



ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

Pharma Lord (Pvt.) Ltd

(CONSRUCTION OF PHARMACEUTICAL MANUFACTURING FACILITY)

12-KM LAHORE ROAD LAYYAH

December, 2023



Environmental Services Pakistan Pvt Ltd. (ESPAK)

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LIST OF ABBREVIATIONS

PEPA	Punjab Environmental Protection Act
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

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EXECUTIVE SUMMARY

Introduction

The executive summary presents an overview of the main findings of Environmental Impact Assessment (EIA) report for the Construction of Pharmaceutical facility of Pharma Lord (Pvt.) Ltd located at 12-KM Lahore Road Layyah.

Pharma Lord is a leading pharmaceutical manufacturing company based in Pakistan Head Quator in London. The company is dedicated to producing high-quality, affordable medicines for the local and international market. With a focus on research and development, Pharma Lord is committed to innovation and continuously improving its products and processes. Pharma Lord offers a wide range of products, including prescription drugs, over-the-counter medicines, and dietary supplements.

The company's portfolio covers a broad spectrum of therapeutic areas, including cardiovascular diseases, diabetes, gastrointestinal disorders, respiratory illnesses, and many others. The company's state-of-the-art manufacturing facilities are designed to meet international standards and are equipped with the latest technology and equipment. Pharma Lord employs highly skilled professionals who work tirelessly to ensure that all products are manufactured to the highest standards of quality and safety. We provide all facilities of product development, right start from product designing to make it available on the shelf under one roof.

M/S Environmental Services Pakistan Pvt. Ltd. has been engaged for conducting Environmental Impact Assessment (EIA) of Pharma Manufacturing unit of Pharma Lord (Pvt.) Ltd.

The main objectives of this EIA are to establish baseline environmental conditions, identify potential impacts and suggest suitable mitigation measures for the execution of the said project. This study has been accomplished in line with the provisions – guidelines and directives of Punjab Environmental Protection Agency. This executive summary presents an overview of the main findings of the EIA Report for the aforesaid project of Pharma Lord (Pvt.) Ltd.

Project Title and Location

The Project is entitled as “Pharma Lord (Pvt.) Ltd.” at 12-KM Lahore Road Layyah.

OVERVIEW OF PROPOSED PROJECT

The Project “Establishment of Pharmaceutical unit under the Name of Pharma Lord (Pvt.) Lt at 12-KM Lahore Road Layyah” within the boundary of land that already owned by Proponent. The Project will occupy 05 Kanals and having the cost of 50 million.

Brief Outline

Name of Project	Pharma Lord (Pvt.) Limited
Location of project	12-KM Lahore Road Layyah
Purpose of the Project	– To manufacture good quality of products – To contribute towards company development of the country and enhance the growth of economy – To meet the growing demand of supreme quality of products in the country – Create job opportunities for the local people, definitely – To upgrade the socio-economic conditions of the area
Production Capacity	
Tablets	100,000 Tablets/Day
Capsules	100,000 Capsules/Day
Dry Powder Suspensions	25,000 Bottles/Day
Syrups	25,000 Bottles/Day
Sachets	40,000 Sachet per day
Land Requirement	
Proposed area	Total area of the unit is 05 Kanals
Waste Handling (Operational Phase)	
Wastewater	The sewage will first be discharged into the septic tank where necessary treatment will be done before its disposal
Amount of Water consumption	Water consumption during different purposes like process, drinking, domestic and gardening will take place.
Source of waste water	Process and Domestic Waste
Mode of treatment	Septic Tanks
Solid Waste	
Source of solid waste generation	Solid waste generated in the form of plastics, boxes, papers, lab waste glass and metals
Mode of disposal	Construction waste will be reuse. Domestic waste will be handed over to local contractors.

Solid waste during operation of unit	Waste only from offices and Process.
Manpower	
Labor Force	About 50 persons during operations
Power requirements	
Source of power	Power requirements at the project site will be fulfilled by generator (200 KVA Perkins)

Project Proponent

Mr. Asim Mehmood, project proponent, is intended to obtain Environmental Approval 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	Asim Mehmood
CNIC	32202-2068769-9
Cell Number	0307-7847786
Mailing Address	TDA Colony Asim Mehmood Laaj, Layyah

TORs of the study between Proponent & Consultant under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as ANNEXURE-A.

The EIA Study Consultant

Environmental Services Pakistan (ESPAK), an independent consultant, has been appointed by the proponent to conduct Environmental Impact Assessment (EIA).

