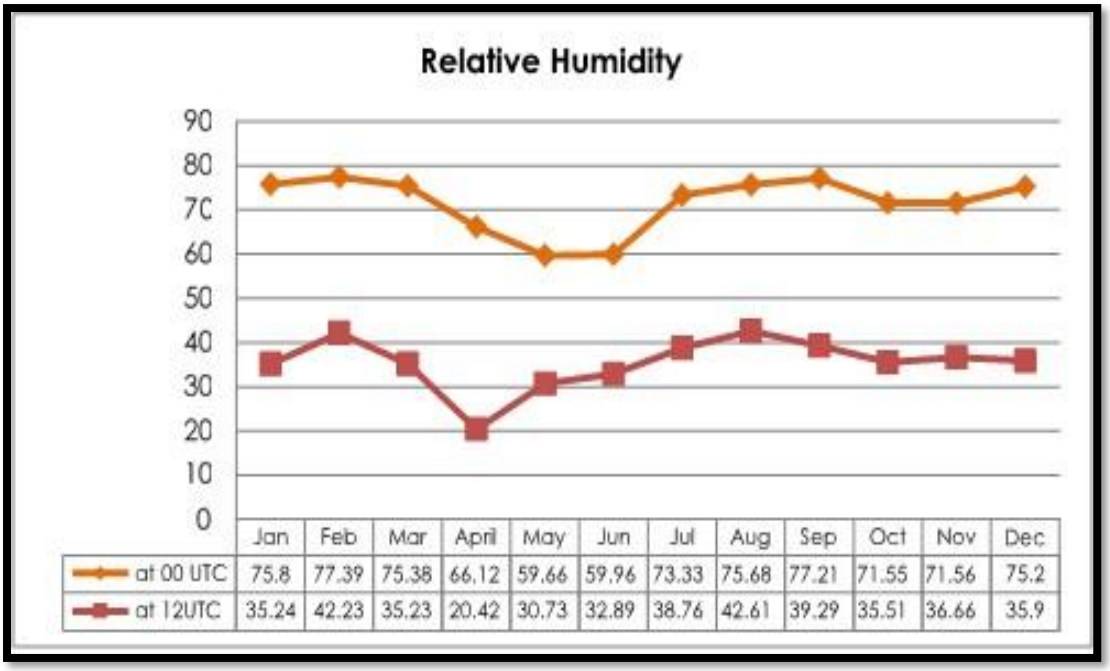


Figure 5-2, Temperature and Rainfall Data (Data Source: Meteoblue)

The most humid period is in month of August with maximum average relative humidity is 77.21 % and minimum average relative humidity 39.29 %. The average relative humidity of Lahore District form last 30 years period from (1987-2017) recorded is shown in **Figure 5-3**.



	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
at 00 UTC	75.8	77.39	75.38	66.12	59.66	59.96	73.33	75.68	77.21	71.55	71.56	75.2
at 12UTC	35.24	42.23	35.23	20.42	30.73	32.89	38.76	42.61	39.29	35.51	36.66	35.9

Figure 5-3, Average Relative Humidity (Data Source: weather online)

The Wind speed usually comes from the northeast to north after the wind has blown strongly and steadily from those quarters for a day or more. In the cold weather the rain clouds come mostly from the north or west. The wind rose for Lahore shows how many hours per year the wind blows from the indicated direction, **Figure** 5-4.

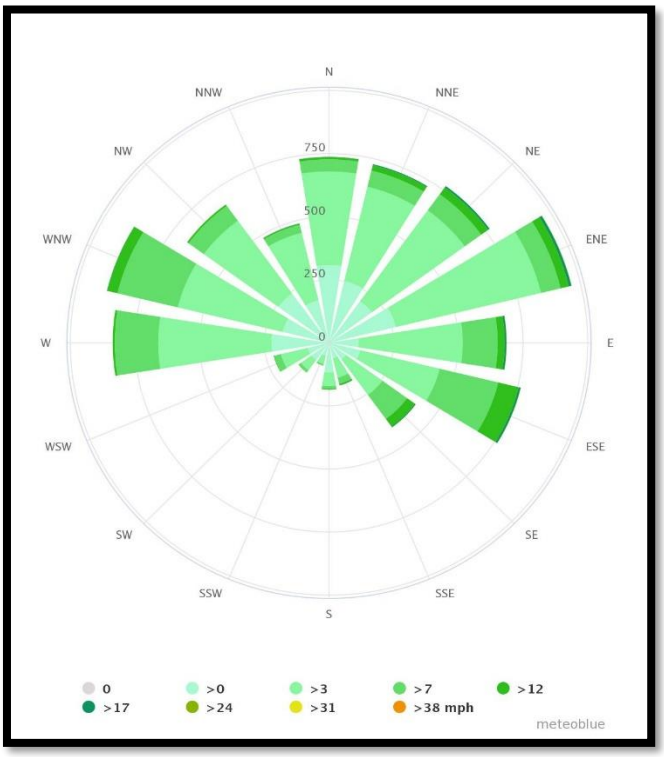


Figure 5-4, Wind Rose for Lahore District (Data Source: Meteoblue)

5.2.6 Surface Water

There are no rivers or lakes present near project corridor. The nearest water body is Sue Asal Drain located 3km away from the project site.

5.3 ECOLOGICAL RESOURCES

In order to develop the ecological baseline of the site, the diverse ecological surveys were conducted given as under-:

5.3.1 Flora

Flora consisted of both ornamental and natural indigenous plants. Land is very much plain. The existing flora consists of trees like Keekar (Vachellia nilotica), Tahli (Erythrophleum Suaveolens), Phulai (Senegalia Modesta) etc.

5.3.2 Fauna

A short description of fauna in project site is discussed below:

A) Mammals

The wild and common or domesticated mammals found in the area are dogs, cats, house rats, bats, horses, donkeys, mules, buffaloes, cows, goats, sheep etc.

B) Reptiles

The most common reptiles in the area include snakes, lizards, Varanis (Goh/large lizard), spiders and scorpions, etc.

C) Amphibians

Amphibians found in the tract include common frog (Rana tigrina) and common toad (Bufobufo)

D) Birds

The birds identified in the area include House sparrow (Passer domesticus), House crow (Corvussplendens), Mynah (AcredotheresTristis), Cheel, Fakhta, Bagle, in addition to these birds Bulbul (Pycnontuscafer), parrots (Psittaculakrameri), pigeons (Columbia livia), murghabi, surkhab, ullu, etc. are also seen in the area.

5.4 SOCIOECONOMIC ENVIRONMENT

Socioeconomic environment of district Lahore has been studied through secondary sources and a brief introduction has been given below:

5.4.1 Demographic Characteristics of the Project Area

The total population of Lahore District has crossed 11.13 million.

5.4.2 Religion

The population of the district is predominantly Muslims i.e., approx. 95 percent, other minorities like Christians, Sikhs and Hindus etc. are approx. 5 percent.

5.4.3 Education

Lahore is known as Pakistan's education capital, with more colleges and universities than any other city in the country. Lahore is Pakistan's largest producer of professionals in the fields of science, technology, IT, engineering, medicine, nuclear sciences, pharmacology, telecommunication, biotechnology and microelectronics. Most of the reputable universities are public, but in recent years there has also been an upsurge in the number of private universities. The current literacy rate of Lahore is 74%. Lahore hosts some of Pakistan's oldest educational institutes: Government College Lahore (now Government College University), established in 1864; Forman Christian College, a chartered university established in 1864; University of the Punjab, established in 1882; Kinnaird College, established in 1913; and University of Engineering and Technology, Lahore (UET Lahore), established in 1921. UET is also Pakistan's oldest technical degree-awarding institute and its first university in the field of engineering and technology.

Lahore's institutes in the fields of computer science, IT, and engineering include the National University of Computer and Emerging Sciences (NUCES or FAST-NU) and Punjab University College of Information Technology. Notable architecture schools include Beaconhouse National University, COMSATS Institute of Information Technology, University of South Asia, National College of Arts and University of Engineering and Technology, Lahore. Notable business schools include the Lahore University of Management Sciences (LUMS), Lahore School of Economics, Forman Christian College, and University of Management and Technology. University of Education, established in 2002, is Pakistan's first specialized university in the field of education.

5.4.4 Health Facilities

Ample medical and health facilities are available in the Lahore Metropolitan Corporation area and its suburbs. Shaukat Khanam Hospital is the latest addition in the medical care facilities in Lahore for the most dangerous disease in the country. i.e., Cancer. There are also other hospitals of voluntary organizations which provide health cover to the general public. King Zaid Bin Sultan Hospital is also a very advanced addition in the medical care for Lahore. Among the prominent hospitals are General Hospital, Lady Willington Hospital, Mayo Hospital, Fatima Jinnah Hospital, The Children Hospital, Services Hospital, and Ganga Ram Hospital etc. Besides, a number of private medical practitioners, Hakims and homeopathic doctors are also practicing

in the city. Some famous Health facilities located in the Project vicinity are Clapp Hospital and Lahore General Hospital.

5.4.5 Quality of Life Values

All classes of people are present in Lahore City; People lead lives according to their income.

5.4.6 Civic Amenities

Civic amenities like potable drinking water, dispensary and rest area are available near the project site.

5.4.7 Games

Cricket, Football, badminton, Hockey, Volleyball, Kabaddi and Kushti are major sports of Lahore District.

5.4.8 Welfare of Employees

Management of project is mindful of the fact that the satisfied employees will deliver better output.

5.4.9 Aesthetic Values:

Like the general trend among the citizens of area, most of the people have low awareness about environment. Even then, some people take cleanliness and neatness of the environment lightly. Some people throw municipal solid wastes (MSWs) on the streets. Sense of personal responsibility to keep the environment clean as good citizens is even now lacking among a few people.

5.5 LAB REPORTS OF ENVIRONMENTAL ANALYSIS

5.5.1 Ground Water

For the purpose of checking the quality of groundwater, one sample is taken from motor pump present on the site and did analysis and compared results with Punjab Environmental Quality Standards.

Groundwater samples were tested for 30 different selected parameters as per PEQS.

Based on the laboratory test results, it was found that all the parameters of Groundwater samples are within the permissible limits. The details of the results have been shown in Table 5-1.

The detailed Ground water analysis is attached as Annexure H.

Table 5-1, Ground Water Quality of Proposed Project

Ground Water Analysis Results					
Parameter	Analysis Method	PEQS	Result	MU (CL95%)	Remarks
Lab Analysis					
Color*	SMWW 2120 C	≤ 15 TCU	0	N.A.	Optimal
Taste*	SMWW 2160 C	Non-Objectionable	Non-Objectionable	N.A.	Optimal
Odor*	SMWW 2150 B	Non-Objectionable	Non-Objectionable	N.A.	Optimal
Turbidity*	SMWW 2130 B	< 5 NTU	0	N.A.	Optimal
Total Hardness (as $CaCO_3$) **	SMWW 2340 C	< 500 mg/L	116	± 2.07	Optimal
Total Dissolved Solids (TDS)**	SMWW 2540 C	< 1000 mg/L	388	± 7.21	Optimal
pH**	SMWW 4500 H^+ B	6.5- 8.5	7.57	± 0.049	Optimal
Aluminum (Al)	SMWW 3111 B	≤ 0.2 mg/L	<0.005	N.A.	Optimal
Antimony (Sb)	SMWW 3114 B	≤ 0.005 mg/L	<0.005	N.A.	Optimal
Arsenic (As)	SMWW 3114 B	≤ 0.05 mg/L	<0.005	N.A.	Optimal
Barium (Ba)	SMWW 3113 B	0.7 mg/L	0.0035	N.A.	Optimal
Boron (B)	SMWW 3113 B	0.3 mg/l	<0.02	N.A.	Optimal
Cadmium (Cd)	SMWW 3113 B	0.01 mg/L	<0.006	N.A.	Optimal
Chloride (Cl^-) **	SMWW 4500 Cl^- B	< 250 mg/L	11	± 1.26	Optimal
Chromium (Cr)	SMWW 3113 B	≤ 0.05 mg/L	<0.004	N.A.	Optimal
Copper (Cu)	SMWW 3111 B	2.0 mg/L	0.165	N.A.	Optimal
Cyanide (CN^-)*	SMWW 4500 CN^- F	≤ 0.05 mg/L	0	N.A.	Optimal
Fluoride (F^-)**	SMWW 4500 F^- D	≤ 1.5 mg/L	1.84	± 0.61	Optimal
Lead (Pb)	SMWW 3114 B	≤ 0.05 mg/L	<0.005	N.A.	Optimal
Manganese (Mn)	SMWW 3113 B	≤ 0.5 mg/l	0.015	N.A.	Optimal
Mercury (Hg)	SMWW 3114 B	≤ 0.001 mg/L	<0.001	N.A.	Optimal
Nickel (Ni)	SMWW 3113 B	≤0.02 mg/L	<0.02	N.A.	Optimal
Nitrate (NO_3^-) *	SMWW 4500 NO_3^- B	≤ 50 mg/L	0	N.A.	Optimal
Nitrite (NO_2^-) *	SMWW 4500 NO_2^- B	≤ 3.0 mg/L	0.33	N.A.	Optimal
Selenium (Se)	SMWW 3114 B	0.01 mg/L	<0.01	N.A.	Optimal
Residual Chlorine (Cl_2) *	SMWW 4500 Cl^- B	0.5 mg/L	0	N.A.	Optimal
Phenolic Compounds (as Phenols) *	SMWW 5530 D	NGVS	0	N.A.	Optimal
Zinc (Zn)	SMWW 3113 B	5.0 mg/L	0.032	N.A.	Optimal
Microbiological Analysis					
Total Coliforms*	SMWW 9222 B	0 CFU/ 100 mL	0	N.A.	Optimal
Fecal Coliforms *	SMWW 9222 D	0 CFU/ 100 mL	0	N.A.	Optimal

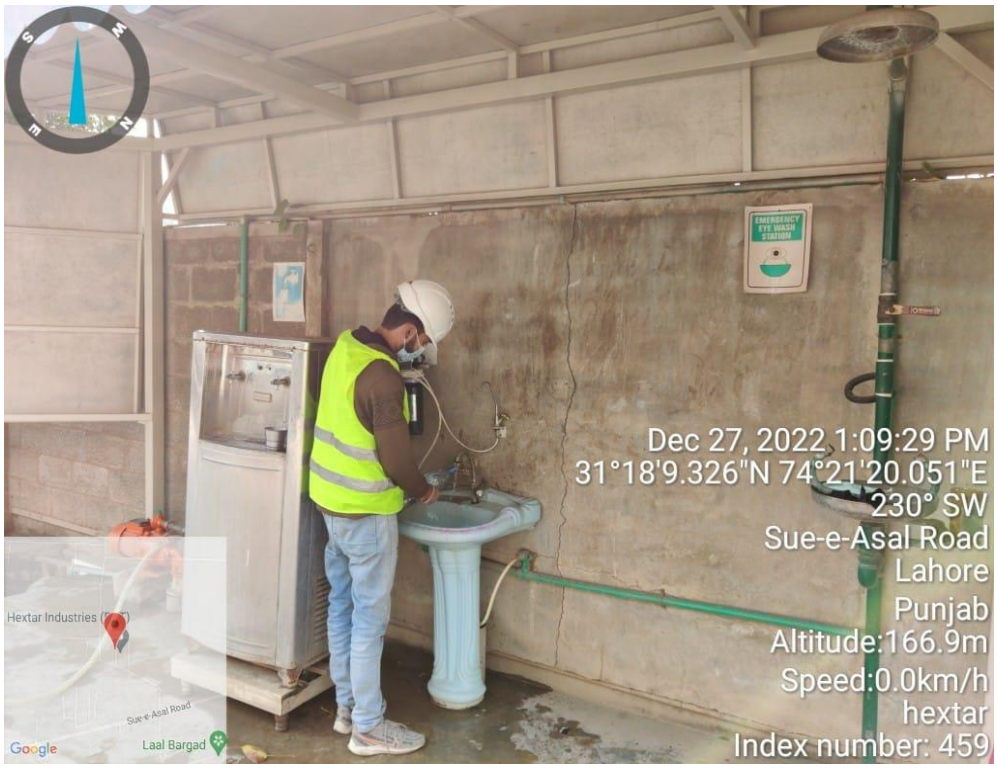


Figure 5-5, Ground water sampling

5.5.2 Ambient Air Quality

At present, major sources of air pollution are mobile sources and nearby industries. Ambient Air Quality was monitored at the location of Project site for the period of 24 hour.

The monitored parameters included Carbon mono-oxide (CO), Nitrogen dioxide (NO_2), Sulphur dioxide (SO_2), Particulate Matter (PM_{10}) and Particulate Matter ($PM_{2.5}$). The monitoring was carried out for a period of 24 hours with an interval of 1 hours between consecutive readings at each monitoring point. The detail Environmental Monitoring Report is attached as Annexure H while the 24 hours average results are presented below-:

Table 5-2, Ambient Air Monitoring Results

Sr. No.	Time	CO (mg/m³)	NO (µg/m³)	NO_2 (µg/m³)	NO_x (µg/m³)	SO_2 (µg/m³)
1	09:00	1.2	17.9	23.7	41.6	38.0
2	10:00	1.3	18.1	23.9	42.0	38.3
3	11:00	1.6	20.0	25.6	45.5	41.3
4	12:00	1.6	20.6	25.4	46.0	40.8
5	13:00	1.8	22.3	26.7	49.0	44.4
6	14:00	1.6	19.4	25.2	44.5	41.5
7	15:00	1.5	21.8	23.9	45.6	39.0
8	16:00	1.3	19.8	25.9	45.6	41.6

Sr. No.	Time	CO (mg/m³)	NO (µg/m³)	NO_2 (µg/m³)	NO_x (µg/m³)	SO_2 (µg/m³)
9	17:00	1.3	19.9	23.9	43.7	38.5
10	18:00	1.1	18.5	25.5	44.0	41.0
11	19:00	1.0	17.0	24.2	41.1	38.2
12	20:00	0.5	17.5	21.9	39.3	37.5
13	21:00	1.1	15.6	21.5	37.0	35.7
14	22:00	1.1	16.4	21.0	37.3	36.1
15	23:00	0.9	13.7	19.9	33.6	33.7
16	00:00	0.9	14.3	19.9	34.1	30.0
17	01:00	0.8	16.5	18.4	34.9	30.3
18	02:00	1.0	14.5	18.1	32.5	30.5
19	03:00	1.0	15.8	16.4	32.2	28.2
20	04:00	1.1	17.0	16.1	33.1	25.4
21	05:00	1.0	17.5	17.4	34.9	27.6
22	06:00	1.1	15.7	17.6	33.2	30.0
23	07:00	1.4	17.3	19.6	36.9	33.1
24	08:00	1.3	19.0	22.3	41.2	30.9
Average Concentration		**1.2**	**17.7**	**21.8**	**39.5**	**35.5**

Table 5-3, Ambient Air Monitoring Results

Parameters	Units	Monitoring Duration	LDL	Average Obtained Concentration	PEQS	Remarks
Nitrogen Dioxide (NO_2) *	µg/m³	08Hours	1.00	21.8	80.0	Optimal
Nitrogen Oxide (NO) *	µg/m³	08Hours	1.00	17.7	40.0	Optimal
NO_x*	µg/m³	08Hours	1.00	39.5	120.0	Optimal
Sulphur Dioxide (SO_2) *	µg/m³	08Hours	1.00	35.5	120.0	Optimal
Carbon Monoxide (CO) *	mg/m³	08Hours	0.01	1.2	05.0	Optimal
Particulate Matter (PM_{10}) *	µg/m³	08Hours	1.00	83.4	150	Optimal
Particulate Matter ($PM_{2.5}$) *	µg/m³	08Hours	1.00	**45.5**	35	High
Total Particulate Matter (TSP)	µg/m³	08Hours	1.00	210.34	500	Optimal

The above results show that the 24 hours average of $PM_{2.5}$ is high above the PEQS.

Figure 5-6, Ambient Air Monitoring

5.5.3 Noise Levels

Major sources of noise generation are operations due to vehicular traffic & neighbouring industrial activities. Noise levels were monitored for the period of 24 hour at proposed project location.