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For the detail company profile see the *Chapter # 1 "Introduction"*

Positioning of the Project

According to the IEE and EIA Regulations, 2022 the Project falls under **Schedule II-B-2** (Chemical manufacturing units, including pharmaceuticals and cosmetic).

Location

Land coordinates are given below:

North.....Residential Colony

South.....Owner land Of Mr. Tanveer

East..... Public Road

West..... Owner Land

For further details, layout of the project is attached as Annexure-B, Google earth map and aerial view of the project site.



Figure 0-1: Google Map of Project Site

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**

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

– **Noise**

Regular 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**

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

Schedules of Proposed Monitoring:

Sr. No.	Components	Parameters	Frequency	Responsibility
			Operation	
1	Ambient Air Quality	(NO ₂ , NO, CO, SO ₂ , O ₃ , PM ₁₀ PM _{2.5} , SPM)	Quarterly	HSE Officer
2	Noise	Noise Level dB(A) Survey	Quarterly	HSE Officer
3	Wastewater Effluent	Parameters as PEQS	Quarterly	HSE Officer
4	Exhaust Emissions	CO, SO ₂ , NO _x , Particulates (PM ₁₀ , PM _{2.5})	Quarterly	HSE Officer
5	Oil/Fuel Spillage	Visual Inspection	Continuous	HSE Officer
6	Water Contamination	Drinking water PEQs, WHO Guidelines Parameters including Fecal Coliform	Quarterly	HSE Officer
7	Environment/Safety Audit	Environment Management Plan	Annual	HSE Officer
8	Managerial Plans	Close monitoring to assess compliance of construction	Regular Monitoring and Quarterly Audits	HSE Officer

		and operational activities under: – Waste Management Plan – Emergency Response Plan (drills) – Traffic Management Plan		
9	Water Conservation	Visual Inspection /wastages	Continuous	HSE Officer

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

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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 THE PROPOSED PROJECT

The Project is entitled as “Establishment of Pharma Lord (Pvt.) Ltd” at 12-KM Lahore Road Layyah

1.2 Overview Of Proposed Project

Table 0-1: Production Capacity of Proposed Unit

1.	Project Title	Pharma Lord (Pvt.) Ltd	
2.	Project Location	12-KM Lahore Road Layyah	
3.	Proponent	Mr. Asim Mehmood	
4.	Consultant	Environmental Services Pakistan (ESPAK)	
5.	Area of Project	05 Kanal	
6.	Type of Project	Pharmaceutical industry	
7.	Production Capacity	Tablets	100,000 Tablets/Day
		Capsules	100,000 Capsules/Day
		Dry Powder Suspensions	25,000 Bottles/Day
		Syrups	25,000 Bottles/Day
		Sachets	40,000 Sachet per day
8.	Location of project	30°58'8.87"N 71° 3'41.15"E	
9.	Cost of Project	50 million Approx.	
10.	Status of Project	Already Constructed	
11.	Source of Power	WAPDA + Standby Generator	

1.3 Purpose of the report

The proponent feels its social, moral and legal obligation to protect environment. It is in this context that the proponent initiated the process of gaining Environmental approval (NOC) from EPA Punjab. Accordingly, 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 2017) for obtaining No Objection Certificate (NOC) before starting the construction activity at 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 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.

1.4 Identification of the Project

According to the IEE and EIA Regulations, 2022 the Project falls under Schedule II, Section B-2 requiring to submit an EIA.

1.5 Identification of the Proponent

Mr. Asim Mehmood, project proponent, is intended to obtain Environmental Approval 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	Asim Mehmood
CNIC	32202-2068769-9
Cell Number	0307-7847786
Mailing Address	TDA Colony Asim Mehmood Laaj, Layyah

TORs of the study between Proponent & Consultant under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as ANNEXURE-A.

1.6 Details of Consultant

Environmental Services Pakistan (ESPAK) is an independent consultant, who has been appointed by the proponent to conduct Environmental Impact Assessment (EIA).

Company address is Office No. 731, Block 2, Sector D1, Shah Jilani Road, Township, Lahore, Pakistan

Contact: +9242 3515 4012-16, +92 312 084 9999

The current work has been carried out by the following professionals:



Table 0-2: Study Team and Qualification

Sr. No	Names	Designation	Qualification
1.	Abida Hussian	Senior Environmentalist	B.Sc. Environmental Engineering
2.	Ali Ramzan	Environmentalist	BS Environmental Science
3.	Engr. Nadeem Malik	Environmental Engineer	B.Sc. Environmental Engineering
4.	Irtaza Ahmed	Environmentalist	BS Environmental Science
5.	Shahzad Ahmad Khan	Business Development Manager	MBA Marketing

1.7 Brief Description of Project

1.7.1 Nature of Project

The project, for which this Environmental Impact Assessment (EIA) Study has been conducted, is the Construction of Pharmaceutical unit under the name of Pharma Lord (Pvt.) Ltd. By nature, the project is a Pharma manufacturing unit.

1.7.2 Area of the Project

The total area of the project is 05 Kanals.

1.7.3 Location

North.....Residential Colony

South.....Owner land Of Mr. Tanveer

East..... Public Road

West..... Owner Land

For further details, layout of the project is attached as Annexure-B, Google earth map and aerial view of the project site.

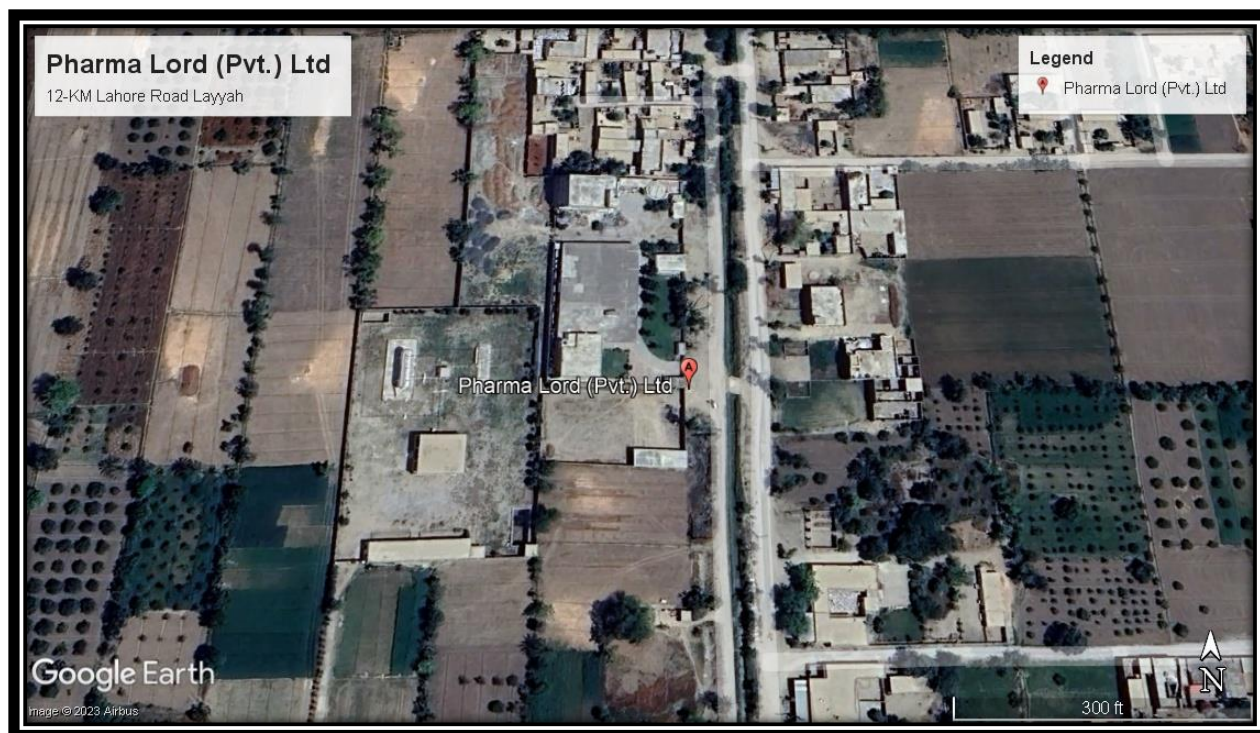


Figure 0-1: Google Map of Proposed Site

CHAPTER# 2. Screening and Scoping

2.1 Screening/ Type and Category of Project:

EIA is mandatory according to Section 12 clause (1) of the Pakistan Environmental Protection Act (PEPA, 1997) (Amended 2017) for all developmental interventions. As the project falls under Schedule II, Section B-2, Punjab Environmental Protection Agency's Review of EIA & EIA Regulations, 2022, the guidelines for the preparation and review of environmental reports, an Environmental Impact Assessment (EIA) of the project is required.