Table 5-4, Noise Level Monitoring Results

Sr. No.	Time	Noise dB(A)*		PEQS
1	09:00	55	Day Time	75
2	10:00	56		
3	11:00	57		
4	12:00	56		
5	13:00	59		
6	14:00	58		
7	15:00	54		
8	16:00	56		
9	17:00	54		
10	18:00	51		
11	19:00	53		
12	20:00	54		
13	21:00	53		
14	22:00	51	Night Time	65
15	23:00	54		
16	00:00	50		
17	01:00	55		
18	02:00	50		

Sr. No.	Time	Noise dB(A)*		PEQS
19	03:00	52		
20	04:00	53		
21	05:00	56		
22	06:00	57		
23	07:00	59	Day Time	75
24	08:00	58		

5.6 TESTING TEAM

All laboratory tests for water, noise and ambient air were conducted by AES (Asian Environmental Services Private Limited) which is certified laboratory form EPA-Punjab. Expert team for laboratory is following.

Table 5-5, Testing Team

1.	Sajjad Hussain	Chief Chemist	M.phil. Chemistry, GCU Lahore
2.	Ashir Shahbaz	Chemist	BS. Chemistry, University of The Punjab
3.	Musharaf Jabeen	Chemist	BS. Chemistry, University of The Punjab
4.	Haider Khan	Microbiologist	BS. Microbiology , University of Lahore
5.	Sadia Sarwar	Lab Analyst	BS. Environmental Science, GCU

5.7 SITE SUITABILITY

The site is not located in any prohibited and environmentally sensitive area. It is located in an industrial zone of Ferozepur Road with several other industries located around project site.

SECTION - 6: POTENTIAL ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

6.1 GENERAL

This chapter identifies the potential impacts related with Preconstruction, construction and operation phases of the Project on the physical, ecological and socio-economic domains of the environment. Accordingly, mitigation measures have been proposed to mitigate the negative impacts and to enhance the positive impacts.

6.2 APPROACHES AND METHODOLOGY

During the preparation for the project construction phase the future contractors must be notified and prepared to co-operate with the executing agency, project management, supervising consultants and local population in the mitigation of impacts. Furthermore, the contractor must document the implement the EMP in full and be ready to engage trained environmental management staff to audit the effectiveness and review mitigation measures as the project proceeds. The effective implementation of the EMP will be prepared and must be audited and this will be considered as the most important part of planning. In this regard the proponent must fulfil the requirements of the law and guidance prepared by EPA on the environmental aspects of power projects and the recommendations already made for projects in this EIA and under EIA/IEE regulation and Punjab Environmental Protection Act (2012).

For impact identification, various EIA methodologies are available including the checklists, interaction matrices, networks and overlays. Among these four methods, following three are used in EIA of Hextar Industries Pvt. Ltd.

- Project Interaction Matrix
- Checklists
- Overlays

Interaction matrix is a two-dimensional matrix wherein the project actions are placed along one axis (i.e. along y-axis) and on the other axis there are different environmental parameters likely to be affected by the proposed project actions grouped into categories i.e. Physical, Ecological & Socio-economic Environment. Interaction matrix is used in this project due to the following reasons:

- It provides cause-effect relationship between the project actions and resulting consequences impacts.
- It provides nature (+ve or –ve) and weighting of different impacts.
- It provides cumulative impacts of a project.

Matrix grouped project actions into temporal phases. For the impact

assessment, project interaction matrix is used by dividing the project action into different phases (Preconstruction, construction and operation). The environmental impacts are divided into three main categories including physical, ecological and socio-economic domains. The environmental impacts of the project actions are identified and weighed into the following categories:

+3 = Extremely Beneficial

+2 = Potentially Positive

+1 = Slightly Positive

0 = Insignificant

-1 = Slightly Negative

-2 = Potentially Negative

-3 = Extremely Negative

The assignment of significance is based on the previous knowledge and professional judgment of EIA team experts. It may be noted that the environmental parameters, which are not related to the implementation of the projects, have not been considered in the matrix.

6.2.1 Checklist

The assignment of significance is based on the previous knowledge and professional judgment of EIA team experts. The project Checklist has been developed for "without" and "with mitigation". It may be noted that the environmental parameters, which are not related to the implementation of the projects, have not been considered in the matrix.

6.2.2 Overlays

In order to identify spatial based impacts, overlays were used. An overlay is based on a set of transparent maps, each of which represents the spatial distribution of an environmental characteristic (for example, susceptibility to erosion). Information for an array of variables is collected for the standard geographical units within the study area, and recorded on a series of maps, typically one for each variable. These maps are overlaid to produce a composite. The resulting composite maps characterize the area's physical, social, ecological, land use and other relevant characteristics, relative to the location of the proposed development.

6.3 CHARACTERISTICS OF IMPACTS

The predicted impacts have been characterized; various aspects of the impact characterized include:

- Nature (direct/indirect)

- Duration of impact (Short term, medium term, Long term)
- Geological extend (local, regional)
- Timing (Project phase)
- Reversibility of impact (Reversible/Irreversible)
- Likelihood of the impact (certain, likely, unlikely, rare)
- Impact consequence severity (major, moderate, minor)
- Significance of impact (High, medium, low)

The above aspects of environmental characterization are defined in **Table** 6-1.

Table 6-1, Impact Characterization

Nature	**Direct:** The environmental parameter is directly changed by the project. **Indirect:** The environmental parameter changes as a result of change in another parameter
Duration of Impacts	**Short-term:** lasting only for the duration of the project such as noise from the construction activities. **Medium-term:** Lasting for a period of few months to a year after the project before naturally reverting to the original condition such as loss of vegetation due to clearing of campsite, contamination of soil or water by fuels or oil. **Long-term:** lasting for a period much greater than medium term impact before naturally reverting to the original condition such as loss of soil due to soil erosion.
Geographical Extent	Local, regional (spatial dimension)
Timing	Construction and Operation
Reversibility of Impact	**Reversible:** when a receptor resumes its pre-project condition. **Irreversible:** when a receptor does not or cannot resume its pre-project condition.
Likelihood of the Impact	**Almost Certain:** Impact expected to occur under most circumstances. **Likely:** Impact will probably occur under most circumstances. **Possibly:** Impact may possibly occur at some time. **Unlikely:** Impact could occur at some time. **Rare:** Impact may occur but only under exceptional circumstances.
Impact Consequences severity	**Major:** When an activity causes irreversible damage to a unique environmental feature; causes a decline in abundance or change in distribution over more than one generation of an entire population of species of flora and fauna: has long term effects (period of years) on socioeconomic activities of significance on regional level.

	Moderate: When an activity causes long-term (period of years), reversible damage to a unique environmental feature; causes reversible damage or change in abundance or distribution over one generation of a population of flora or fauna: have short-term effects (period of years) on socioeconomic activities of significance on regional level. Minor: When an activity causes short-term (period of a few months), reversible damage to a unique environmental feature; slight reversible damage to a few species of flora or fauna within a population over a short period; has short-term (period of months) effects on socioeconomic activities of local significance. **Negligible:** when no measurable damage to physical, socioeconomic, or biological environment above the existing level of impact occurs.
Significance of Impact	Categorized as High, Medium, Low Based on the consequence, likelihood, reversibility, geographical extent, and duration: level of public concern: and conformance with legislative of statutory requirements.

The impact characterization due to Design, Location, Construction and operational phase is given in their respective sections.

6.4 ENVIRONMENTAL IMPACTS AND THEIR MITIGATION DURING PRE-CONSTRUCTION PHASE

6.4.1 Environmental Impacts Regarding Project Location

As already discussed in the location alternative that the current site is already owned by Hextar Industries Pvt Ltd. (Land Ownership Document are attached as Annexure-F) and this location is best suitable with reference to studied dimensions of drainage and availability of vacant land.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Medium term
  - **Geo Extent:** Local
  - **Reversibility:** Reversible
  - **Likelihood:** Almost Certain
  - **Consequence:** Moderate
  - **Impact significance:** Low

Mitigation

No mitigation is required as there is no land acquisition for the project.

6.5 ENVIRONMENTAL IMPACT AND THEIR MITIGATION DURING CONSTRUCTION PHASE

6.5.1 Physical Impacts

A) Soil contamination

- Soil Construction activities such as excavation, filling and disposal of materials (both solid and liquid) will affect the existing soil conditions in the Project Site and in its nearby surroundings. Spillage from the generator or from moving vehicle will cause contamination of soil at construction sites.
- Construction Camp site will generate about 0.5 kg/person/day solid wastes from site camps and construction debris from construction activities. Although quantity of waste is much less, inappropriate disposal methods will have a negative impact on the physical environment of the project area.
- During the construction stage of the project, minimal quantity of waste materials, chemicals, fuel and lubricants will be used apart from the generation of solid waste and liquid waste from the construction camps. Fuels and chemicals will be stored at the site for their immediate use, which will contaminate the soil.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Reversible
  - **Likelihood:** Likely
  - **Consequence:** Minor
  - **Impact significance:** Low

Mitigation

Good engineering practices will help in controlling soil erosion at construction sites. Following measures will be adopted as per site conditions:

- Soil contamination can be curtailed by reducing the oil spill at project construction areas by well maintaining the construction vehicles as well as generators.
- The Contractor is required to impart proper training to his workforce in the handling and proper disposal of solid waste.
- Proper drainage facility will be provided to avoid the water accumulation, which will minimize the soil contamination.
- Ground shall be levelled to avoid slopes.

- Proper solid waste management plan should be developed by the Contractor and implemented to avoid the litter and any other waste problems.

B) Contamination of Surface and Groundwater Resources

- There is no surface water body in the vicinity of the project, the nearest water body is Sue Asal Drain Located 3km away from project site. Hence its quality might not be affected due construction works.
- Due to the construction activities i.e. drilling, concreting, excavation and dumping of soil, chemicals, oil, lubricants, detergents etc. ground water quality might get deteriorated.
- Sewage is generated from the construction camps.

- **Impact Characteristics (ground water):**
  - **Nature:** Direct
  - **Duration:** Medium term
  - **Geo Extent:** regional
  - **Reversibility:** Irreversible
  - **Likelihood:** Possibly
  - **Consequence:** Moderate
  - **Impact significance:** medium

Mitigation Measures

Sewage from construction camp will be disposed off using septic tank which has been designed properly keeping in view the following parameters:

- Soil stratigraphy at site
- Depth of groundwater table
- Discharge of sewage from construction camp

The septic tank has been designed by the Design Consultant according to the relevant standards. The example of the septic tank is shown in **Figure 6-1**.

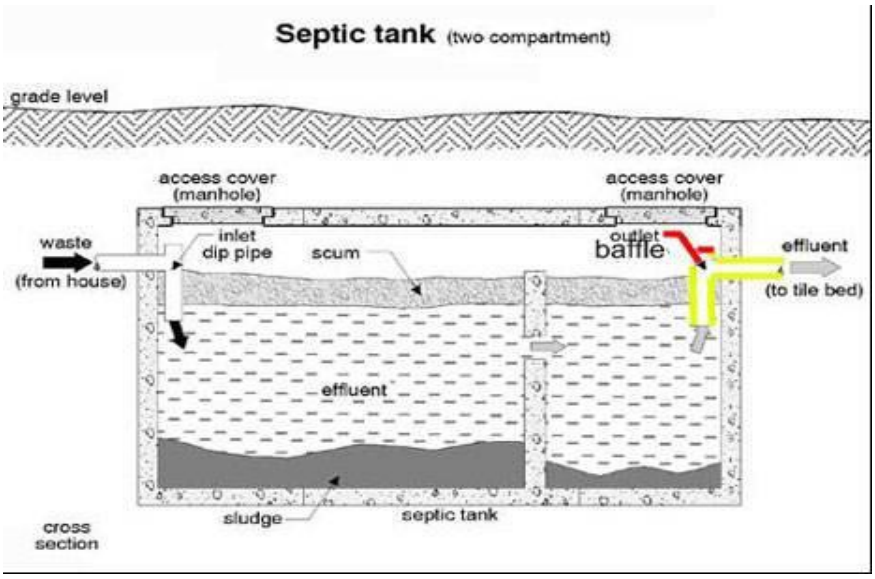


Figure 6-1, Septic tank

- The Contractor should instruct its staff not to throw any of the waste and the other scarified/scrapped materials directly into the river or canal passing from the project area in order to avoid contamination.
- Construction camps should be established in areas with adequate natural drainage channels in order to facilitate flow of the effluents.
- Avoid accidental spills of oils and lubricants through good practice. Prepare and implement Emergency Response Procedures in case of any spill hazard.

C) Impact on Ambient air quality

Due to the construction activities like excavation, clearing, levelling and compaction with the use of machinery like batching plants, excavators, dump truck and other transport vehicles etc. Most of these are using diesel engines that generate noise and exhaust emissions. The possibility of exhaust emissions increases when old vehicles/plants are utilized for the execution purposes. Generally, the above activity is generating particulate- matter (PM10), smoke, dust, CO and NOx in the ambient air, which is deteriorating the air quality and resulting in impacts on human health, fauna and flora. The movement of heavy machinery and vehicles on the dirt tracks is also causing dust emissions. Particles are lifted and dropped from the rolling wheels, and the road surface is exposed to strong air currents in turbulent shear with the surface.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Reversible

- **Likelihood:** Likely
- **Consequence:** Minor
- **Impact significance:** Medium

Mitigation Measures of Impacts on Ambient Air Quality

- Tuning of vehicles should be made mandatory to reduce the emissions of NO_x, SO_x, CO and PM_{10}.
- Equipment and vehicles powered with diesel should be well maintained to minimize particulate emissions.
- Haul-trucks carrying, earth, sand, aggregate and other materials should be kept covered during transportation of materials and during storage at site, with tarpaulin.
- The fugitive dust emission will not be a problem because the roads are paved but for the precautionary measure sprinkling of water-by-water trucks will be done.

D) Impact on Ambient Noise Levels & Vibration

During the implementation of the project, equipment and construction machinery will be utilized for construction. The equipment would include excavators, concrete mixer, trucks and other machinery and vehicles. The operation and movement of such equipment will increase the noise and vibration in the Project Area and Neighbourhood residential may be disturbed by the noisy activities. The impact will be significant when compared to the without project situation.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Reversible
  - **Likelihood:** Likely
  - **Consequence:** Minor
  - **Impact significance:** Medium

Mitigation Measures

- For the construction machinery generating noise level in excess of that prescribed in PEQS and WHO limits,
- Contractor will make arrangements to bring the noise level within applicable limits (including proper tuning of vehicles and mufflers/silencers).

- Movements of the trucks and other construction machinery causing high noise levels must be restricted at night time to avoid disturbance to the nearby locality.
- Truck drivers should be instructed not to play loud music especially night and stop use of horn.

E) Disposal of Construction Debris & Garbage

During construction phase of the Project, large quantity of construction waste will produce, the disposal of which, if not managed properly could have negative impacts on the site and surrounding areas. Clearing of shrubs and grass could pose a fire hazard and affect air quality if burned on location. Construction materials including concrete waste, wood, steel, packaging plastics etc. could be dispersed that may result in the blockage of drainage channels if not disposed of at approved disposal sites.

- **Impact Characteristics:**
  - **Nature:** Direct and Indirect
  - **Duration:** Medium and Short term
  - **Geo Extent:** Regional
  - **Reversibility:** Irreversible
  - **Likelihood:** Likely
  - **Consequence:** Moderate
  - **Impact significance:** Medium

Mitigations

- A site waste management plan should be made the responsibility of the construction contractor to provide for the designation of appropriate waste storage area on the site and a schedule for the timely collection and removal of construction debris to an approved dump site.
- The construction waste will be disposed on approved landfill site from Punjab-EPA
- The organic waste produced during site clearing should be mechanically mulched and composted at the site and used for landscaping.
- Arrangements should be made for regular garbage collection and removal of sewage from the construction site.

6.5.2 Ecological Environment

A) Impact on Flora and Fauna

There are no trees present at the proposed site of plant. Only few shrubs are present on site. The is no endangered or sensitive faunal species resent on

site, only common and domestic fauna is present that must be protected during construction works

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Reversible
  - **Likelihood:** Likely
  - **Consequence:** Minor
  - **Impact significance:** Low

Mitigation

- The designated green area will be vegetated and native vegetation present on-site will be preserved
- Space passage given to fauna during construction works
- Biodiversity at the site will be maintained by transplanting or culturing endangered or threatened plants such as Sheesham which is under-attack in Asia will be planted at site.

6.5.3 Socio Economic environment

A) Impact on Socio Economy

In project area, no significant changes are envisaged in the traditional life style and occupation of the local people in residing in the nearby communities. The local people are rather benefited due to the provision of job opportunities. No impact is envisaged due to the influx of the workers as the local will be preferred and hired for working.

Social issues may arise which will cause minor negative impact on the social life style of the people. Moreover, health and safety related issues may arise during the construction activities. These impacts are in-significant can be further reduced significantly by adopting best management practices.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Reversible
  - **Likelihood:** Likely
  - **Consequence:** Minor
  - **Impact significance:** Medium

Mitigation Measures

- Good relations with the 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 the workers should be of good repute
- First aid kits having all the necessary first aid stuff will be available at the 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 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 the sensitivity towards the local customs and traditions

6.6 ENVIRONMENTAL IMPACT AND THEIR MITIGATION DURING OPERATIONAL PHASE

6.6.1 Physical Impacts

A) Soil contamination

During operation phase chemical are used for formulation of Pesticides and fertilizer; and fuels used for generator are stored on site. Accidental spillage and leakages may cause soil contamination. Apart from that contaminated solid waste such as empty bags and expired products if not disposed properly can cause soil contamination.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Reversible
  - **Likelihood:** Likely
  - **Consequence:** Minor
  - **Impact significance:** Low

Mitigation

Following measures will be adopted as per site conditions:

- Proper training to worker about chemical handling, storage and transportation.
- Proper drainage facility will be provided to avoid the water accumulation, which will minimize the soil contamination.
- Floor tiling to be done at the entire project area to avoid chemicals leaching into the soil in case of spillage and leakages.
- Hazardous solid waste to be managed by AT Waste Management Company

B) Solid Waste

About 1000kg/month hazardous solid waste (including liquid waste, Empty bags, expired products) is anticipated to be produced during operation waste.

The quantification of domestic waste will 0.45 kg per person will day, the estimated quantity will be 12.5 kg/per day.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Irreversible
  - **Likelihood:** Likely
  - **Consequence:** Major
  - **Impact significance:** medium

Mitigation Measures

The solid waste management plan is developed given as under-: .

- The large waste bins will be placed at suitable places at all visitor areas.
- The waste will be collected from industry and from the bins placed by the workers of waste management team.
- Packaging waste and Domestic waste will be produced that will be disposed through LWMC.
- Waste Management team will transfer the waste to designated landfill site by LWMC
- Agreement has been made with AT waste management for the scientific disposal of solid waste (agreement attached as Annexure J).

C) Groundwater

During the operational phase the WASA supply line water will be used in which 1500L/ batch will be used during process and 4750 L/day of water will

be used for domestic purposes. Water is also consumed during machinery washing.

WASA supply or direct groundwater usage will ultimately impact on level of ground water resource which may reduce with the passage of time

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Irreversible
  - **Likelihood:** Likely
  - **Consequence:** Major
  - **Impact significance:** medium

Mitigation Measure

In order to reduce the impact on ground water resource following measures will be adopted.

- There will be proper lining and engineered structure to avoid the leakage.
- Rainwater harvesting should be done on the roof top of the building. It is a simple technique of catching rainwater and storing it in underground aquifers. Rainwater harvesting helps increase the water table, improve the quantity of groundwater and reduce tube well pumping costs.
- The water conservation will be adopted in washrooms that will be installed water saving gadgets and eco-devices.
- Promote recycling of water were possible especially during machinery washing

D) Waste water

80% of water consumed for domestic purposes will be wastewater. Wastewater may also be released during machinery washing.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Irreversible
  - **Likelihood:** Likely
  - **Consequence:** Major
  - **Impact significance:** medium

Mitigation Measure

Wastewater that will be treated through septic tanks and disposed of through

AT Waste Management Company (agreement attached as Annexure J).

Water used for machinery washing will be recycled.

E) Occupational Safety

Following health and safety impacts arise during the operational phase of the proposed project:

- Spillage and Leakage of Chemicals
- Slips, trips and falls on ground
- Unguarded machinery
- Falling objects
- Hazards associated with the fire and explosion
- Noise and vibration
- Electrical burns and electric shock

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Long term
  - **Geo Extent:** Local
  - **Reversibility:** Irreversible
  - **Likelihood:** Likely
  - **Consequence:** Minor
  - **Impact significance:** Low

Mitigation Measures

To ensure worker's safety during operation phase, following measures should be taken:

- First Aid box should be placed at different location within plant.
- First Aid training should be provided to all supervisors and relevant staff.
- Maintaining equipment in good operation order is of paramount importance in preventing equipment failure.
- Training program for plant operation and maintenance activities should be observed.
- Contact addresses and numbers of local hospitals and other emergency organizations should be available at plant all the time.
- Emergency response plan should be developed to cater different emergency situation as mentioned above.
- Ensure provision of first aid at site in case of any emergency.
- A regular maintenance program should be executed to prevent the clogging of diffuser plates to maintain adequate dissolved oxygen levels

in the aeration tanks, which in turn minimizes the chances for the production of odorous compounds.

- Protective measures and emergency rescue procedures should be followed strictly
- Only authorized persons shall be allowed in the processing and chemical storage areas

F) Fire safety

Outbreak of fire can be major risk at project site due to the presence of flammable chemicals and machinery such as photocopier machines, desktops, servers etc. An incident of fire can take place due to short circuit.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Long term
  - **Geo Extent:** Local
  - **Reversibility:** Irreversible
  - **Likelihood:** Likely
  - **Consequence:** Major
  - **Impact significance:** High

Mitigation

- Special Measure to be taken for the management for flammable chemicals present on site
- Fire safety equipment such as sand buckets, fire pump and fire extinguishers to be placed on each floor.
- Regular electrical inspection to be done to find any faulty wiring
- Fire alarms to be installed at all sensitive sites on each floor.
- The management has developed a comprehensive health, safety and emergency response plan in order to stay proactive in case of any emergency due to fire hazard.
- Fire alarms to be installed at all sensitive sites on each floor.

G) Chemical Hazard

Exposure to chemicals may occur during the handling of chemicals related to formulation of the final products. Avoid unnecessary chemical exposure to the workers who are working in the process area or related to the process. A long term and direct chemical exposure may impact the health of the workers and the risk of the spillage may increase.

- **Impact Characteristics:**
  - **Nature:** Direct

- **Duration:** Long term
- **Geo Extent:** Local
- **Reversibility:** Irreversible
- **Likelihood:** Likely
- **Consequence:** Major
- **Impact significance:** High

Mitigation Measures

- Personal Protective Equipment (PPEs) should be given to workers including protection and impermeable clothing for use during processing and handling chemicals
- Wearing of the PPEs should be regulated strictly by the concerned authority
- Chemical spillage will be avoided by developing proper SOPs for the handling of the chemicals
- Chemicals and final products (Potash of Sulphate and HCL by product) will be stored properly and all precautionary measures will be adopted to eliminate all the hazards and risks associated with the handling and storage of chemicals and final products

H) Noise & Vibration

- During operation phase, noise levels are not expected to exceed current baseline measurements. However, expected noise sources with their impacts are discussed here.
- Noise pollution during operation would be generated by mechanical equipment. Noise and vibration may cause unpleasant hearing impacts on workers associated with operational activities and on nearby communities. However, it is anticipated that during operations noise and vibration from all equipment will be kept within the permissible limits, transient in nature, reversible and not significant.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Irreversible
  - **Likelihood:** Likely
  - **Consequence:** Minor
  - **Impact significance:** Low

Mitigation Measures of Impacts

Effective noise management protocols should be implemented, wherever

applicable, during operational phase of the project. The implementation of following measures further reduces predicted impacts.

- Hextar Industries management will take all required measures to ensure that the noise levels do not exceed the threshold values for occupational noise and remain within the bearable limit of the workers.
- Proper engineering controls should be applied to all noise producing sources.
- Proper maintenance of all mechanical equipment should be carried out to reduce elevated noise produced due to any worn part.
- Generators should be installed in an isolated area.
- Noise monitoring should be carried out on regular basis.
- Site labour working in high noise areas (where noise level exceeds &5 dB (A)), should wear earplugs.

I) Air Quality

It is envisaged that no air emissions will be released from the proposed project activity as the system will be fully closed. Hence, no mitigation measures will be required. However, exhaust emissions might release from generator chimney that might impact the ambient air quality.

Fumes from chemicals used in pesticides and fertilizer may deteriorate the indoor air quality and effect the health of workers

Impact Characteristics:

- **Nature:** Indirect/ Direct
- **Duration:** Short term
- **Geo Extent:** Local
- **Reversibility:** Irreversible
- **Likelihood:** Likely
- **Consequence:** Medium
- **Impact significance:** Medium

Mitigation Measures

- Provide appropriate covering/ ventilation of the fumes/odour sources, wherever possible.
- Use of specific PPEs should be ensured to reduce any respiratory problems due to odour/fumes from chemical formulations.
- All equipment including generators and vehicles used during the project should be properly tuned and maintained in good working condition.
- Regular ambient air quality monitoring
- Regular checks for O & M (operations & maintenance)

6.6.2 Ecological Environment

A) Impact on Flora& Fauna

The physical existence and operations of the plant may generate noise, odour nuisance and fugitive. These issues may scare the birds from nesting around the site.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** Short term
  - **Geo Extent:** Local
  - **Reversibility:** Reversible
  - **Likelihood:** Likely
  - **Consequence:** Minor
  - **Impact significance:** Low

Mitigation

- Tree planting will enhance biodiversity at the site.
- Trees will attract many bird species and other animal species.
- The designated green area will be vegetated and native vegetation present on-site will be preserved

6.6.3 Socio Economic Environment

A) Impact on Socio Economy

In project area, no significant changes are envisaged in the traditional life style and occupation of the local people in residing in the nearby communities. The local people are rather benefited due to the provision of job opportunities. No impact is envisaged due to the influx of the workers as the local will be preferred and hired for working.

Social issues may arise which will cause minor negative impact on the social life style of the people. Moreover, health and safety related issues may arise during the construction activities. These impacts are in-significant can be further reduced significantly by adopting best management practices.

- **Impact Characteristics:**
  - **Nature:** Direct
  - **Duration:** short term
  - **Geo Extent:** Local
  - **Reversibility:** Reversible
  - **Likelihood:** Likely
  - **Consequence:** Minor

- **Impact significance:** Medium

Mitigation Measures

- Good relations with the 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
- In the case of not hiring the locals, Contractor will restrict his permanent staff to mix with the locals to avoid any social problems
- 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 the workers should be of good repute
- First aid kits having all the necessary first aid stuff will be available at the 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 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 the sensitivity towards the local customs and traditions

6.7 POTENTIAL ENVIRONMENTAL ENHANCEMENT MEASURES

In order to enhance environment, the following measures will be adopted:

a. Landscaping around proposed project
b. Air emission control technology will be installed on stacks of industry.
c. Sprinkling of water will be done on dusty roads and tracks.
d. PPEs will be provided during construction & operational activity.
e. Constructional waste and domestic solid waste will be disposed-off or utilized properly.
f. Local people will be informed in advance when work is about to start in an area.
g. Machinery will never be left unattended.
h. Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Transporters engaged for the project would be forced to adhere to the load specifications of the access road. No overloading would be allowed in any case.

i. Safety signs and boards will be placed during construction.

k. Machinery will be kept maintained.

l. Proper SOPs will be followed with proper schedule along with the HSE conditions.

m. Solid waste will be handed over to contractors and agreement is made.

n. Noise will be controlled by adopting proper measures.

o. PPEs will be provided to workers during working.

p. Firefighting equipment and system will be installed.

q. Chemical management plan to be developed and implemented.

r. Safety signs will be placed at all locations where required.

s. Hygienic conditions will be ensured and proper quality will be maintained by quality control testing.

t. First aid facilities will be made available.

SECTION - 7: ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM

The primary objectives of the EMMP are to:

1) Facilitate the implementation of the mitigation measures identified in the EIA.
2) Define the responsibilities of the project proponent.
3) Define a monitoring mechanism and identify monitoring parameters in order to:
    a. Ensure the complete implementation of all mitigation measures.
    b. Ensure the effectiveness of the mitigation measures.
    c. Provide a mechanism for taking timely action in the face of unanticipated environmental situations.
    d. Identify training requirements at various levels.

7.1 INSTITUTIONAL CAPACITY

The overall responsibility for compliance with the environmental management plan rests with the project proponent. He will appoint HSE/ Quality Manager of relevant qualification. HSE/ Quality Manager will act as Environmental Manager and will manage all HSE conditions at the PEQS.

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

Following functionaries will be involved in the implementation of EMP:

- Project Proponent
- HSE Manager
- Safety Supervisor
- Safety Officer

7.2 TRAINING SCHEDULE

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

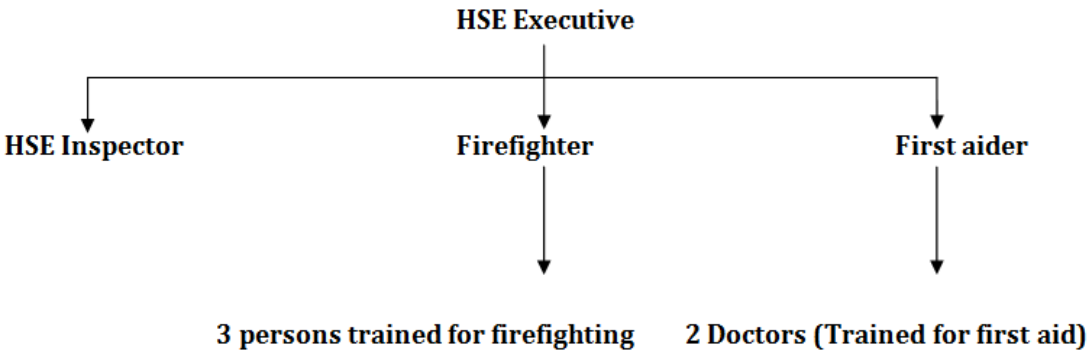


Figure 7-1, Institutional Capacity for the implementation of EMP

Management has an appoint HSE officer to initiation of constructional work at the project site. HSE officer is responsible for conducting the training of the labor, which will be organized either by the management of industry or by the contractor. Following schedules of training will be implemented:

Table 7-1, Training Program

Sr. No.	Description of program	Labor/ Personnel involved	Time/ duration
1.	General HSE Training	Trainers and whole labor	Quarterly for 1 hour
2.	Instrument use/ workplace specific items	Trainers and whole labor	Quarterly for 1 hour
3.	PPEs use and safe work practices at work site.	Trainers and whole labor	Quarterly for 1 hour
4.	Reporting and investigating accidents/ incidents	Trainers and whole labor	Quarterly for 1 hour
5.	Emergency procedures	Trainers and whole labor	Quarterly for 1 hour
6.	Medical and first aid	Trainers and whole labor	Quarterly for 1 hour

In order to raise the level of professional and managerial staff, there is a need to upgrade their knowledge in the related areas. HSE/Quality Manager should play a key role in this respect and arrange the training programs. HSE/Quality Manager will provide training to staff and workers about the best environmental management practices at the construction site and affective implementation of the EMMP. The training modules will include air, noise and water pollution monitoring, social awareness, Environmental Laws, Punjab Environmental Quality Standards (PEQS), Usage of personal protection equipment, and health and safety related issues on the construction site.

The HSE/Quality Manager will train all workers & staff in basic sanitation and health care issues (e.g., how to avoid malaria and transmission of Sexually Transmitted Infections (STI) HIV/AIDS and in general health and safety matters, and on the specific hazards of their work). Training should also consist of basic

hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation.

HSE/Quality Manager will conduct Training on monthly or quarterly basis regarding health & safety, hygiene, firefighting and first aid.

7.2.1 Training of Building Contractor

Training of building contractor & workers will be the part of the TORs regarding the construction of the scheme.

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

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

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

7.3 MATRIX (MMM)

This matrix identifies the environmental impacts of multipurpose project during the construction and operation stages and establishes the linkages between the environmental and social impacts, mitigation strategy and the agencies responsible for execution. The MMM presented in Table 7-2 identifies the following:

- The mitigation measures recommended in EIA.
- The person/organization directly responsible for adhering to or executing the required mitigation measures.
- The person/organization responsible for ensuring and monitoring adherence to the mitigation measures.
- The parameters which will be monitored to ensure compliance with the mitigation measures.
- The timing at which the mitigation or monitoring has to be carried out.

Table 7-2, Mitigation management matrix

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
Construction Phase					
Physical Impacts					
01	Soil Erosion and Contamination due to construction activities	• Good engineering practices should be adopted by Contractors, which will help to control soil erosion at the construction sites. • Soil contamination can be curtailed by reducing the oil spill from generator and other machinery at project construction areas, proper solid waste management. • The Contractor is required to impart proper training to his workforce in the storage and handling of obnoxious materials, like oil, diesel and petrol that can potentially cause soil contamination. • Proper drainage facility will be provided to avoid the water accumulation, which will minimize the soil contamination.	CC	SC and HI	• Equipment maintenance. • Placement of solid waste storage containers at project site. • Collection and disposal by Contractor
02	Surface and Ground Water Contamination during construction activities	• Septic tank and artificial drainage pipe should be developed and attached to natural drainage. • The Contractor should instruct its staff not to throw any of the waste and the other scarified/scrapped materials directly into the river or canal passing from the project area in order to avoid contamination.	CC	SC and HI	• Septic tank • Verify that the camp has constructed on adequate natural drainage.

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
		• Construction camps should be established in areas with adequate natural drainage channels in order to facilitate flow of the effluents. • Avoid accidental spills of oils and lubricants through good practice. Prepare and implement Emergency Response Procedures in case of any spill hazard.			
03	Generation of noise, vibration and exhaust emission due to construction activities. Ambient Air Quality Deterioration due to Construction Activities	• Tuning of vehicles should be made mandatory to reduce the emissions of NOx, SOx, CO and PM10. • Water Sprinkling on roads • Equipment and vehicles should be well maintained to minimize particulate emissions. • Haul-trucks carrying, earth, sand, aggregate and other materials should be kept covered during transportation of materials and during storage at site, with tarpaulin • Use of silencers Mufflers and proper tuning of vehicles to control noise • Movements of the trucks and other construction machinery causing high noise levels must be restricted at night time	CC	SC and HI	• Maintenance of Vehicles • Water Sprinkling • Filled Vehicles covered with tarpaulin
04	Disposal of Construction Debris and Garbage	• A site waste management plan should be made the responsibility of the construction contractor to provide for the designation of appropriate waste storage area on	CC	SC and HI	• SC have to ensure that the site waste management plan is properly implemented

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
		the site and a schedule for the timely collection and removal of construction debris to an approved dump site. • The construction waste will be disposed on approved landfill site from Punjab-EPA • The organic waste produced during site clearing should be mechanically mulched and composted at the site and used for landscaping. • Arrangements should be made for regular garbage collection and removal of sewage from the construction site			
05	Traffic Disturbance due to additional Construction Vehicles	• During the construction phase traffic control measurement will be implemented. All raw materials will be transported to the site at night time due to at night time traffic flow very low in the project area.	CC	SC and HI	• Timings of the construction vehicles
Ecological Environment					
06	Loss and Damage of Natural Vegetation (No Tree will be lost but only shrubs will be)	• A significant amount of open area will be used for the landscaping, so it will enhance the natural features of the area.	CC	SC and HI	• SC to verify that plantation plan is properly implemented.
07	Threats to aquatic life due to construction and liquid waste disposal	• The impact will be mitigated by construction of temporary fences with construction management practices to prevent accidental damage to the water resources.	CC	SC and HI	• SC to verify the fences • Regular Monitoring of Surface water

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
Social Environment					
07	Issues to Local Population due to influx of construction workers	• Preference to be given to locals for construction work • Local suppliers for machineries and construction materials to be given preference • Local transporters to be preferred for transportation of machinery/material • The Contractor should warn the workers not to involve in any theft activities • Effective construction control should be done by the contractors by management of heavy vehicles and machinery operation	CC	SC and HI	• Employment records of contractors
Operational phase					
08	During operation phase chemical are used for formulation of Pesticides and fertilizer; and fuels used for generator are stored on site. Accidental spillage and leakages may cause soil contamination. Apart from that contaminated solid waste such as empty bags and expired products if not disposed properly can cause soil contamination.	• Proper training to worker about chemical handling, storage and transportation. • Proper drainage facility will be provided to avoid the water accumulation, which will minimize the soil contamination. • Floor tiling to be done at the entire project area to avoid chemicals leaching into the soil in case of spillage and leakages. • Hazardous solid waste to be managed by AT Waste Management Company	HI	Punjab-EPA	• Regular Monitoring of spillage, leakage of fuel, oil & other chemicals
09	During operation phase, noise levels are not expected to	• Proper engineering controls should be applied to all noise producing	HI	Punjab-EPA	• Regular Environmental Monitoring of noise and air

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
	exceed current baseline measurements. However, expected noise sources with their impacts are discussed here. Noise pollution during operation would be generated by mechanical equipment. Noise and vibration may cause unpleasant hearing impacts on workers associated with operational activities and on nearby communities. However, it is anticipated that during operations noise and vibration from all equipment will be kept within the permissible limits, transient in nature, reversible and not significant.	sources. • Proper maintenance of all mechanical equipment should be carried out to reduce elevated noise produced due to any worn part. • Generators should be installed in an isolated area. • Noise monitoring should be carried out on regular basis. • Site labor working in high noise areas (where noise level exceeds 85 dB (A)), should wear earplugs.			quality monitoring.
11	Operational phase will involve mechanical equipment. Operational activities will involve human interaction which increases the possibility of accidental injury. Moreover, any other emergency situation like fire emergency, plant failure, oil spill or any natural disaster may occur and HI facility workers may be exposed to occupational hazards or accidental injury. HI facility management will make sure that workers are using personnel	• First Aid box should be placed at different location within plant. • First Aid training should be provided to all supervisors and relevant staff. • Maintaining equipment in good operation order is of paramount importance in preventing equipment failure. • Training program for operation and maintenance activities should be observed. • Contact addresses and numbers of local hospitals and other emergency organizations should be available at	HI	Punjab-EPA	• Regular inspection of OHS at plant side • Trainings for workers related to workplace safety

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
	protective equipment (PPEs) during operational activities specially working on heights and working in the dust and high noise areas.	plant all the time. • Emergency response plan should be developed to cater different emergency situation as mentioned above. • Ensure provision of first aid at site in case of any emergency.			
12	In project area, no significant changes are envisaged in the traditional life style and occupation of the local people in residing in the nearby communities. The local people are rather benefited due to the provision of job opportunities. No impact is envisaged due to the influx of the workers as the local will be preferred and hired for working. Social issues may arise which will cause minor negative impact on the social life style of the people. Moreover, health and safety related issues may arise during the construction activities. These impacts are in-significant can be further reduced significantly by adopting best management practices.	• Good relations with the 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 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 the workers should be of good repute • First aid kits having all the necessary first aid stuff will be available at the site • Routine medical check-ups of all the field staff including unskilled labor needs to be conducted by qualified physician and surgeon	HI	Punjab-EPA	• Training of workers should be carried out for operating various constructional 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 the sensitivity towards the local customs and tradition
13	Exposure to chemicals (gases and vapors) may occur during the	• Personal Protective Equipment (PPEs) should be given to workers including	HI	Punjab-EPA	Training on chemical handling and other health