2.2 Scoping

2.3 Temporal and Spatial Boundaries:

2.3.1 Temporal Boundaries:

Operation Lifespan will be more than 25 years.

2.3.2 Spatial Boundaries:

Said project will have positive and negative impacts at local and national level. The establishment of the said project will contribute to enhancing Pakistan's domestic productivity, and help diversify Pakistan's economy. It will create potential of improvement for social and cultural values of local people's exchange of values and standards through positive social interactions. Positive changes in lifestyles will occur due to availability of income when the natives take up Company jobs.

2.4 Important issues and concerns raised during consultation

- Environmental enhancement measures such as; Tree plantation, monitoring and safety should be ensured
- HSE plan should be enforced strictly
- Preventive measures should be adopted to avoid any unfortunate incident
- Tree plantation must be ensured
- Local employment should be ensured
- Proponent shall work for betterment of community

2.5 Significant Impacts identified in Scoping

- Particulate emissions
- Degradation of surface water quality due to process water and sewage direct disposal
- Work injury/hazards/incidents/accidents
- Disturbance of communities due to noise
- Solid waste management

2.6 Objective of the Report

Objectives to conduct EIA are as following:

- It is mandatory according to Punjab Environmental Protection Act-PEPA 1997 (Amended 2017).
- To evaluate the ability of the site in view of social acceptance and environmental soundness.
- To provide the maximum information to the proponent and other stakeholders about the existing environmental conditions and the implications of the operational project.
- Collection of available data, reports, drawings and other relevant information about area of operational project.
- Review of applicable existing environmental legislation and Punjab Environmental Quality Standards (PEQS).
- Propose mitigation measures to eliminate or to reduce the negative impacts to an acceptable level.
- Development of well-resourced environmental management and monitoring plans to identify mitigation strategies targeted towards avoidance, minimization and rehabilitation of the impacts.

Important Issues and Concerns Raised during Consultation:

Table 2-1: Issues Raised by Stakeholder

Issue	Aspect/ Concern raised by Stakeholders	Project Proponent Commitments
Employment Opportunities	Expectations of employment are very high.	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.

		The internship program will offer to the students to develop professional skills.
Health & Safety	Health and safety issues may be arising due to industrial activity.	All possible safety measures will be taken during operation phase. Proponent has designated teams for HSE concern a.k.a. Emergency Response Teams (ERTs) and 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 operation 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 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.

2.7 Significant impacts and factors to be determined

Significant issues considered during EIA Study; it was unanimously agreed by almost all the consultation participants that the project is necessary to enhance economic growth of the country. However, most of the participants are of the view that Strategic Level Environmental Impacts and their mitigations should be added in the project during EIA study.

CHAPTER# 3. Consideration 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. Moreover, the site is constructed and in operations. So, no location alternative need to be consider.

3.3 Site Alternatives

Said project is already constructed. So, no Site alternative need to be consider

3.4 Environmental Alternative

Keeping in view all the environmental consideration the project site is located in a self-developing industrial area using the best suitable technology for air emission and for the treatment of wastewater. Best suited technology has been present for the said project including no air emission and Water mitigation techniques.

3.5 Economic Alternative

Selected land is under ownership of proponent and no cost is required to purchase other land so it is viable and economic option for proponent. The cumulative effect of this types project would result in noticeable economic growth. The project is also make a positive consideration to the industrial growth.

CHAPTER# 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 Type and Category of Project

As per the PEPA Review of EIA/IEE Regulations 2022, the Project falls under Schedule II, Section B-2 thus justifying the requirement of EIA Study for the proposed Project. The EIA Study will be subjected to all provincial and national policies and current statutory requirements that have relevance to the Project.

4.2 Objective of Project

Following are the main objectives of the project:

- To manufacture good quality of pharmaceutical products
- To contribute towards industrial development of the country and enhance the growth of economy
- To meet the growing demand of pharmaceutical products in the country
- Create job opportunities for the local people, definitely
- To upgrade the socio-economic conditions of the area

4.3 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 2017). 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, sewage etc. is yet the other necessary requirements.