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
	handling of chemicals related to manufacturing of the final products such as low strength acid. Avoid unnecessary chemical exposure to the workers who are working in the process area or related to the process. A long term and direct chemical exposure may impact the health of the workers and the risk of the spillage may increase.	protection and impermeable clothing for use during processing and handling chemicals • Wearing of the PPEs should be regulated strictly by the concerned authority • Chemical spillage will be avoided by developing proper SOPs for the handling of the chemicals • Chemicals and final products (such as Potash of sulphate, HCl.) will be stored properly and all precautionary measures will be adopted to eliminate all the hazards and risks associated with the handling and storage of chemicals and final products			and safety measures.
14	About 1000kg/month hazardous solid waste (including liquid waste, Empty bags, expired products) is anticipated to be produced during operation waste. The quantification of domestic waste will 0.45 kg per person will day, the estimated quantity will be 12.5 kg/per day.	• The large waste bins will be placed at suitable places at all visitor areas. • The waste will be collected from industry and from the bins placed by the workers of waste management team. • Packaging waste and Domestic waste will be produced that will be disposed through LWMC. • Waste Management team will transfer the waste to designated landfill site by LWMC • Agreement has been made with AT waste management for the scientific disposal of solid waste.	HI	Punjab-EPA	Good housekeeping practices

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
		•			
15	During the operational phase the WASA supply line water will be used in which 1500L/ batch will be used during process and 4750 L/day of water will be used for domestic purposes. Water is also consumed during machinery washing. WASA supply or direct groundwater usage will ultimately impact on level of ground water resource which may reduce with the passage of time	• There will be proper lining and engineered structure to avoid the leakage. • Rainwater harvesting should be done on the roof top of the building. It is a simple technique of catching rainwater and storing it in underground aquifers. Rainwater harvesting helps increase the water table, improve the quantity of groundwater and reduce tube well pumping costs. • The water conservation will be adopted in washrooms that will be installed water saving gadgets and eco-devices. • Promote recycling of water were possible especially during machinery washing	HI	Punjab-EPA	Water consumption records
16	80% of water consumed for domestic purposes will be wastewater. Wastewater may also be released during machinery washing.	• Wastewater that will be treated through septic tanks and disposed of through AT Waste Management Company (agreement attached as Annexure J). • Water used for machinery washing will be recycled.	HI	Punjab-EPA	Regular cleaning of septic tanks
17	Outbreak of fire can be major risk at project site due to the presence of flammable chemicals and machinery such as photocopier machines, desktops,	• Special Measure to be taken for the management for flammable chemicals present on site • Fire safety equipment such as sand buckets, fire pump and fire	HI	Punjab-EPA	• Regular inspection of firefighting arrangement at project side • Trainings and drills for workers related to fire

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
	servers etc. An incident of fire can take place due to short circuit.	extinguishers to be placed on each floor. • Regular electrical inspection to be done to find any faulty wiring • Fire alarms to be installed at all sensitive sites on each floor. • The management has developed a comprehensive health, safety and emergency response plan in order to stay proactive in case of ny emergency due to fire hazard. • Fire alarms to be installed at all sensitive sites on each floor. •			safety
18	It is envisaged that no air emissions will be released from the proposed project activity as the system will be fully closed. Hence, no mitigation measures will be required. However, exhaust emissions might release from generator chimney that might impact the ambient air quality. Fumes from chemicals used in pesticides and fertilizer may deteriorate the indoor air quality and effect the health of workers	• Provide appropriate covering/ ventilation of the fumes/odour sources, wherever possible. • Use of specific PPEs should be ensured to reduce any respiratory problems due to odour/fumes from chemical formulations. • All equipment including generators and vehicles used during the project should be properly tuned and maintained in good working condition. • Regular ambient air quality monitoring • Regular checks for O & M (operations & maintenance)	HI	Punjab-EPA	Maintenance of generators
19	The physical existence and operations of the plant may	• Tree planting will enhance biodiversity at the site.	HI	Punjab-EPA	• Tree plantation plan and landscaping

Sr. no.	Anticipated impacts	Mitigation measures	Responsibility		Actions/Monitoring parameters/Monitoring methods
			Execution	Monitoring	
	generate noise, odour nuisance and fugitive. These issues may scare the birds from nesting around the site.	• Trees will attract many bird species and other animal species. • The designated green area will be vegetated and native vegetation present on-site will be preserved			• Maintenance of plantation

7.4 ENVIRONMENTAL BUDGET

The cost which is required to effectively implement the mitigation measures is important for the sustainability of the Project in operation stage of the Project. Management will allocate 2% of total cost as Environmental Budget for meeting the environmental and sustainability purposes.

Sr. No.	Description	Cost Estimated (PKR)
1	Fire fighting	288,000
3	Monitoring and Inspection	192,000
4	PPEs	96,000
5	Plantation	38,400
6	First Aid Box Maintenance	153,000
7	Safety signs	96,000
Total Cost		**960,000**

7.5 SCHEDULE OF IMPLEMENTATION

Table 7-3, Schedule for Implementation of Environmental Budget

HSE training	On quarterly basis
Maintenance and management of environment	On regular basis
Maintenance of equipment	On regular basis
Restoration	As per requirement
Plantation	During the operation phase
Strategic planning to cope with any emergency situation	As per policy
Formulate the disaster management plan to cope with natural disaster	As per policy

Implementation of all these parameters will be included in the environmental budget. Any equipment failure will not be included in this budget.

7.6 PROPOSE EMP REPORTING AND REVIEWING PROCEDURE

All the precautionary measures are suggested in EMP to minimize the pollution creating by construction and operation of project. Reporting and reviewing procedure is following:

- EIA Report & File Submission
- SIR Letter
- Review of EIA Report
- Issuance of Query letters by EPA
- Submission of satisfactory replies of Query Letter
- Public hearing

- Expert committee meeting and presentation
- DG EPA meeting and Presentation
- NOC issuance
- Proper Follow up of case from submission to Issuance of NOC

7.7 PROPOSED ENVIRONMENTAL MONITORING

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

7.7.1 Ambient Air

Quarterly monitoring for ambient air should be conducted during construction & operational activities of the project and report should be submitted to EPA Punjab.

7.7.2 Noise

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

7.7.3 Water Quality

monitoring of water quality should be conducted during construction & operational phases of the project and report should be submitted to EPA Punjab.

Table 7-4, Schedules of Proposed Monitoring

Sr. No.	Parameters	Monitoring Schedules
1	Ambient Air Monitoring (NO_x, CO_x, SO_x, VOCs, PM_{10})	Quarterly
2	Noise Level	Quarterly
3	Water quality	Quarterly

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

SECTION - 8: STAKEHOLDERS AND PUBLIC CONSULTATION

The consultation process with various stakeholders of Asian team has been carried out to involve community and other stakeholders at earlier stages. Information dissemination during public consultation is fundamental to successful conclusion of the Project. This chapter describes the objectives and details of the consultative process adopted; its outcome and the conclusions drawn thereafter.

Public consultation has been done during the planning and design phases of the Project with Government departments, line agencies, NGOs and affected persons of the Project area; concerns and suggestions thereafter have been taken into account and included where appropriate. The consultative process to date has been effective in addressing the concerns over the Project Operational impacts.

8.1 OBJECTIVES OF CONSULTATION

Public consultation plays a vital role in studying the effects of any development project on stakeholders and in its successful implementation and execution. It affords an opportunity to exchange knowledge with those who as members of the society are concerned with the Project, immediately or remotely. Referring particularly to a Project related to environmental assessment, involvement of public is all the more essential, as it leads to better and more acceptable decision-making.

The objectives of the stakeholder and Public consultation conducted in Project Area were;

- To apprise the Project community and stakeholders about Project interventions and potential impacts,
- To record the community concerns and recommendations regarding the project;
- To address/incorporate those recommendations in the Project design to the extent possible and;
- To share the mitigation measures with the local communities.

8.2 PROPONENTS ENVIRONMENTAL MANAGEMENT TEAM

HSE Team will be taking charge of the proposed project. They will be managing health and safety issues as well as issues to employees and locals.

8.3 RESPONSIBLE AUTHORITY

The EPA shall be the responsible authority for reviewing, site inspection and provision of environmental approval for the project.

8.4 CONSULTATIVE ASPECT

The project involves stakeholders from various segments of the society, who have direct or indirect interest in the developmental activity. The Environment

and Social team have endeavored to hold consultative sessions with a number of prominent stakeholders (Project Proponent, Government departments, line agencies, NGOs and affected persons of the Project Area) to evince their views on the project and their opinions, suggestions, understanding on various issues and concerns. The consultations aimed specifically at:

- Dissemination of Project information through discussions, education and liaison.
- Eliciting the comments and feedback on the project.
- Documentation of information narrated by the stakeholders.
- Documentation of mitigation measures proposed by the stakeholders.
- Incorporation of public concerns and their addresses in the EIA/ EMMP.

8.5 IDENTIFICATION OF MAIN STAKEHOLDERS DEPARTMENT AND AGENCIES

There are two types of stakeholders related to the project i.e. primary and secondary stakeholders. Primary stakeholders are those which are directly affected by the Project activities and secondary stakeholders are those which are affected indirectly.

The project has direct impacts on any individual; therefore, so primary stakeholders are identified. Secondary stakeholders are institutional stakeholders, which includes Project Proponent, local Government representatives, and Government officials of the relevant departments, NGO, general public, local residents, shop keepers, vendors, hospital owners/staff, teachers, pedestrians, and businessmen/traders of the city. The categories of the stakeholders who provided useful feedback, included:

- Project Proponent
- Government officials
- Environmental practitioners and experts
- Teachers/students
- Shopkeepers

All those stakeholders have different types of stakes according to their involvements in various aspects of the Project. The consultant tried to contact all the stakeholders and shared their views and concerns and also interacted with the community-based organizations that can support the community.

8.6 ENVIRONMENTAL PRACTITIONERS AND EXPERTS

Team of Asian Consulting Engineer visited the project site, had discussion with stakeholders and consulted with the local people of nearby to evaluate the project socio-economic impacts. People of the area belong to different professions like mostly belong to employment, own businesses, doctors, some of them communicated but according to social value of the area they mostly

hesitate to communicate comfortably. People provide the massive information about the project and have positive remarks regarding the project development.

The Asian team have endeavoured to hold consultative sessions with a number of prominent stakeholders (Project Proponent, Government departments, line agencies, NGOs and affected persons of the Project Area) to evince their views on the project and their opinions, suggestions, understanding on various issues and concerns. The consultations aimed specifically at:

- Dissemination of Project information through discussions, education and liaison.
- Eliciting the comments and feedback on the project.
- Documentation of information narrated by the stakeholders.
- Documentation of mitigation measures proposed by the stakeholders.
- Incorporation of public concerns and their addresses in the EIA/ EMMP.

8.7 AFFECTED AND WIDER COMMUNITY

A series of consultation was carried out with stakeholders and general public in nearby areas. Filled Stakeholder questionnaires along with list of respondents is attached as Annexure-K

The purpose of this survey was to achieve the objectives of the consultation, highlight the main issues in the implementation of the project and finally propose mitigation measures. Open and close ended questionnaire was used to collect the views concerning the assessment survey. Scoping sessions and informal group discussions were also carried out with local residents and local government representatives regarding the project. The outcome of whole consultation process was very encouraging. The following issues were discussed during Informal Meetings with local representatives:

a. Brief Description of the Project
b. Current economic condition in the area
c. Suggestions for improvement in the current industrial system and all activities related to industry
d. Perceptions about the project
e. Perceived impacts of the project

The local poor people predominantly requested for unskilled and semi-skilled jobs during implementation of the Project. On the basis of the consultations so far, it appears that the Project will have no insurmountable environmental and social impact. The community generally supported the project.

8.8 SURVEY ANALYSIS RESULTS

8.8.1 People favour of proposed construction

60% of the people strongly agreed and 20% agreed that with the construction of the industry in this area and only 15% disagreed and 5% strongly disagreed.

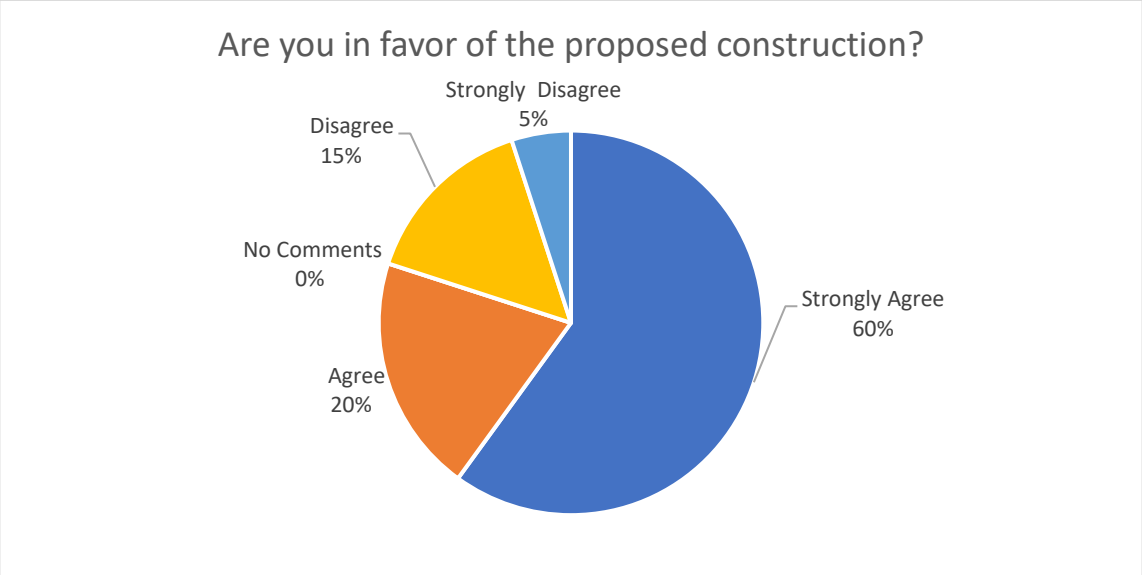


Figure 8-1,People favor of proposed construction

8.8.2 Increase in significance of the project area

45% of the people strongly agreed and 35% agreed that the construction of the industry will increase the importance of the project area and only 10% disagreed and 5% strongly disagreed. While 5% had no comments.

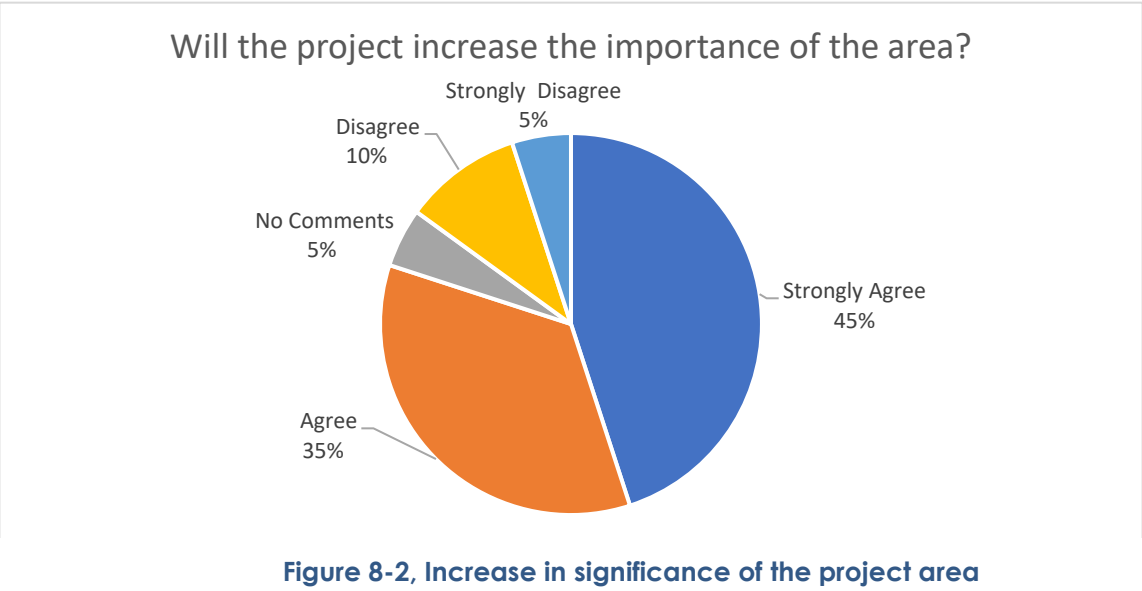


Figure 8-2, Increase in significance of the project area

8.8.3 Improvement of living standard of the area

45% of the people strongly agreed and 30% agreed that the construction of the industry will improve the living standards of the project area and only 20% disagreed and 5% strongly disagreed.

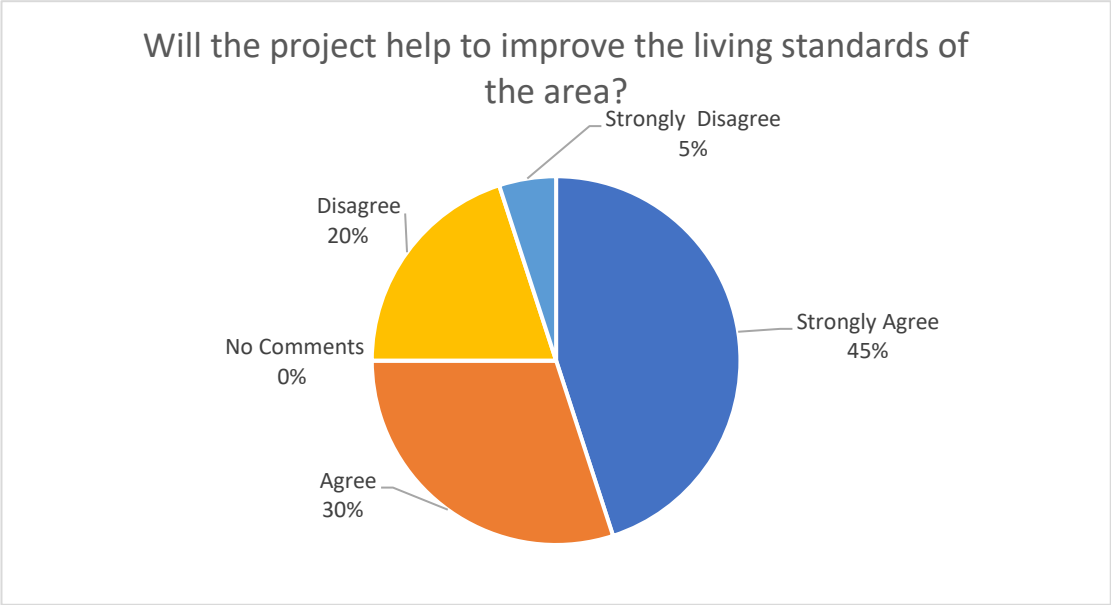


Figure 8-3, Improvement of living standard of the area

8.8.4 Effect on the Environment

15% of the people strongly agreed and 10% agreed that the construction of the industry will affect the environment of the project area, only 65% disagreed and 10% strongly disagreed. While 5% had no comments.

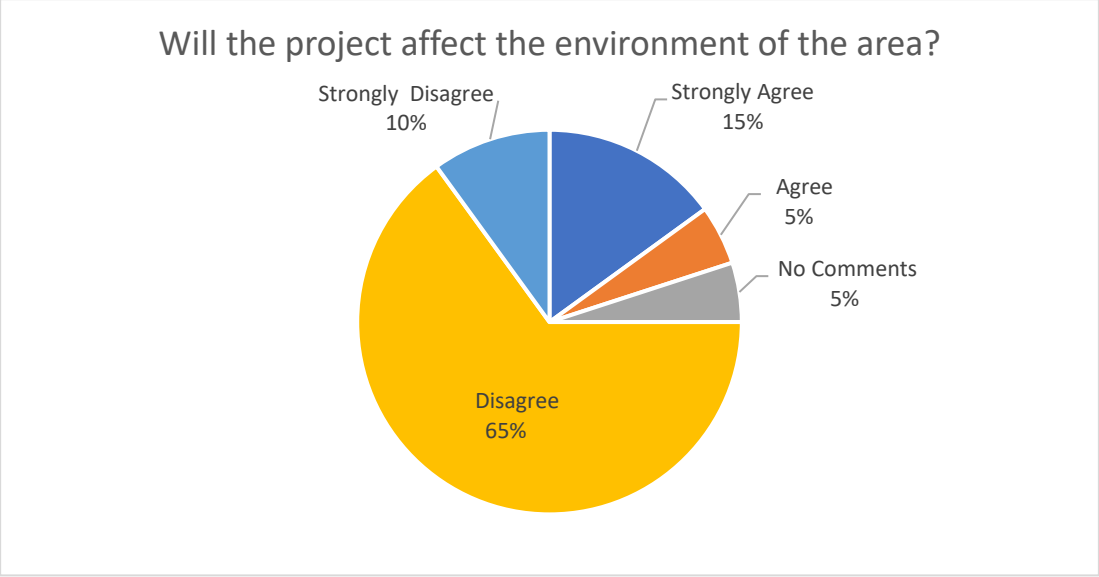


Figure 8-4, Effect on the Environment

8.8.5 Level of satisfaction

40% of the people strongly agreed and 35% agreed that they are satisfied with the construction of this industry, only 25% disagreed.