Obviously, environmentally sound, neat and clean environment are the other considerations for site selection. The project is also facilitating 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 natural disasters
- Area of land availability was enough

Figure 1

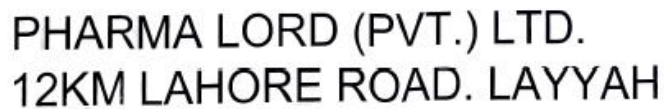


Figure 4-1: Layout of Project Site

The site is open land. The land is free from any type of vegetation. Small grasses and weeds are present in small amount at the site and there is no need to clear any vegetation because they are out of vicinity of the project.

A paved road is present at front side of industry. Meanwhile there is a main road named Chobara Road is present on almost 200m from project area.



Figure 4-2: Road Access

4.6 Cost & Magnitude of the Project

Total cost of the project is 50 million. Cost includes the entire thing regarding this project. The production capacity of the unit describes in table 1-1.

4.7 RELOCATION AND REHABILITATION PLAN

The land is in the ownership of proponent and there is also different type of industries are present near the project site. Industry is already constructure there is no human settlement at or around the selected project site to be displaced. No structure of any significance stands at the site to be relocated or dismantled.

4.8 Schedule of Implementation

Pharma Lord is already constructed and in operation.

4.9 Project Description

Subject project is the Establishment of Pharma Manufacturing unit under the name of Pharma Lord. Total area for the subject project is 05 Kanals. The production capacity of the unit is described in below table and total cost the project is Approx. PKR.50 million. The detailed production capacity are described in chapter 1.