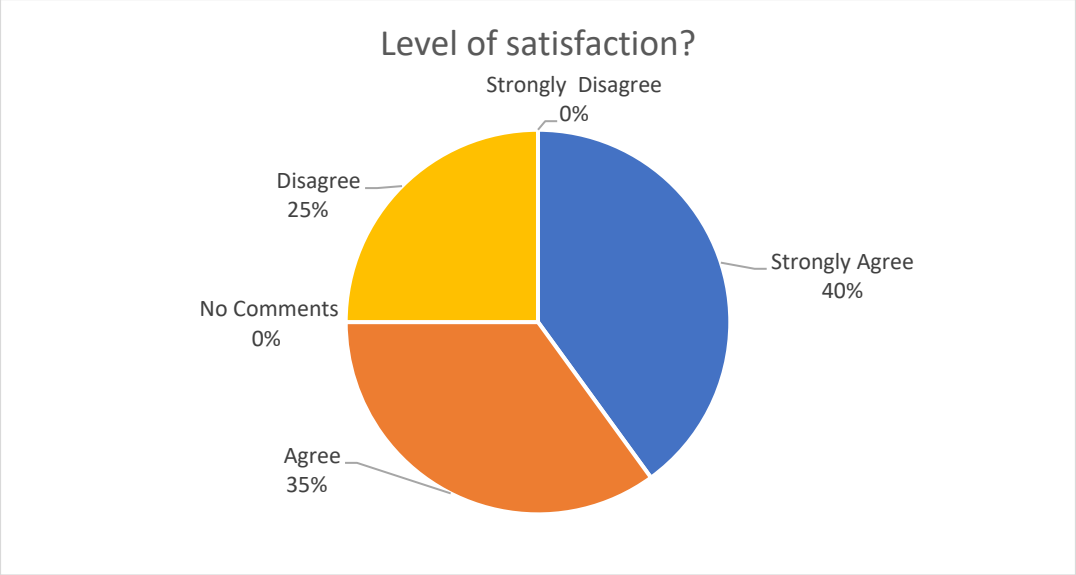


Figure 8-5, Level of satisfaction

8.9 SUMMARY OF ISSUES RAISED BY AFFECTED AND WIDER COMMUNITY

A summary of the key issues raised by stakeholders and how these are being addressed by Project Proponent is provided in **Table** 8-1 below.

Table 8-1, Summary of issues and commitments by Proponent

Issue	Aspect/ Concern raised by Stakeholders	Project Proponent Commitments
Employment Opportunities	Expectations of employment are very high. Job opportunities are less for herders as they generally have less skills and training.	Employment is the main priority of the industry. Mostly locally skill and unskilled labor will be prioritized and also there will be job in executive level. Max. persons according to the requirement will be employed by the industry.
Training Opportunities	People are keen to consult with subject industry if the Project offers training and upgrading opportunities to enhance their trade or professional skills.	Development of the Training Strategy, including commitment of allocation of budget investment for training infrastructure, delivery and design. Installation of training facilities in for worker of the company and students will also be accommodate.

Issue	Aspect/ Concern raised by Stakeholders	Project Proponent Commitments
Health & safety	Health and safety issues may be arising due to industrial and constructional activity.	All possible safety measures will be taken during operation and construction phase. Hextar Industries Pvt Limited will designated teams for HSE concern emergency equipment like fire extinguishers, spill kits, water hydrant system, effective use of PPEs and first aid are already well managed.
Local economy and business development	Local service providers are keen to participate in providing services to provide raw material and expect to receive in order to adjust their businesses to meet specific needs.	Proponent has main focus that they will all the material regarding construction to buy from the local market. This will help the local and small business and to people who are keen interested to become suppliers.
Environmental Issues	Dust and noise impacts, particularly from the construction activities and in operation of mechanically unfit machines, are of concern to nearby residents. Environmental degradation during construction.	Implementation of controls under the Environmental Management Plans, including on and off-site dust and noise monitoring. A Participatory Environmental Monitoring Program will be launched to spread awareness.
Water quantity and quality	Water quality and quantity, and impacts from the wastewater disposal are all key concerns for nearby community.	Implementation of consultation in relation to water use, recycle and development of the Participatory Environmental Monitoring Program.

SECTION - 9: CONCLUSION & RECOMMENDATIONS

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

9.1 CONCLUSION

The EIA study reveals that the project is economically viable and socially acceptable and the proponent will implement the project in the environment friendly manner. He will adopt all the necessary measures to control any impact if resulting from the project. He will provide the safe drinking water, safe working environment, proper training and first aid facility to all workers and staff. The project will generate additional jobs during construction and operation phases.

9.2 RECOMMENDATIONS

In view of the comprehensive screening process and findings of the present study there is no need of conducting further investigations.

- Tree plantation inside and near the project area is recommended.
- The Management of will continue to assist the local communities as a corporate social responsibility (CSR).
- Any seepage and leakage will be controlled through proper mitigation measures.
- Sound proof room should be constructed for generator to control its sound (If required).
- Use of narcotics and smoking must be prohibited during working, filling or handling of fuel.
- PPEs must be provided to workers such as gloves, masks, ear muffs /etc.
- Proper solid waste management system must be adopted.
- Safety signs, safety board's etc. must be placed on site during various developmental stages.
- Machinery will never be left in running condition.
- First Aid measures, health & safety Equipment (PPEs) will be provided to workers.
- Fire Fighting station & system will be installed.
- The management of subject project will assist the local communities as a corporate social responsibility.
- Jobs and employment will be provided to the local area.

The present EIA report is enough to meet the administrative and legal framework. After the complete study of the project, it is concluded that project will not have significant adverse impacts on the nearby community

and on environment. Overall, the project will have positive impacts on the local population and country as a whole. Therefore, it is requested for the environmental approval for the subject project.

ANNEXURES

ANNEXURE - A: LIST OF ABBREVIATION

PEPA	Punjab Environmental Protection Act
NEQS	National Environmental Quality Standards
PEQS	Punjab Environmental Quality Standards
WAPDA	Water and Power Development Authority
EMP	Environmental Management plan
WWTF	Waste Water Treatment Facility
Pak-EPA	Pakistan Environmental Protection Agency
W.H. O	World Health Organization
PET	Punjab Environmental Tribunal
SWM	Solid Waste Management
CSR	Corporate Social Responsibility
MSWs	Municipal Solid Wastes
TMA	Town Municipal Authority
KVA	Kilo Volt Ampere
PPEs	Personal protective equipment's
PM	Particulate matter

ANNEXURE - B: REFERENCES

- https://www.epa.gov/sites/production/files/2015-10/documents/njmc-wpp-2.pdf
- Schedule I of Punjab Environmental Protection Act 1997 (Amended 2012)
- section 12 of Punjab Environmental Protection Act 1997 (Amended 2012)
- Pakistan Environmental protection act 1997
- Punjab Environmental Protection Act 1997 (Amended 2012)
- Guideline for the Environmental Assessment
- Regulations of Environmental Assessment, Regulations 2000
- National Conservation Strategy- Pakistan
- Guideline for the public consultation
- National Resettlement Policy and Ordinance
- National Environmental Quality Standards (Self-monitoring and reporting by the industry)
- Labor laws
- Canal and Drainage Act, 1873
- National Environmental Policy 2005.
- The Land Acquisition act, 1894
- The Punjab local Governmental ordinance, 2001.
- Meteorological data from meteorological department and website
- Pakistan Biosafety rules 2005
- Pakistan Environmental agency (review of IEE/EIA) regulation 2000.
- Punjab Portal (http://www.punjab.gov.pk/attock)
- Sectorial Guideline for environmental reports, industrial states
- Pakistan Environmental Protection ordinance (PEPO), 1983
- OSHAS 1800 for health and safety

ANNEXURE - C: GLOSSARY

Words	Dictionary
Mitigation	The action of lessening in severity or intensity
Legislation	law enacted by a legislative body
Compliance	Acting according to certain accepted standards
Flora	All the plant life in a particular region or period
Fauna	All the animal life in a particular region or period
Demarcated	Separate clearly, as if by boundaries
Screening	The display of a motion picture
Substitutions	An event in which one thing is substituted for another
Regulations	An authoritative rule
Stakeholders	A person or organization with an interest or concern in something
Vulnerable	Susceptible to attack

ANNEXURE - D: TORS

TERM OF REFERNCES

These terms of references are being submitted for the subject EIA study under Clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment. These TORs of EIA have been prepared by the environmental consultants, in consultation with the project proponent. Proposal and TORs for the EIA accepted by the Lahore Development Authority.

Introduction of Project

The project deals with the Construction of Agrichemical industry for the blending/mixing, formulation and packaging of Fertilizers and Pesticides under the name M/S Hextar Industries Pvt. Ltd.

Capacity of project:

The production capacity for blending and formulation is 30 metric ton per day and for packaging is 50000 units/per day.

Cost of Project:

The capital cost of the project will be about 48 million rupees.

Area of the Project:

Total area of industry is 43.9 Kanal. And covered area of project is 54390 sqft and open area is 143939 sqft.

Name of Proponent

Mr. Farrukh Saeed Durrani is the project Proponent.

Environmental Consultant & Client

Hextar Industries Pvt. Ltd. has appointed the Asian Consulting Engineers, as the Consultant for the subject project to conduct the EIA. Asian Consulting Engineers will be called as "Consultant" and Hextar Industries Pvt. Ltd. as the "Client".

Objective of the EIA study

The Objective of study includes Compliance of section 12 of PEPA 1997 (Amended 2012), PEQS and fulfilment of HSE conditions.

Purpose of the EIA

The key objectives of the EIA are to:

- Document the ecological and socioeconomic baseline conditions of the study area and the affected communities
- Inform and obtain input from stakeholders, (e.g., governmental authorities, the public, and indigenous communities) and capture their relevant issues and concerns

- Assess in detail the environmental, social, and health impacts that would result from the project
- Suggestion of environmental and social mitigation measures to identified environmental Impacts
- Develop the EMPs as discussed above, based on the mitigation measures developed in the EIA.
- Meet the requirements or recommendations of the applicable National Environmental Laws and Guidelines

SCOPE OF SERVICES

EIA for the subject project is construction of Hextar Industries Pvt. Ltd.

Accordance with:

1. The Punjab Environmental Protection Act, 1997 (amended 2012) and the
   - Various guidelines developed by the Punjab Environmental Protection Agency
   - Pakistan Environment Protection Agency Guidelines
   - Guidelines of Labor & Human Resource Department
   - Punjab Local Government Guidelines
   - Punjab Food Authority Guidelines
2. Methodology for carrying out this study
   - Project Description
   - Site Selection
   - Project Alternatives
3. Process Description
   - Detailed review of the processes
   - Design Parameters
   - Process flow chart
   - Details related top Plant and Equipment
4. Environmental profile of the environmental study area
   - Climatology
   - Geographical features
   - Geological and Hydrological features
   - Historical review
   - Land Use
   - Ecology, i.e., Flora and Fauna etc.
5. Analysis of EPA required environmental parameters
   - Sampling for Air, Water, and Noise Level

- Ambient Air Quality will be monitored at the existing project site by using certified instruments/methods to check the concentration of pollutants in ambient air before construction.
- Groundwater quality of the area will be checked through analysing EPA Smart Parameters. 2-3 representative samples will be collected to check the groundwater quality by using certified sampling techniques and analysis procedures.
- Noise Level will be monitored at 5 to 6 localities at existing project site

6. Investigate Socio-Economic and Socio-Environmental aspects and cultural values within and around the operating facility
   - Administrative Set up
   - Cultural and Social Values
   - Social Cohesion
   - Interviews from different groups
7. Development activities and Waste Management
8. Identify and evaluate major environmental impacts
9. Identify mitigation measures and develop Environmental Management and Monitoring plan
10. Conclusions based on the study conducted for this EIA.

EIA PROCEEDING

1. All other requirements, as set forth by
   - The Punjab Environmental Protection Act, 1997 (Amended 2012) and the
   - Various guidelines developed by PEPA
   - Any other legal requirements existing within Pakistan
2. 1-2 Site Visits for data acquisition
3. Environmental Monitoring
4. Preparation of Lab Analysis Report
5. Preparation of Environmental Impact Assessment (EIA)
6. Submission of all EIA report in office of DG EPA Punjab
7. Conduction of Public Hearing of EIA
8. Briefing & Presentation at the site to District Officer/Inspector for Environmental Management.
9. Reply to technical Environmental Objections/Review
10. Presentation in the office of DG EPA, Punjab
11. Issuance of NOC

CLIENT RESPONSIBILITY

We expect the following inputs from the clients:

- As soon as the Proposal is accepted, the Consultants will request for the nomination of senior officer to be nominated as Coordinator who will be responsible for all coordination activities as required by the Consultants and to whom the Consultants will refer for information and assistance. All correspondence between the Consultants and the CLIENT will be routed through the coordinator.
- Asian will require free access to all relevant information available with the Client.
- Assess and identify major potential issues and impacts particularly those which may have influence on design, construction and operation at any stage.
- The report developed for the CLIENT shall be the property of the CLIENT and the Consultants shall adhere to confidentiality morally as well as legally.
- Client will provide relevant documents as:
    1. Signed application on company letter head (pattern will be provided)
    2. Undertaking on Rs. 100/- Stamp Paper (pattern will be provided)
    3. Affidavit on Rs. 100/- Stamp Paper (pattern will be provided)
    4. Copy of CNIC of proponent
    5. Signature on Schedule IV (pattern will be provided)
    6. Layout Map of the project
    7. Other NOCS/ Certificate's form other concerned departments (if any)
- Project proponent will provide the Bank Drafts of amount of Rs. 30,000/- in favor of D.G. EPA Punjab which is review fee for EIA.
- If any legal litigation arises from stakeholders during the preceding of EIA, the consultant will not be responsible for the delay in the approval process due to legal litigation.

Signature: _____

Ms. Faiza Anjum

Environment Specialist

Date: 5-1-2022

Signature: _____

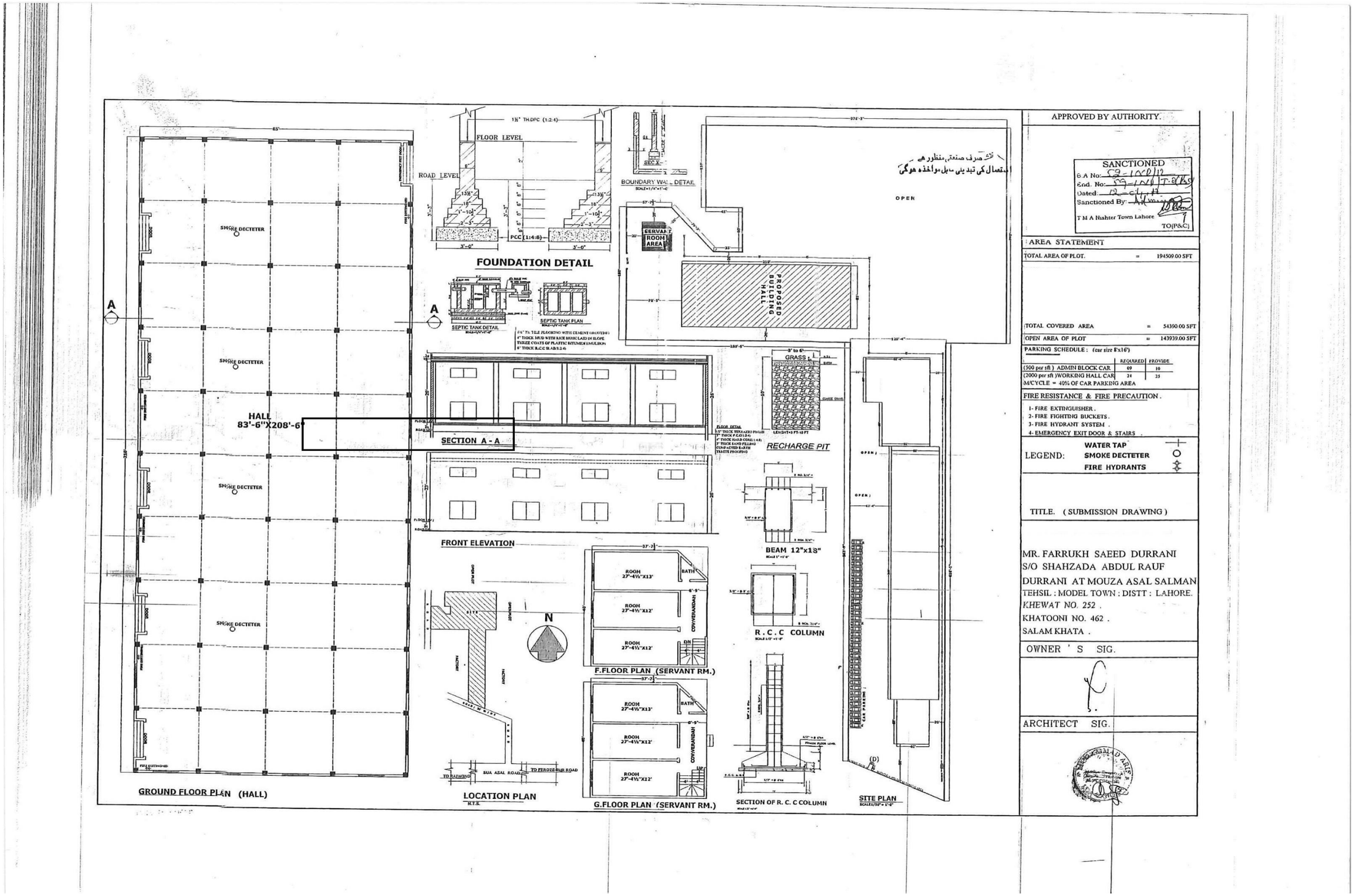
Farrukh Saeed Durrani

Proponent

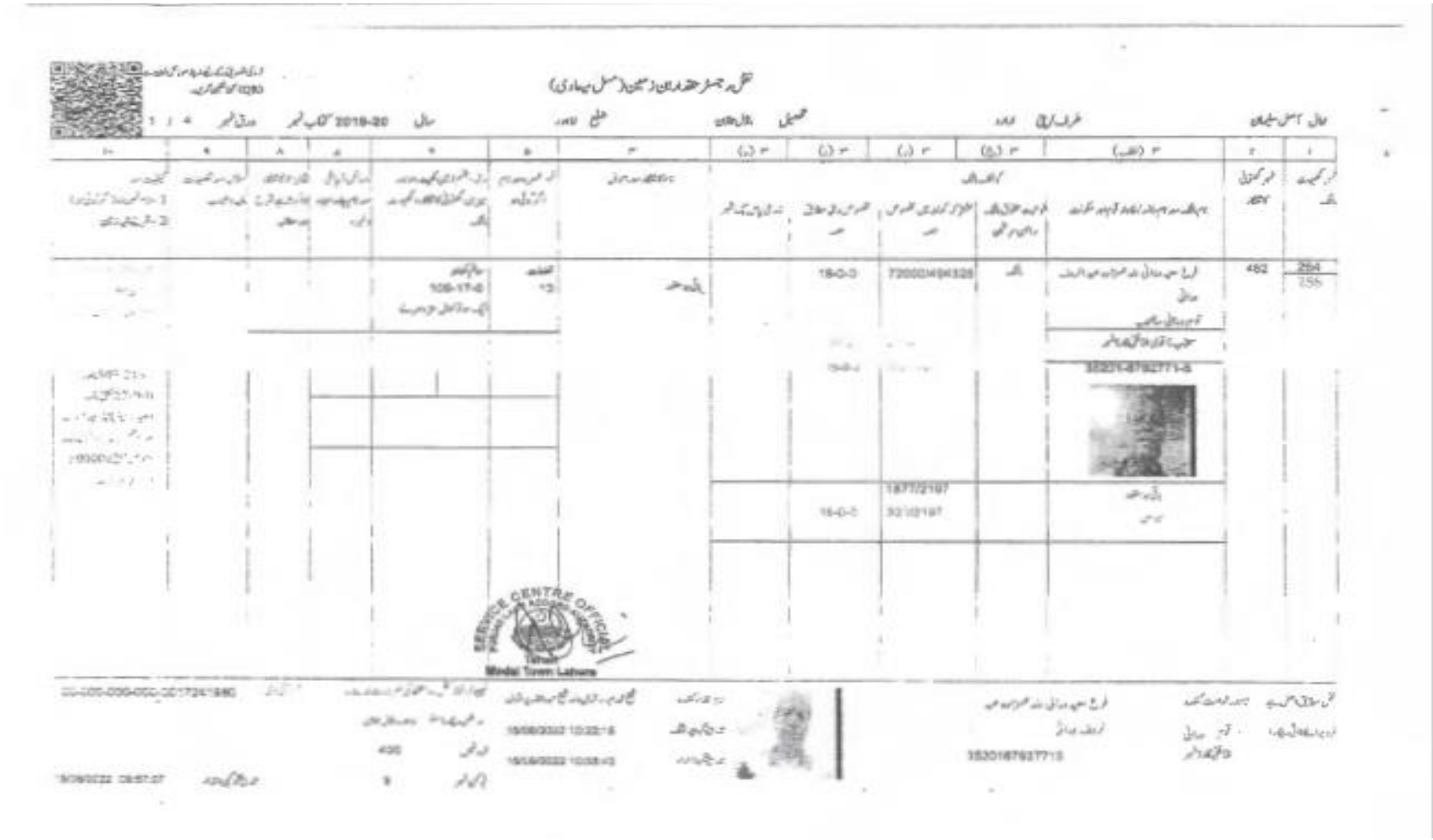
Date: 22-12-2022

HEXTAR INDUSTRIES (PVT) LTD
Khand Pind, Pandoki Jugian Stop, 4-KM Sue Asal, Ferozpur Road, Lahore 042 35935545-6