4.10 Project Process

The entitled project is construction of Pharma

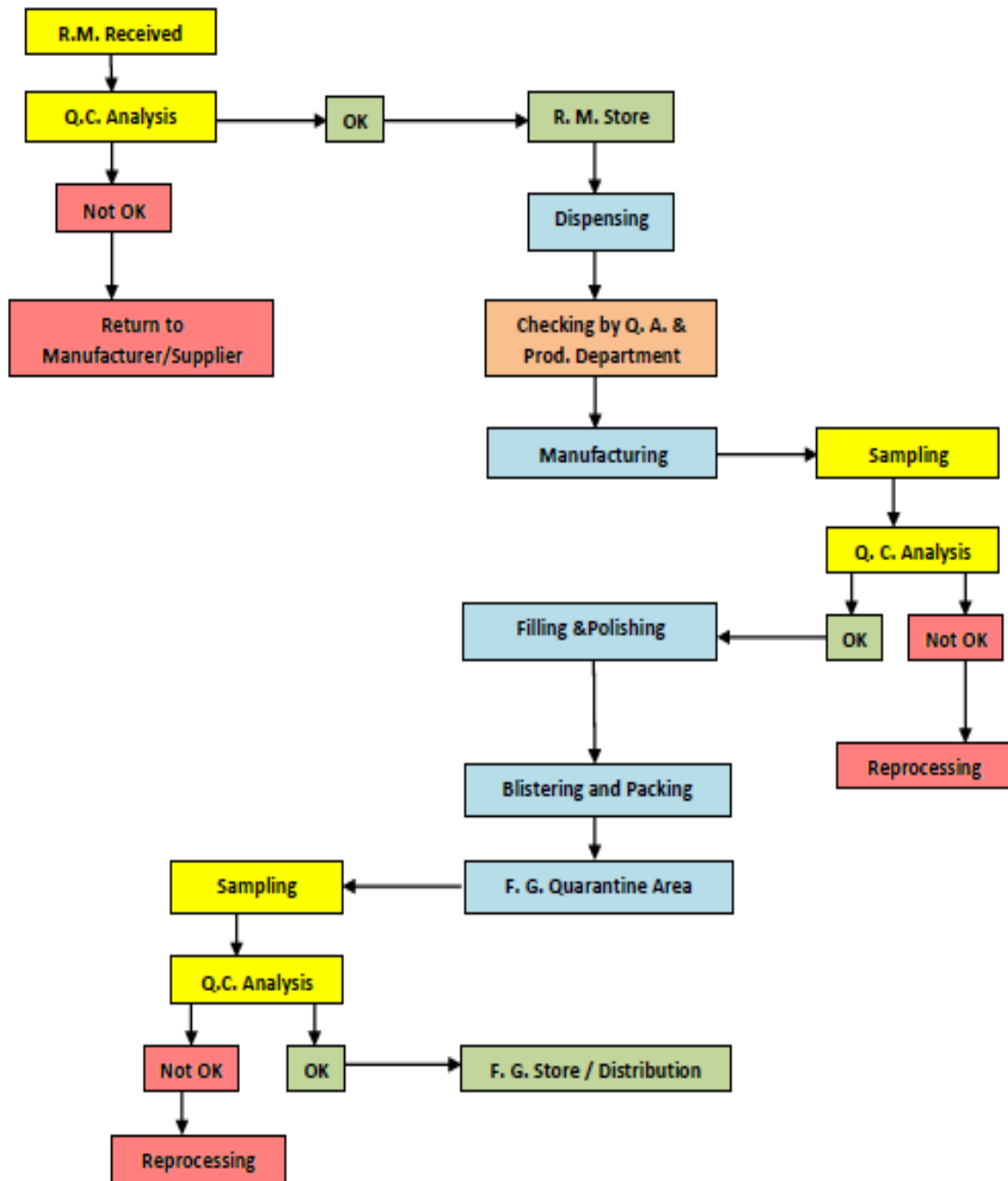


Figure 3: Process flow of Capsule