ANNEXURE - E: LAYOUT & GOOGLE MAP OF PROJECT


FOUNDATION DETAIL
FLOOR LEVEL
ROAD LEVEL
PCC (1:4:8)
BOUNDARY WALL DETAIL
SEC X-
SEPTIC TANK DETAIL
SEPTIC TANK PLAN
SERVANT ROOM AREA
PROPOSED BUILDING HALL
OPEN
HALL
83'-6"X208'-6"
SMOKE DECTETER
SECTION A - A
RECHARGE PIT
GRASS
FRONT ELEVATION
BEAM 12"x18"
R.C.C COLUMN
GROUND FLOOR PLAN (HALL)
LOCATION PLAN
F.FLOOR PLAN (SERVANT RM.)
G.FLOOR PLAN (SERVANT RM.)
SECTION OF R. C. C COLUMN
SITE PLAN
ROOM 27'-4½"X13'
ROOM 27'-4½"X12'
BATH
CONVERSANDAH
SUA ASAL ROAD
TO RATWINDI
TO FEROZE-PUR ROAD
APPROVED BY AUTHORITY.
SANCTIONED
T M A Nishter Town Lahore
TO(P&C)
AREA STATEMENT
TOTAL AREA OF PLOT. = 194509.00 SFT
TOTAL COVERED AREA = 54350.00 SFT
OPEN AREA OF PLOT = 143939.00 SFT
PARKING SCHEDULE : (car size 8'x16')
REQUIRED PROVIDE
(500 per sft) ADMIN BLOCK CAR 69 10
(2000 per sft) WORKING HALL CAR 24 25
M/CYCLE = 40% OF CAR PARKING AREA
FIRE RESISTANCE & FIRE PRECAUTION .
1- FIRE EXTINGUISHER .
2- FIRE FIGHTING BUCKETS .
3- FIRE HYDRANT SYSTEM .
4- EMERGENCY EXIT DOOR & STAIRS .
LEGEND:
WATER TAP
SMOKE DECTETER
FIRE HYDRANTS
TITLE. (SUBMISSION DRAWING)
MR. FARRUKH SAEED DURRANI
S/O SHAHZADA ABDUL RAUF
DURRANI AT MOUZA ASAL SALMAN
TEHSIL : MODEL TOWN : DISTT : LAHORE.
KHEWAT NO. 252 .
KHATOONI NO. 462 .
SALAM KHATA .
OWNER ' S SIG.
ARCHITECT SIG.

ANNEXURE - F: LAND OWNERSHIP DOCUMENT



نقل رجسٹر حقداران زمین (مسل میعادی)

محال آصل سلیمان | طرف/پتی [illegible] | تحصیل ماڈل ٹاؤن | ضلع لاہور | سال 2019-20 | کتاب نمبر | ورق نمبر 4 / 1

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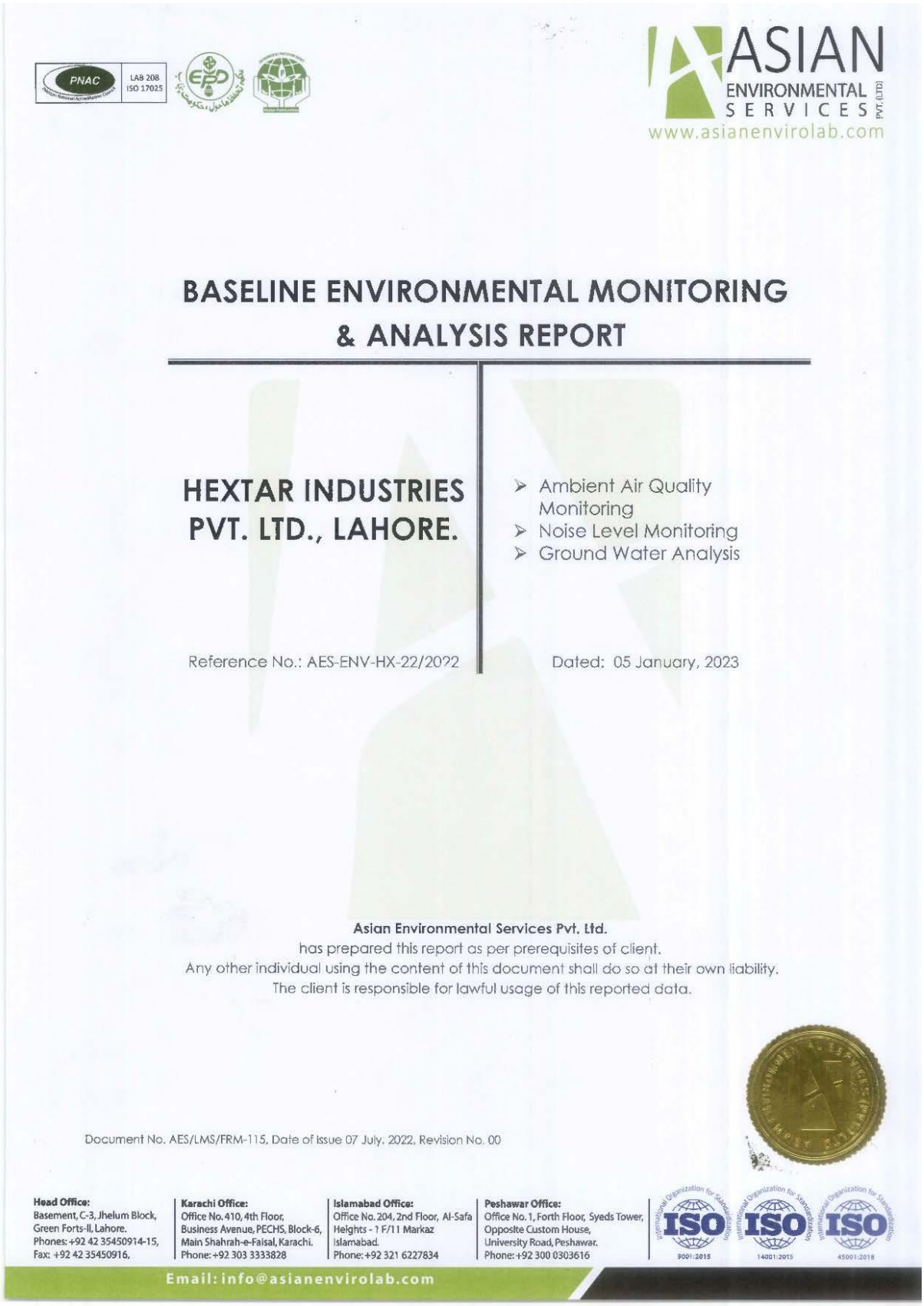
ANNEXURE - G: EIA TEAM

Sr. No.	Team Member	Position Held	Qualifications
1.	Aleem Butt	Chief Environmentalist Team Leader-EIA	M.Phil. Environmental Sciences, Government College University (GCU)Lahore M.Sc. Environmental Sciences, Punjab University (PU), Lahore NEBOSH, Lead Auditor
2.	Noman Ashraf	Environmental Specialist	M.Phil. Environmental Sciences, Government College University (GCU) Lahore PGD, Environmental Law University of the Punjab, Lahore
3.	Faiza Anjum	Environmental Specialist	MS Environmental Sciences University of the Punjab, Lahore
4.	Sajjad Hussain	Chief Chemist	M.Phil. Chemistry Government College University (GCU) Lahore
5.	Hafsa Mehmood	Environmentalist	BS Hons Environmental Sciences, Government College University (GCU) Lahore
6.	Ayesha Rasheed	Environmentalist	BS Hons Environmental Sciences, Government College University (GCU) Lahore
7.	Asma Butt	Sociologist	M.Sc. Sociology, university of the Punjab
8.	Engr. Umair Tallat	Sr. Field Engineer	M.S. Environmental Engineering, NUST Islamabad
9.	Mujeeb ur Rehman	Field Engineer	BS. Environmental Engineering, UET Lahore

ANNEXURE - H: LAB REPORTS OF ENVIRONMENTAL MONITORING



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ASIAN ENVIRONMENTAL SERVICES PVT. (LTD.)
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BASELINE ENVIRONMENTAL MONITORING & ANALYSIS REPORT

HEXTAR INDUSTRIES PVT. LTD., LAHORE.

- Ambient Air Quality Monitoring
- Noise Level Monitoring
- Ground Water Analysis

Reference No.: AES-ENV-HX-22/2022

Dated: 05 January, 2023

Asian Environmental Services Pvt. Ltd.
has prepared this report as per prerequisites of client.
Any other individual using the content of this document shall do so at their own liability.
The client is responsible for lawful usage of this reported data.

Document No. AES/LMS/FRM-115, Date of issue 07 July, 2022, Revision No. 00

Head Office:
Basement, C-3, Jhelum Block, Green Forts-II, Lahore.
Phones: +92 42 35450914-15,
Fax: +92 42 35450916,

Karachi Office:
Office No. 410, 4th Floor, Business Avenue, PECHS, Block-6, Main Shahrah-e-Faisal, Karachi.
Phone: +92 303 3333828

Islamabad Office:
Office No. 204, 2nd Floor, Al-Safa Heights - 1 F/11 Markaz Islamabad.
Phone: +92 321 6227834

Peshawar Office:
Office No. 1, Forth Floor, Syeds Tower, Opposite Custom House, University Road, Peshawar.
Phone: +92 300 0303616

Email: info@asianenvirolab.com

ISO 9001:2015 ISO 14001:2015 ISO 45001:2018

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Location For Ambient Air Monitoring-01

NEAR PROJECT SITE

Lahore

Page 1 of 5

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Fax: +92 42 35450916,

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Email: info@asianenvirolab.com

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Ambient Air Monitoring Report

Monitoring Details			
Reference Number	AES-ENV-HX-22/2022-AA-01	**Sampling Point**	Near project site, Lahore
Date of Monitoring	27-12-2022 to 28-12-2022	**Sampling Coordinates**	31°18'13.03"N 74°21'27.58"E

Sr. No.	Time	CO (mg/m³)	NO (µg/m³)	NO_2 (µg/m³)	NO_x (µg/m³)	SO_2 (µg/m³)
1	09:00	1.2	17.9	23.7	41.6	38.0
2	10:00	1.3	18.1	23.9	42.0	38.3
3	11:00	1.6	20.0	25.6	45.5	41.3
4	12:00	1.6	20.6	25.4	46.0	40.8
5	13:00	1.8	22.3	26.7	49.0	44.4
6	14:00	1.6	19.4	25.2	44.5	41.5
7	15:00	1.5	21.8	23.9	45.6	39.0
8	16:00	1.3	19.8	25.9	45.6	41.6
9	17:00	1.3	19.9	23.9	43.7	38.5
10	18:00	1.1	18.5	25.5	44.0	41.0
11	19:00	1.0	17.0	24.2	41.1	38.2
12	20:00	0.5	17.5	21.9	39.3	37.5
13	21:00	1.1	15.6	21.5	37.0	35.7
14	22:00	1.1	16.4	21.0	37.3	36.1
15	23:00	0.9	13.7	19.9	33.6	33.7
16	00:00	0.9	14.3	19.9	34.1	30.0
17	01:00	0.8	16.5	18.4	34.9	30.3
18	02:00	1.0	14.5	18.1	32.5	30.5
19	03:00	1.0	15.8	16.4	32.2	28.2
20	04:00	1.1	17.0	16.1	33.1	25.4
21	05:00	1.0	17.5	17.4	34.9	27.6
22	06:00	1.1	15.7	17.6	33.2	30.0
23	07:00	1.4	17.3	19.6	36.9	33.1
24	08:00	1.3	19.0	22.3	41.2	30.9
Average Concentration		**1.2**	**17.7**	**21.8**	**39.5**	**35.5**

Monitored By

Reviewed By (TM)

Approved By (QM)

Page 2 of 5

Environmental Services (Pvt) Ltd LAHORE

Document No: AES/IMS/FRM-115, Date of Issue 07 July, 2022, Revision No. 00

Head Office: Basement, C-3, Jhelum Block, Green Forts-II, Lahore. Phones: +92 42 35450914-15, Fax: +92 42 35450916,
Karachi Office: Office No. 410, 4th Floor, Business Avenue, PECHS, Block-6, Main Shahrah-e-Faisal, Karachi. Phone: +92 303 3333828
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Ambient Air Monitoring Report

Monitoring Details			
Reference Number	AES-ENV-HX-22/2022-AA-01	**Sampling Point**	Near project site, Lahore
Date of Monitoring	27-12-2022 to 28-12-2022	**Sampling Coordinates**	31°18'13.03"N 74°21'27.58"E

Parameters	Units	Monitoring Duration	LDL	Average Obtained Concentration	PEQS	Remarks
Nitrogen Dioxide (NO_2) *	µg/m³	08Hours	1.00	21.8	80.0	Optimal
Nitrogen Oxide (NO) *	µg/m³	08Hours	1.00	17.7	40.0	Optimal
NO_x*	µg/m³	08Hours	1.00	39.5	120.0	Optimal
Sulphur Dioxide (SO_2) *	µg/m³	08Hours	1.00	35.5	120.0	Optimal
Carbon Monoxide (CO) *	mg/m³	08Hours	0.01	1.2	05.0	Optimal
Particulate Matter (PM_{10}) *	µg/m³	08Hours	1.00	83.4	150	Optimal
Particulate Matter ($PM_{2.5}$) *	µg/m³	08Hours	1.00	**45.5**	35	High
Total Particulate Matter (TSP)	µg/m³	08Hours	1.00	210.34	500	Optimal

*Parameters are approved from Punjab Environment Protection Agency.

Abbreviations:
LDL= Lower Detection Limit PEQS= Punjab Environmental Quality Standards µg/m³ = Micro Gram per Meter Cube

Remarks:
Optimal = Compliance with Permissible Range Marginal = Close to Extreme Edge High = Exceeds from Permissible Range
Low = Less Than Permissible Range

Monitored By

Reviewed By (TM)

Approved By (QM)

Asian Environmental Services (Pvt) Ltd LAHORE

Page 3 of 5

Document No. AES/LMS/FRM-115, Date of Issue 07 July, 2022, Revision No. 00

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Ambient Air Monitoring Report

Monitoring Details

Reference Number	AES-ENV-HX-22/2022-AA-01	**Sampling Point**	Near project site, Lahore
Date of Monitoring	27-12-2022 to 28-12-2022	**Sampling Coordinates**	31°18'13.03"N 74°21'27.58"E

Sr. No.	Time	Ambient Temperature °C	Wind Direction	Wind Velocity m/s	Humidity %	Pressure (mm of Hg)
1	09:00	12	SW	1.38	95	765.70
2	10:00	13	SW	1.66	93	765.14
3	11:00	15	SW	1.66	72	766.15
4	12:00	17	SW	1.94	54	765.21
5	13:00	19	SW	1.94	50	765.49
6	14:00	19	SW	1.38	51	764.57
7	15:00	17	SE	1.11	55	764.54
8	16:00	16	SE	1.11	67	764.54
9	17:00	15	SE	0.55	72	764.99
10	18:00	14	SE	0.27	74	764.81
11	19:00	13	SE	0.27	74	764.84
12	20:00	13	SE	0.27	74	765.79
13	21:00	13	SE	0.27	75	766.12
14	22:00	12	SE	0.27	75	765.39
15	23:00	12	SE	0.27	75	765.28
16	00:00	12	SE	0.27	76	765.41
17	01:00	12	SE	0.27	77	765.84
18	02:00	12	SE	0.00	77	765.84
19	03:00	12	SE	0.27	76	765.84
20	04:00	12	SE	0.27	74	765.80
21	05:00	12	SE	0.55	77	765.80
22	06:00	12	SE	0.55	82	765.44
23	07:00	12	SE	0.83	90	765.44
24	08:00	12	SE	0.55	94	766.13

Monitored By

Reviewed By (TM)

Approved By (QM)

Asian Environmental Services (Pvt) Ltd LAHORE

Page 4 of 5

Document No. AES/LMS/FRM-115, Date of Issue 07 July, 2022, Revision No. 00

Head Office: Basement, C-3, Jhelum Block, Green Forts-II, Lahore. Phones: +92 42 35450914-15, Fax: +92 42 35450916,
Karachi Office: Office No. 410, 4th Floor, Business Avenue, PECHS, Block-6, Main Shahrah-e-Faisal, Karachi. Phone: +92 303 3333828
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Peshawar Office: Office No. 1, Forth Floor, Syeds Tower, Opposite Custom House, University Road, Peshawar. Phone: +92 300 0303616
Email: info@asianenvirolab.com

ISO 9001:2015 ISO 14001:2015 ISO 45001:2018

PNAC LAB 208 ISO 17025

ASIAN ENVIRONMENTAL SERVICES PVT. (LTD)
www.asianenvirolab.com

Noise Monitoring Report

Monitoring Details			
Reference Number	AES-ENV-HX-22/2022-AA-01	**Sampling Point**	Near project site, Lahore
Date of Monitoring	27-12-2022 to 28-12-2022	**Sampling Coordinates**	31°18'13.03"N 74°21'27.58"E

Sr. No.	Time	Noise dB(A)*		PEQS
1	09:00	55		
2	10:00	56		
3	11:00	57		
4	12:00	56		
5	13:00	59		
6	14:00	58		
7	15:00	54	Day Time	75
8	16:00	56		
9	17:00	54		
10	18:00	51		
11	19:00	53		
12	20:00	54		
13	21:00	53		
14	22:00	51		
15	23:00	54		
16	00:00	50		
17	01:00	55		
18	02:00	50	Night Time	65
19	03:00	52		
20	04:00	53		
21	05:00	56		
22	06:00	57		
23	07:00	59	Day Time	75
24	08:00	58		

*Parameters are approved from Punjab Environment Protection Agency.

Monitored By | Reviewed By (TM) | Approved By (QM)

Asian Environmental Services (Pvt) Ltd. LAHORE

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GROUND WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-ENV-HX-22/2022-GW-56	**Reporting Date**	05-01-2023
Nature of Sample	Ground Water	**Sampling Method Reference**	AES/LMS/QSP-014
Grab/Composite	Grab	**Sample Collected by/Sent By**	AES
Sampling Date	27-12-2022	**Sample Receiving Date**	29-12-2022
Analysis Completion Date	05-01-2023	**Lab Temp & Humidity**	25.1°C & 50 %
Ambient Temperature & Humidity at the Time of Sampling			14°C & 66%
Sample ID	AES-ENV-GW-56/2022	**Sampling Location**	Basin Outlet.
Clint Details	Hextar Industries Pvt. Ltd., Lahore.	**Validation Officer**	Mr. Nadeem

Ground Water Analysis Results

Parameter	Analysis Method	PEQS	Result	MU (CL95%)	Remarks
Lab Analysis					
Color*	SMWW 2120 C	≤ 15 TCU	0	N.A.	Optimal
Taste*	SMWW 2160 C	Non-Objectionable	Non-Objectionable	N.A.	Optimal
Odor*	SMWW 2150 B	Non-Objectionable	Non-Objectionable	N.A.	Optimal
Turbidity*	SMWW 2130 B	< 5 NTU	0	N.A.	Optimal
Total Hardness (as $CaCO_3$) **	SMWW 2340 C	< 500 mg/L	116	± 2.07	Optimal
Total Dissolved Solids (TDS)**	SMWW 2540 C	< 1000 mg/L	388	± 7.21	Optimal
pH**	SMWW 4500 H^+ B	6.5- 8.5	7.57	± 0.049	Optimal
Aluminum (Al)	SMWW 3111 B	≤ 0.2 mg/L	<0.005	N.A.	Optimal
Antimony (Sb)	SMWW 3114 B	≤ 0.005 mg/L	<0.005	N.A.	Optimal
Arsenic (As)	SMWW 3114 B	≤ 0.05 mg/L	<0.005	N.A.	Optimal
Barium (Ba)	SMWW 3113 B	0.7 mg/L	0.0035	N.A.	Optimal
Boron (B)	SMWW 3113 B	0.3 mg/l	<0.02	N.A.	Optimal
Cadmium (Cd)	SMWW 3113 B	0.01 mg/L	<0.006	N.A.	Optimal
Chloride (Cl^-) **	SMWW 4500 Cl^- B	< 250 mg/L	11	± 1.26	Optimal
Chromium (Cr)	SMWW 3113 B	≤ 0.05 mg/L	<0.004	N.A.	Optimal
Copper (Cu)	SMWW 3111 B	2.0 mg/L	0.165	N.A.	Optimal
Cyanide (CN^-)*	SMWW 4500 CN^- F	≤ 0.05 mg/L	0	N.A.	Optimal
Fluoride (F^-)**	SMWW 4500 F^- D	≤ 1.5 mg/L	1.84	± 0.61	Optimal
Lead (Pb)	SMWW 3114 B	≤ 0.05 mg/L	<0.005	N.A.	Optimal
Manganese (Mn)	SMWW 3113 B	≤ 0.5 mg/l	0.015	N.A.	Optimal
Mercury (Hg)	SMWW 3114 B	≤ 0.001 mg/L	<0.001	N.A.	Optimal
Nickel (Ni)	SMWW 3113 B	≤0.02 mg/L	<0.02	N.A.	Optimal
Nitrate (NO_3^-) *	SMWW 4500 NO_3^- B	≤ 50 mg/L	0	N.A.	Optimal
Nitrite (NO_2^-) *	SMWW 4500 NO_2^- B	≤ 3.0 mg/L	0.33	N.A.	Optimal
Selenium (Se)	SMWW 3114 B	0.01 mg/L	<0.01	N.A.	Optimal
Residual Chlorine (Cl_2) *	SMWW 4500 Cl^- B	0.5 mg/L	0	N.A.	Optimal

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05-01-2023

Document No. AES/LMS/FRM-115, Date of Issue 07 July, 2022, Revision No. 00

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GROUND WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-ENV-HX-22/2022-GW-56	**Reporting Date**	05-01-2023
Nature of Sample	Ground Water	**Sampling Method Reference**	AES/LMS/QSP-014
Grab/Composite	Grab	**Sample Collected by/Sent By**	AES
Sampling Date	27-12-2022	**Sample Receiving Date**	29-12-2022
Analysis Completion Date	05-01-2023	**Lab Temp & Humidity**	25.1°C & 50 %
Ambient Temperature & Humidity at the Time of Sampling			14°C & 66%
Sample ID	AES-ENV-GW-56/2022	**Sampling Location**	Basin Outlet.
Clint Details	Hextar Industries Pvt. Ltd., Lahore.	**Validation Officer**	Mr. Nadeem

Ground Water Analysis Results

Parameter	Analysis Method	PEQS	Result	MU (CL95%)	Remarks
Phenolic Compounds (as Phenols) *	SMWW 5530 D	NGVS	0	N.A.	Optimal
Zinc (Zn)	SMWW 3113 B	5.0 mg/L	0.032	N.A.	Optimal
Microbiological Analysis					
Total Coliforms*	SMWW 9222 B	0 CFU/ 100 mL	0	N.A.	Optimal
Fecal Coliforms *	SMWW 9222 D	0 CFU/ 100 mL	0	N.A.	Optimal

*Parameters are approved from Punjab Environment Protection Agency.
**Parameters are accredited from Pakistan National Accreditation Council.
The reported expanded uncertainty is based on combined standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%.

Abbreviations:
PEQS = Punjab Environment Quality Standards
TCU = True Color Unit
NTU = Nephlometric Turbidity Unit
SMWW = Standard Methods for the examination of Water and Wastewater
N.A. = Not Available
MU = Measurement Uncertainty
CFU = Colony forming Unit
NGVS = No Guideline Value Set

Remarks:
Optimal = Compliance with Permissible Range
Low = Less Than Permissible Range
Marginal = Close to Extreme Edge
High = Exceeds from Permissible Range

Report Disclaimer
- The remaining portion of the sample (s) will be disposed off after 15 days after the issuance date of report from the laboratory unless otherwise instructed (Condition Apply).
- This report shall not be reproduced in part/parties.
- The provided results relate only to the sample provided/collected.
- Values reflect the testing results; decision for usage of report totally dependent on client.

Analyzed By 05-01-23
Reviewed By (TM) 05-01-2023
Approved By (QM) 05/01/2023

Asian Environmental Services (Pvt) Ltd LAHORE

----------End of Report----------

Page 2 of 2

Document No. AES/LMS/FRM-115 Date of Issue 07 July, 2022, Revision No. 00

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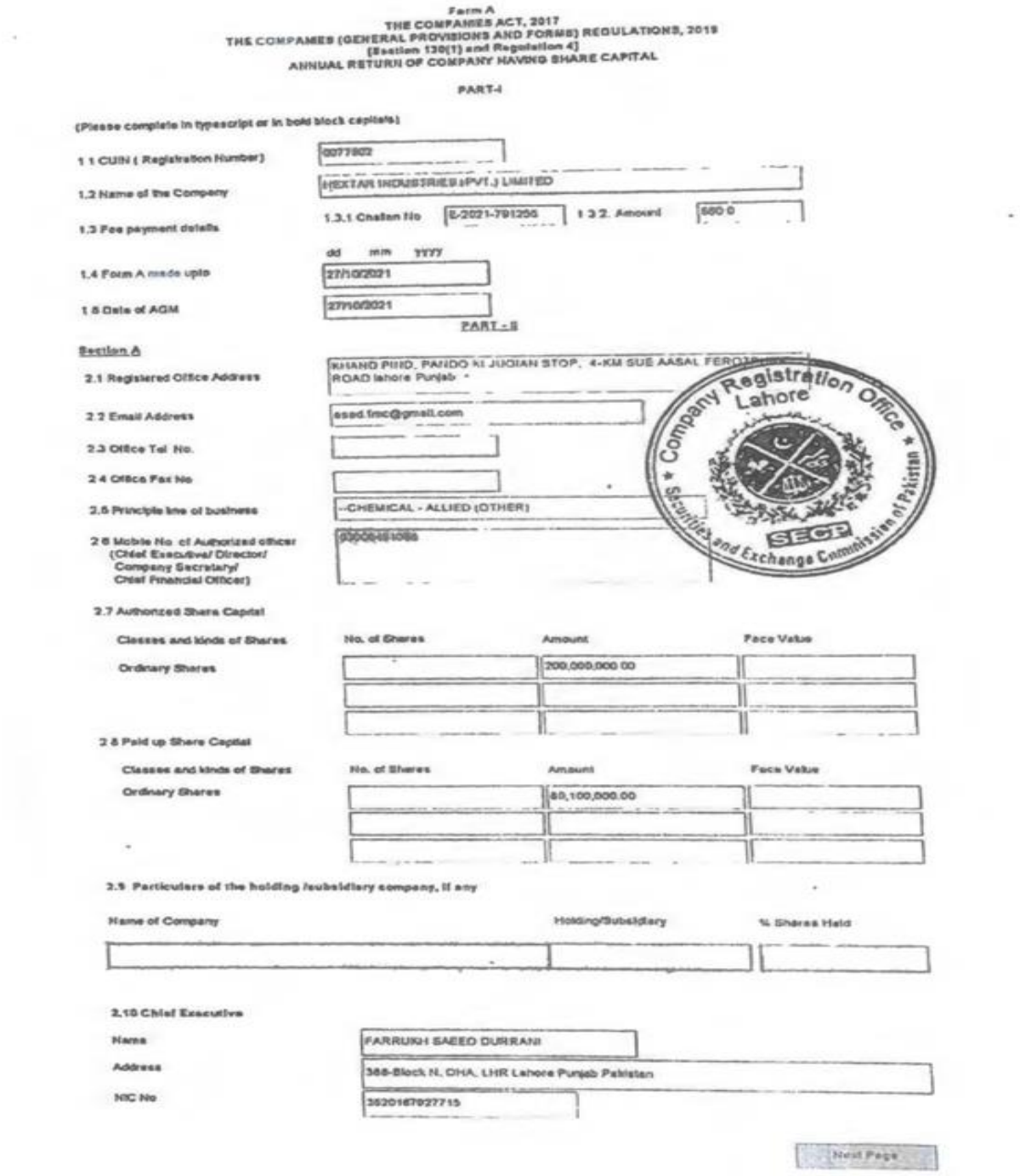
Email: info@asianenvirolab.com

ANNEXURE - I: FORM 29



Form A
THE COMPANIES ACT, 2017
THE COMPANIES (GENERAL PROVISIONS AND FORMS) REGULATIONS, 2018
[Section 130(1) and Regulation 4]
ANNUAL RETURN OF COMPANY HAVING SHARE CAPITAL

PART-I

(Please complete in typescript or in bold block capitals)

1.1 CUIN (Registration Number) 0077802

1.2 Name of the Company (HEXTAR INDUSTRIES (PVT.) LIMITED

1.3 Fee payment details 1.3.1 Challan No E-2021-791256 1.3.2. Amount 600.0

dd mm yyyy

1.4 Form A made upto 27/10/2021

1.5 Date of AGM 27/10/2021

PART - II

Section A

2.1 Registered Office Address KHAND PIND, PANDO KI JUDIAN STOP, 4-KM SUE AASAL FEROZ... ROAD lahore Punjab

2.2 Email Address asad.fmc@gmail.com

2.3 Office Tel No.

2.4 Office Fax No

2.5 Principle line of business --CHEMICAL - ALLIED (OTHER)

2.6 Mobile No of Authorized officer (Chief Executive/ Director/ Company Secretary/ Chief Financial Officer)

2.7 Authorized Share Capital

Classes and kinds of Shares	No. of Shares	Amount	Face Value
Ordinary Shares		200,000,000.00	

2.8 Paid up Share Capital

Classes and kinds of Shares	No. of Shares	Amount	Face Value
Ordinary Shares		80,100,000.00	

2.9 Particulars of the holding /subsidiary company, if any

Name of Company	Holding/Subsidiary	% Shares Held

2.10 Chief Executive

Name FARRUKH SAEED DURRANI

Address 388-Block N, DHA, LHR Lahore Punjab Pakistan

NIC No 3520167927715

Company Registration Office Lahore * Securities and Exchange Commission of Pakistan * SECP

Next Page

2.11 Chief Financial Officer

Name	FARRUKH SAEED DURANI
Address	388-BLOCK N, DHA, LAHORE.
NIC No	3520167927715

2.12 Secretary

Name	FARRUKH SAEED DURANI
Address	388-BLOCK N, DHA, LAHORE
NIC No	3520167927715

2.13 Legal Advisor

Name	MUHAMMAD RIAZ
Address	Office # 7, 2nd Floor Rana Sana Ullah Building, 6-Fane Road, Lahore
NIC No	

2.14 Particulars of Auditors

Name	TALIB HUSSAIN AND CO
Address	252-D, OPP HOUSING SCHEME, RAIWIND ROAD, LAHORE

Company Registration Office Lahore — Securities and Exchange Commission of Pakistan — SECP

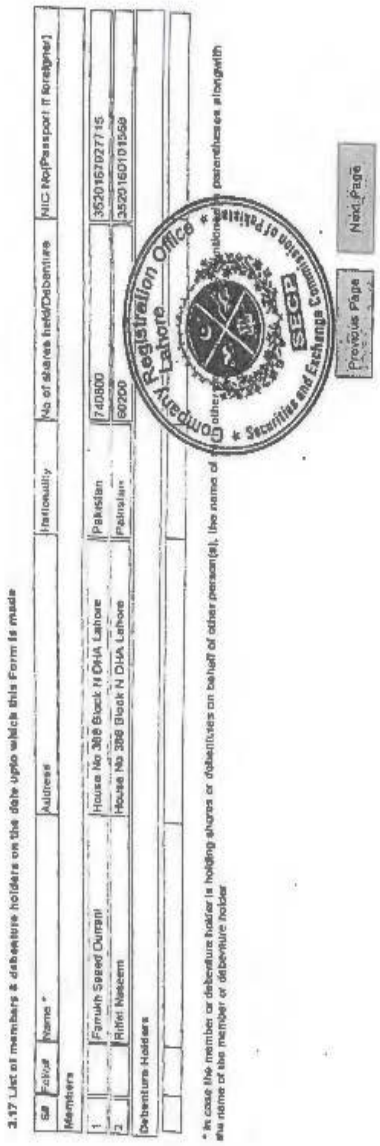
2.15 Particulars of Shares Registrar (if applicable)

Name	
Address	
Email	

Section-B

2.16 List of Directors on the date Annual return is made

Sr	Name of Director	Residential Address	Nationality	NIC (Passport No if foreigner)	Date of appointment or election
1	FARRUKH SAEED DURRANI	388-Block N DHA, LHR Lahore Punjab Pakistan	Pakistan	3520167927715	27/10/2021
2	RIFFAT NASEEM	388-Block N, DHA, LHR Lahore Punjab Pakistan	Pakistan	3520160101568	27/10/2021



3.17 List of members & debenture holders on the date upto which this Form is made

Sr#	Folio#	Name *	Address	Nationality	No of shares held/Debenture	NIC No(Passport # for foreigner)
Members						
1		Farrukh Saeed Durrani	House No 388 Block N DHA Lahore	Pakistan	740800	3520167027715
2		Rifat Nasem	House No 388 Block N DHA Lahore	Pakistan	60200	3520116010569
Debenture Holders						

Company Registration Office Lahore
Securities and Exchange Commission of Pakistan
SECP

Previous Page
Next Page

* In case the member or debenture holder is holding shares or debentures on behalf of other person(s), the name of the name of the member or debenture holder

2.18 Transfer of shares (debentures) since last Form A was made

S#	Name of Transferor	Name of Transferee	No of Shares Transferred	Date of Registration of transfer
Members				
Debenture Holders				

Company Registration Office Lahore
Securities and Exchange Commission of Pakistan
SECP

PART-3

3.1 Declaration:
I do hereby solemnly, and sincerely declare that the information provided in the form is:
(i) true and correct to the best of my knowledge, in consonance with the record as maintained by the Company and nothing has been concealed; and
(ii) hereby reported after complying with and fulfilling all requirements under the relevant provisions of law, rules, regulations, directives, circulars and notifications whichever is applicable.

3.2 Name of Authorized Officer with designation/ Authorized Intermediary	FARRUKH SAEED DURRANI	Chief Executive
3.3 Signatures	Electronically signed by FARRUKH SAEED DURRANI	
3.4 Registration No of Authorized Intermediary, if applicable		
3.5 Date	Day Month Year 10/11/2021	

CERTIFIED TO BE TRUE COPY
ADDITIONAL JOINT REGISTRAR OF COMPANIES
COMPANY REGISTRATION OFFICE
LAHORE.

Previous Page Next Page

THE COMPANIES ACT, 2017
THE COMPANIES (GENERAL PROVISIONS AND FORMS) REGULATIONS, 2018
(Section 197 and Regulations 4 and 20)
PARTICULARS OF DIRECTORS AND OFFICERS, INCLUDING THE CHIEF EXECUTIVE, SECRETARY, CHIEF FINANCIAL OFFICER, AUDITORS AND LEGAL ADVISER OR OF ANY CHANGE THEREIN

FORM 29

PART-I

1.1 CUIN (Incorporation Number) 0077802
1.2 Name of Company HEXTAR INDUSTRIES (PVT.) LIMITED
1.3 Fee Payment Details
1.3.1 Challan Number E-2021-791265 1.3.2 Amount 650.0

Company Registration Office Lahore Securities & Exchange Commission of Pakistan

PART-II

2. Particulars*:
2.1 New Appointment/Election

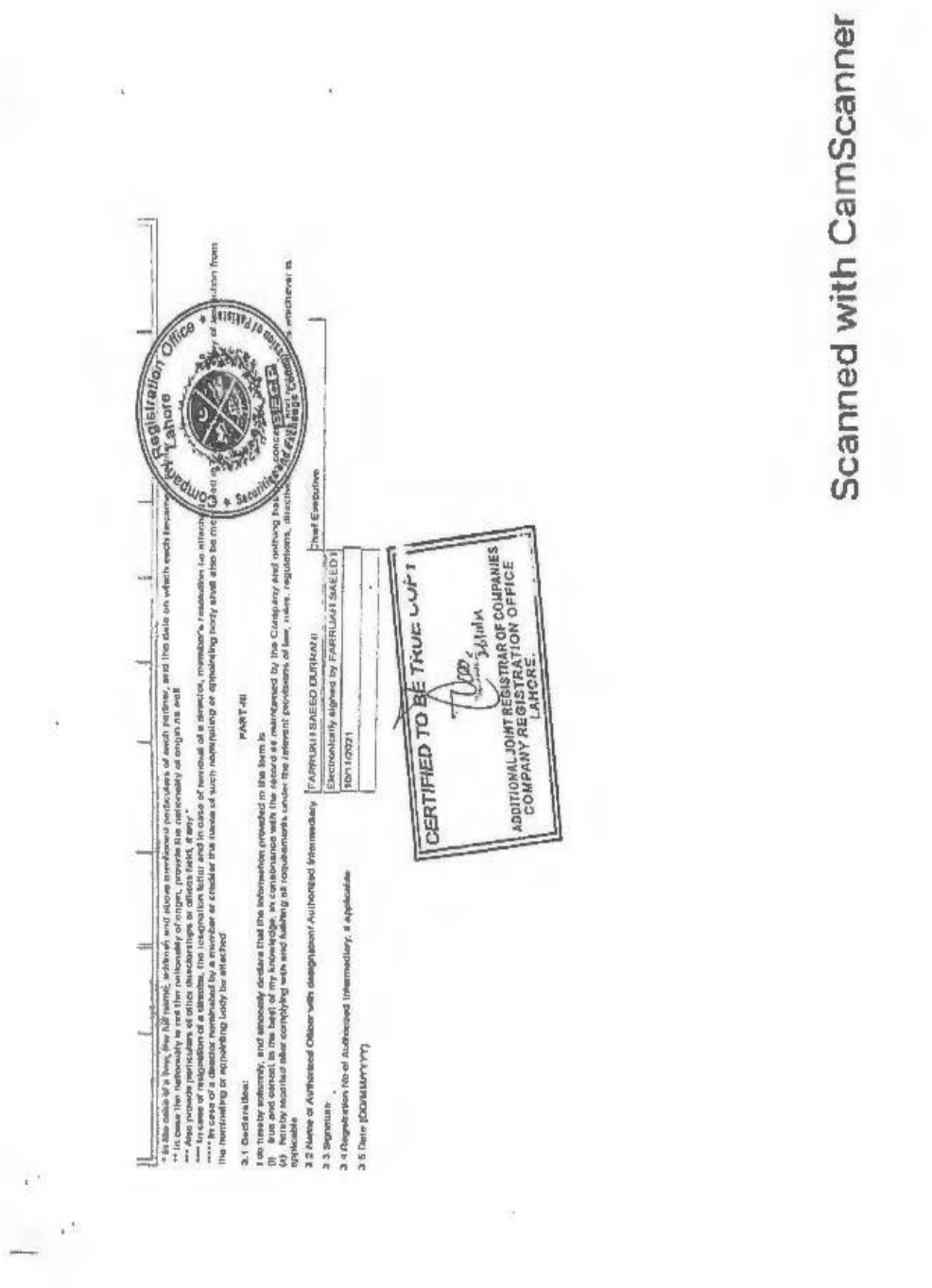
Present Name in Full (a)	NIC No. or Passport No. in case of Foreign National (b)	Father / Husband Name (c)	Usual Residential Address (d)	Designation (e)	Nationality** (f)	Business Occupation** * (if any) (g)	Date of Present Appointment or Change (h)	Mode of Appointment / change / any other remarks (i)	Nature of directorship (nominee/independent/additional/ other) (j)
FARRUKH SAEED DURRANI	3520167927715	SHAHZADA ABDUL RAUF DURRANI	368-Block N, DHA, LHR Lahore Punjab Pakistan	Chief Executive	Pakistan		27/10/2021	Re-Appointment /	
FARRUKH SAEED DURRANI	3520167927715	SHAHZADA ABDUL RAUF DURRANI	368-Block N, DHA, LHR Lahore Punjab Pakistan	Director	Pakistan		27/10/2021	Re-Elected /	
RIFFAT NASEEM	3520180101562	FARRUKH SAEED DURRANI	368-Block N, DHA, LHR Lahore Punjab Pakistan	Director	Pakistan		27/10/2021	Re-Elected /	
TALIB HUSSAIN AND CO			252-D, OPF HOUSING SCHEME, RAIWIND ROAD, LAHORE	Auditor			27/10/2021	Re-Appointment /	

2.2 Ceasing of Office/Retirement/Resignation

Present Name in Full (a)	NIC No. or Passport No. in case of Foreign National (b)	Father / Husband Name (c)	Usual Residential Address (d)	Designation (e)	Nationality** (f)	Business Occupation** * (if any) (g)	Date of Present Appointment or Change (h)	Mode of Appointment / change / any other remarks (i)	Nature of directorship (nominee/independent/additional/ other) (j)

2.3 Any other change in particulars relating to columns (a) to (g) above

Present Name in Full (a)	NIC No. or Passport No. in case of Foreign National (b)	Father / Husband Name (c)	Usual Residential Address (d)	Designation (e)	Nationality** (f)	Business Occupation** * (if any) (g)	Date of Present Appointment or Change (h)	Mode of Appointment / change / any other remarks (i)	Nature of directorship (nominee/independent/additional/ other)


Scanned with CamScanner
Company Registration Office Lahore
SECP
CERTIFIED TO BE TRUE COPY
ADDITIONAL JOINT REGISTRAR OF COMPANIES
COMPANY REGISTRATION OFFICE
LAHORE.

ANNEXURE - J: WASTE MANAGEMENT AGREEMENT

A.T WASTE MANAGEMENT

We Manage

AGREEMENT
For
Provision of Hazardous/Bio-Infectious Waste Disposal Services

By **"A.T Waste Management"** having its office at Office No. 731, Block-2, Sector D-1, Shah Jilani Road, Township, Lahore, **NTN# 7383959-8,** (here in after called **ATWM),** to the **HEXTAR INDUSTRIES (PVT) LTD** having its office at **Khand Pind, Pando Ki Jugian Stop, 4-Km Sue Asal, Feroz Pur Road, Lahore.** (here in after called **RECEIVER)**

THIS HAZARDOUS/BIO-INFECTIOUS WASTE DISPOSAL "AGREEMENT" made and entered into this 01st day of October, 2022 (the "Effective Date"), and is made by and between the **RECEIVER** and the **ATWM.**

WHEREAS the RECEIVER desires to obtain the services of **ATWM**, for the disposal of HAZARDOUS/BIO-INFECTIOUS WASTE and **ATWM** desires to render such services on the terms and conditions set forth.

IN CONSIDERATION of the promises and other good and valuable consideration (the sufficiency and receipt of which are hereby acknowledged) the parties agree as follows:

1. **Specification of Waste:**
   a) Acceptable Waste - The following types of waste are acceptable for disposal under this AGREEMENT:
      - Hazardous/Bio-Infectious Waste.
   b) Unacceptable Waste: The following types of waste are unacceptable for disposal under this AGREEMENT
      - General Waste i.e. floor cleaning etc. (except agreed specifically)

2. **Operational Schedule.** The parties agree to develop and implement an operational schedule that will allow collection of Acceptable Waste from the vicinity of **RECEIVER** consistent with Operations Plan, Monday through Saturday, public holidays excepted.

3. **Force Majeure.** No party shall be liable for any failure to perform its obligations under this AGREEMENT where such failure is as a result of Acts of God (including fire, flood, earthquake, storm, typhoon or other natural disaster), war, invasion, act of foreign enemies, hostilities (whether war is declared or not), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation, terrorist activities, nationalization, government sanction, blockage, labor dispute, strike, lockout or interruption or failure of electricity, and no party will have a right to terminate this AGREEMENT in such circumstances.

4. **Severability.** The parties hereto agree that in the event any article or part thereof of this agreement is held to be unenforceable or invalid then said article or part shall be struck and all remaining provision shall remain in full force and effect.

Receiver

ATWM

Office No. 731, Block-2, Sector: D-1, Shah Jilani Road, Township, Lahore, Pakistan 54770, Tel: +92 42 3515 4012-14 Fax: +92 42 3515 4017
Email: info@atwm.com.pk Web: www.atwm.com.pk

A.T WASTE MANAGEMENT

We Manage

5. **Compliance.** In performing this Agreement, each party shall ensure compliance with all applicable laws, rules and regulations. Both parties shall not be required to perform or omit to perform any act under this agreement if such performance or omission would violate the provisions of its code of conduct, applicable law, rules and regulations, applicable for the time being.

6. Charges.

   ATWM shall provide the Services of hazardous/Bio-Infectious waste disposal at the prices stated below;

   a) **Incineration Charges. Rs 17,000/- Per Month (On must to pay basis with single trip in a month with weight limit upto 500/- Kg)**
   b) **Transportation Charges (More than one trip) Rs 5000/- Per Trip**
   c) **Security Fee refundable at the end of agreement. (Previous Year) Rs 10,000/-**

- These rates are (**Exclusive**) of all applicable taxes.
- Payment due date will be the 15th of every month.
- The services will be discontinued immediately, without any prior notice, due to non-payment of continuous two months. And no deduction will be allowed, against the days when the service was discontinued due to nonpayment.

7. General Conditions.

   a) This agreement is valid from **01-10-2022** to **30-09-2023.**
   b) Loading at the **RECEIVER**'s place will be the responsibility of **RECEIVER.** And Off-Loading at the plant will be ATWM's responsibility.
   c) **ATWM** will furnish the safe disposal certificate to the **RECEIVER** per consignment after receiving of payment.
   d) If certification status of **ATWM** from EPA is changed at any instant, **ATWM** will be responsible to intimate the **RECEIVER** immediately.
   e) The **RECEIVER** shall depute an individual (bio data will be provided to **ATWM**) who at all times supervise and inspect the concerned staff to promptly resolve safe management of said wastes. The **RECEIVER** will do the needful to ensure that no legal implications proceeding if any shall lie against the **ATWM**.
   f) At the renewal of the contract **ATWM** reserves the right to alter the charges taking into consideration the increase in Taxation, volume of waste and all other expenditures.
   g) In case the **RECEIVER** faces any problem, regarding collection of waste by **ATWM**'s labor etc. it should be immediately communicated to the Waste Manager/Project Manager of **ATWM**, so that the problem can be resolved on priority bases.

Receiver

ATWM

Office No. 731, Block-2, Sector: D-1, Shah Jilani Road, Township, Lahore, Pakistan 54770, Tel: +92 42 3515 4012-14 Fax: +92 42 3515 4017
Email: info@atwm.com.pk Web: www.atwm.com.pk

A.T WASTE MANAGEMENT

We Manage

8. **Termination of Agreement.**
   - This agreement will be terminated after the valid date mentioned in clause 7(a) except specifically extended.
   - In case the **RECEIVER** wants to terminate the agreement/services, **RECEIVER** will have to give **ATWM** a one-month prior notice and will return the agreement of **ATWM** back to **ATWM**.
   - Agreement will be terminated if waste transaction is not made within three consecutive months.
   - Both parties are liable to follow EPA's rules and regulations. Any kind of violation will cause termination of the contract.

IN WITNESS WHEREOF, the parties hereto have executed this AGREEMENT by their duly authorized representatives, as of the day and year first above written.

Signature:		**Signature:**	
Name:	Mr. Muhammad Irfan	**Name:**	Mr. Tahir Mahmood
For:	HEXTAR INDUSTRIES (PVT) LTD.	**For:**	A.T WASTE MANAGEMENT
Address:	Khand Pind, Pando Ki Jugian Stop, 4-Km Sue Asal, Feroz Pur Road, Lahore.	**Address:**	Office # 731, Block-2, Sector D-1 Shah Jilani Road, Township Lahore.
Tel:	0300-0802709	**Tel:**	042-35154012-16/0300-5431903
Date:	01st October, 2022	**Date:**	01st October, 2022
Witness # 1:		**Witness # 1:**	Ayesha Akbar

Office No. 731, Block-2, Sector: D-1, Shah Jilani Road, Township, Lahore.
Pakistan 54770, Tel: +92 42 3515 4012-14 Fax: +92 42 3515 4017
Email: info@atwm.com.pk Web: www.atwm.com.pk

ANNEXURE - K: SOCIO ECONOMIC SURVEY

Public Consultation/ Stakeholder Participation regarding EIA of Hextar Industries Pvt. Ltd.

Name:					
Residence:					
Age:					
Gender: ☐ ☐					
Qualification:					
Profession:					
REMARKS					
	Strongly Agree	**Agree**	**No Comments**	**Disagree**	**Strongly Disagree**
Are you in favor of the proposed construction?	☐	☐	☐	☐	☐
Will the project increase the importance of the area?	☐	☐	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☐	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☐	☐
Level of satisfaction?	☐	☐	☐	☐	☐

Signature of Interviewer

List of Participants in the survey

Sr. No.	Name	Age	Residence	Qualification	Profession
1.	Muzammil Hussain	32	Sue Asal	Graduate	Technician
2.	Asim Jahanzaib	30	Ferozepur road	Bachelor	Employee
3.	Abrar Alam	29	Sue Asal	Primary	Worker
4.	Kasim	20	Sue Asal	Matric	Worker
5.	Qaiser Ali	28	Ferozepur road	Bachelor	Employee
6.	Fuzail Hanif	25	Sue Asal	MBBS	Doctor
7.	Ahsan Farooq	22	Ferozepur road	Intermediate	Laborer
8.	Fahim Akbar	25	Sue Asal	Bachelor	Employee
9.	Nazim Aleem	35	Ferozepur road	Graduate	Electrician
10.	Ahmad Mushtaq	41	Sue Asal	Intermediate	Property dealer
11.	Munim Akbar	45	Ferozepur road	Illiterate	Farmer
12.	Abdul Rehman	36	Sue Asal	Matric	Carpenter
13.	Rahbar Azeem	30	Ferozepur Road	MBBS	Doctor
14.	Taksim Azam	25	Sue Asal	Graduate	Student
15.	Adil Javed	29	Ferozepur Road	Matric	Shop Owner
16.	Sameeh	48	Sue Asal	Masters	Employee
17.	Shakir Javed	55	Ferozepur Road	Nil	Farmer
18.	Kaleem Ahsan	32	Sue Asal	Intermediate	Cashier
19.	Shahrukh	40	Ferozepur Road	Intermediate	businessman
20.	Fareed Sajad	28	Sue Asal	Nil	Farmer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Kaleem Ansar

Residence: Sue Asal

Age: 32

Gender: ☑ M ☐ F

Qualification: Intermediate

Profession: Cashier

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☐	☐	☑	☐
Will the project increase the importance of the area?	☐	☐	☑	☐	☐
Will the project help to improve the living standards of the area?	☐	☐	☐	☑	☐
Will the project affect the environment of the area?	☐	☐	☑	☐	☐
Level of satisfaction?	☐	☐	☐	☑	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Shakil Javed

Residence: Ferozpur Road

Age: 55

Gender: [M] [F]

Qualification: Nil

Profession: Farmer

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?		☑	☐	☐	☐
Will the project increase the importance of the area?		☑	☐	☐	☐
Will the project help to improve the living standards of the area?		☐	☐	☑	☐
Will the project affect the environment of the area?		☑	☐	☐	☐
Level of satisfaction?		☐	☐	☑	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Sameeh

Residence: Sue Asal

Age: 48

Gender: ☑ M ☐ F

Qualification: Masters

Profession: Employee

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☐	☐	☐	☑
Will the project increase the importance of the area?	☐	☐	☐	☐	☑
Will the project help to improve the living standards of the area?	☐	☐	☐	☐	☑
Will the project affect the environment of the area?	☑	☐	☐	☐	☐
Level of satisfaction?	☐	☐	☐	☑	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Adil Javed

Residence: Ferozpur Road

Age: 29

Gender: [M] [F]

Qualification: Matric

Profession: Shop owner

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☑	☐	☐	☐	☐
Will the project increase the importance of the area?	☐	☑	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☑	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☐	☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Taksim Azam

Residence: Sue Asal

Age: 25 Yo

Gender: [✓M] [F]

Qualification: Graduate

Profession: Student

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☑	☐	☐	☐
Will the project increase the importance of the area?	☐	☑	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☑	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☐	☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Rahban Azeem

Residence: Ferozpur Road

Age: 30

Gender: ☑ M ☐ F

Qualification: MBBS

Profession: Doctor

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☑	☐	☐	☐	☐
Will the project increase the importance of the area?	☑	☐	☐	☐	☐
Will the project help to improve the living standards of the area?	☑	☐	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☐	☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Abdul Rehman

Residence: Sue Asal

Age: 36

Gender: [M] [F]

Qualification: Matric

Profession: Carpenter

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☑	☐	☐	☐
Will the project increase the importance of the area?	☐	☑	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☑	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☐	☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Munim Akbar

Residence: Ferozpur Road

Age: 45

Gender: ☑ M ☐ F

Qualification: Illiterate

Profession: Farmer

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☑	☐	☐	☐	☐
Will the project increase the importance of the area?	☐	☑	☐	☐	☐
Will the project help to improve the living standards of the area?	☑	☐	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☐	☑
Level of satisfaction?	☐	☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Ahmad Mushtaq

Residence: Sue Asal

Age: 41

Gender: ☑ M ☐ F

Qualification: Intermediate

Profession: Property Dealer

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☑	☐	☐	☐
Will the project increase the importance of the area?	☐	☑	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☑	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☐	☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Nazim Aleem

Residence: Ferozpur Road

Age: 35

Gender: ☒ M ☐ F

Qualification: Graduate

Profession: Electrician

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☑	☐	☐	☐	☐
Will the project increase the importance of the area?	☐	☑	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☑	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☐	☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Fahim Akbar

Residence: Sue Asal

Age: 25

Gender: [M] [F]

Qualification: Bacholors

Profession: Employee

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☐	☐	☐	☐
Will the project increase the importance of the area?	☐	☐	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☐	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☐	☐
Level of satisfaction?	☐	☐	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Ahsan Farooq

Residence: Ferozpur Road

Age: 22

Gender: [M] [F]

Qualification: Intermediate

Profession: Labourer

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?		☑	☐	☐	☐
Will the project increase the importance of the area?		☑	☐	☐	☐
Will the project help to improve the living standards of the area?		☑	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?		☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Fuzail Hanif

Residence: Sue Asal

Age: 25

Gender: [M] [F]

Qualification: Doctor

Profession: MBBS

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?		☑	☐	☐	☐
Will the project increase the importance of the area?		☑	☐	☐	☐
Will the project help to improve the living standards of the area?		☑	☐	☐	☐
Will the project affect the environment of the area?		☐	☐	☑	☐
Level of satisfaction?		☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Qaiser Ali

Residence: Ferozpur Road

Age: 28

Gender: [M] [F]

Qualification: Bachelors

Profession: Employee

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☑	☐	☐	☐
Will the project increase the importance of the area?	☐	☑	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☑	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☐	☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Kasim

Residence: Sue Asal

Age: 20

Gender: [M] [F]

Qualification: Matric

Profession: Worker

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☑	☐	☐	☐
Will the project increase the importance of the area?	☐	☑	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☑	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☐	☑	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Abrar Alam

Residence: Sue Asal

Age: 29

Gender: [✓] M [ ] F

Qualification: Primary

Profession: Worker

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☑	☐	☐	☐	☐
Will the project increase the importance of the area?	☑	☐	☐	☐	☐
Will the project help to improve the living standards of the area?	☑	☐	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☑	☐	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Asim Jahanzaib

Residence: Ferozpur Road

Age: 30

Gender: ☑ M ☐ F

Qualification: Bachelors

Profession: Employee

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☑	☐	☐	☐	☐
Will the project increase the importance of the area?	☑	☐	☐	☐	☐
Will the project help to improve the living standards of the area?	☑	☐	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☑	☐
Level of satisfaction?	☑	☐	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Muzamil Hussain

Residence: Sue Asal

Age: 32

Gender: [M] [F]

Qualification: Graduate

Profession: Technician

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☑	☐	☐	☐
Will the project increase the importance of the area?	☐	☑	☐	☐	☐
Will the project help to improve the living standards of the area?	☐	☑	☐	☐	☐
Will the project affect the environment of the area?	☐	☐	☐	☐	☑
Level of satisfaction?	☑	☐	☐	☐	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Fareed Sajid

Residence: Sue Asal

Age: 28

Gender: [✓] M [ ] F

Qualification: Nil

Profession: Farmer

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☐	☐	☑	☐
Will the project increase the importance of the area?	☐	☐	☐	☑	☐
Will the project help to improve the living standards of the area?	☐	☐	☐	☑	☐
Will the project affect the environment of the area?	☑	☐	☐	☐	☐
Level of satisfaction?	☐	☐	☐	☑	☐

Signature of Interviewer

Public Consultation/ Stakeholder Participation regarding EIA

Of

Hextar Industries Pvt. Ltd.

Name: Shahzaib

Residence: Ferozpur Road

Age: 40

Gender: [✓] M [ ] F

Qualification: Intermediate

Profession: Businessman

REMARKS

	Strongly Agree	Agree	No Comments	Disagree	Strongly Disagree
Are you in favor of the proposed construction?	☐	☐	☐	☑	☐
Will the project increase the importance of the area?	☐	☐	☐	☑	☐
Will the project help to improve the living standards of the area?	☐	☐	☐	☑	☐
Will the project affect the environment of the area?	☐	☑	☐	☐	☐
Level of satisfaction?	☐	☐	☐	☑	☐

Signature of Interviewer