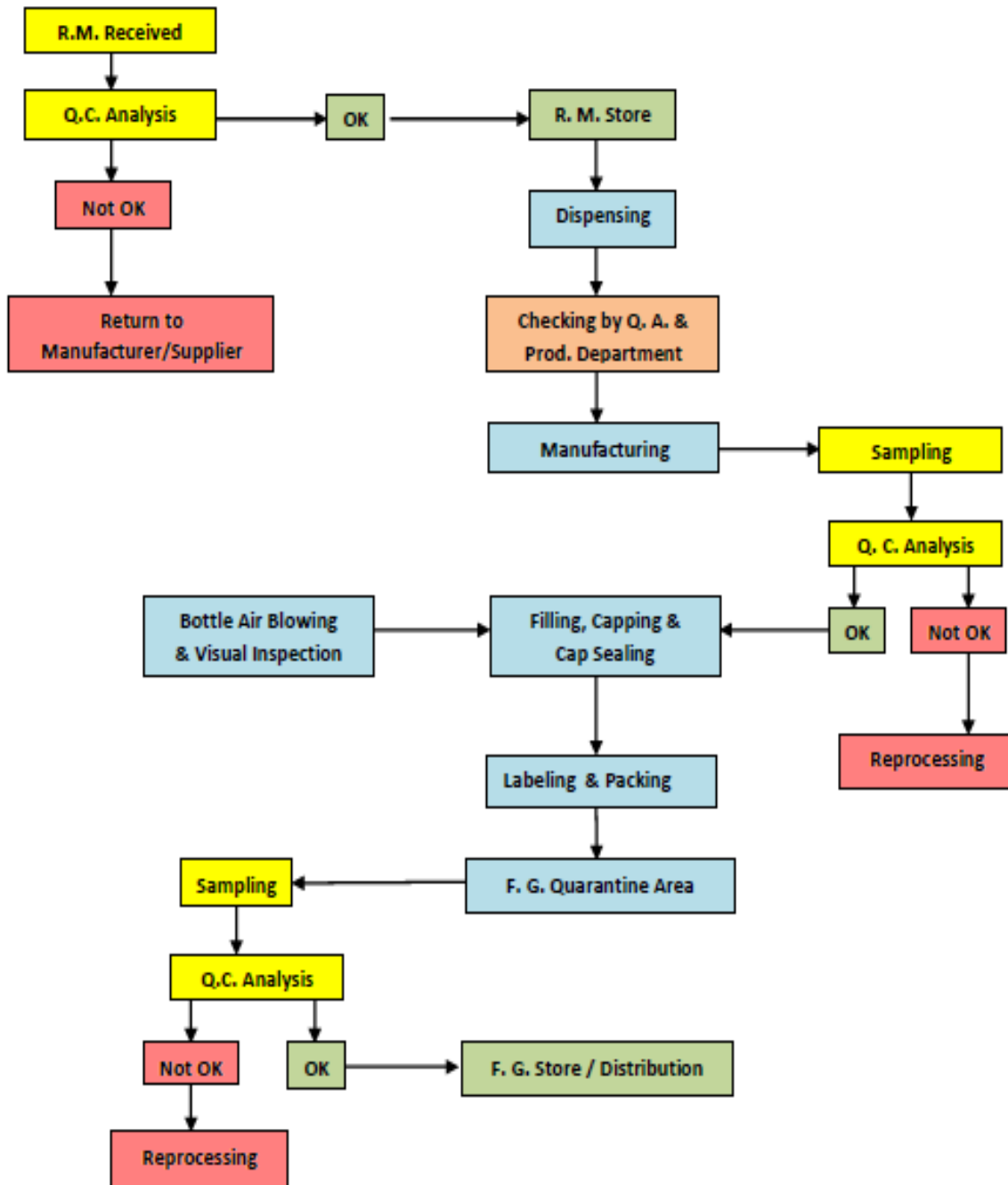


Figure 4: Process Flow for Dry Suspension

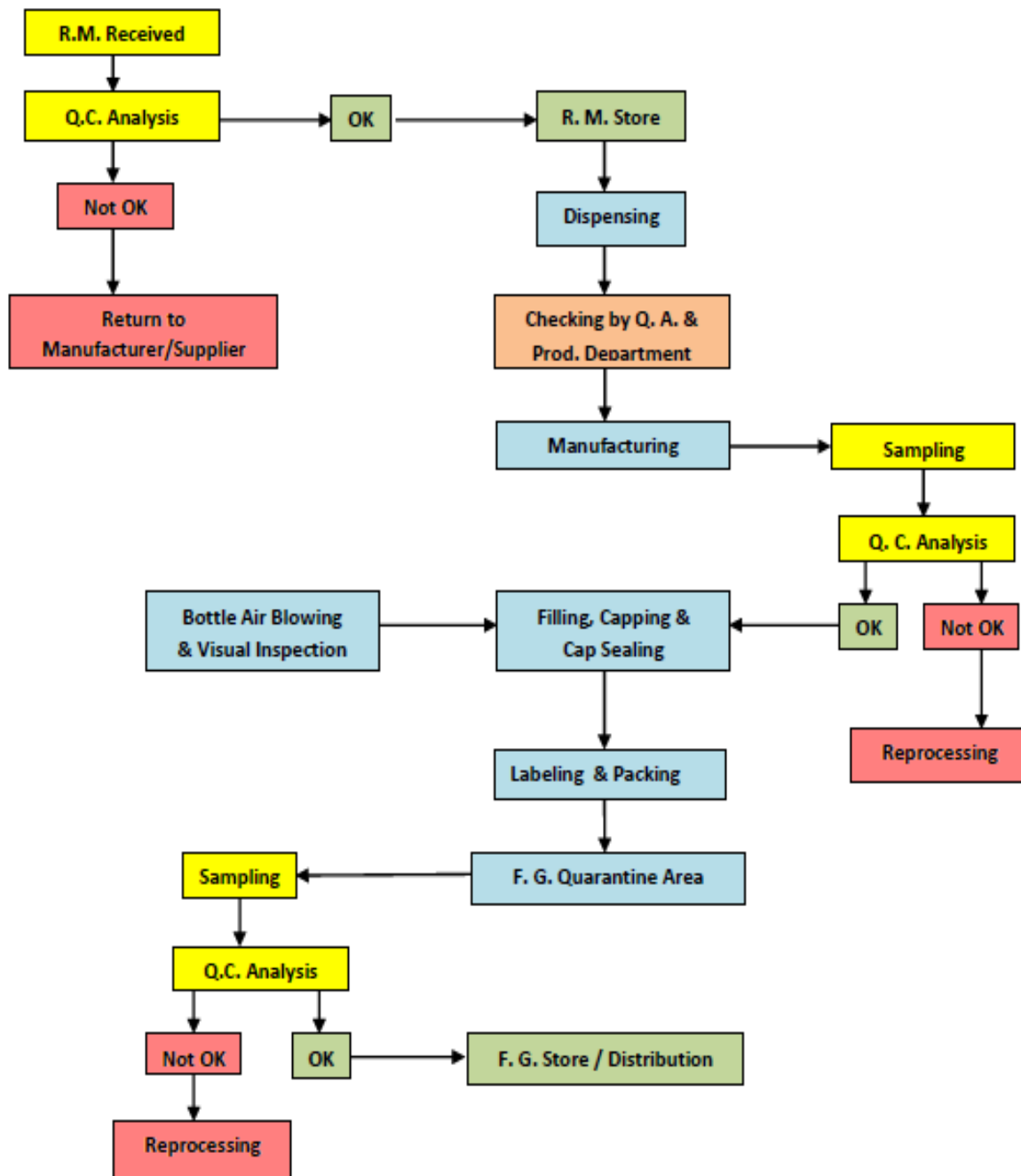


Figure 5: Process Flow of liquid syrup

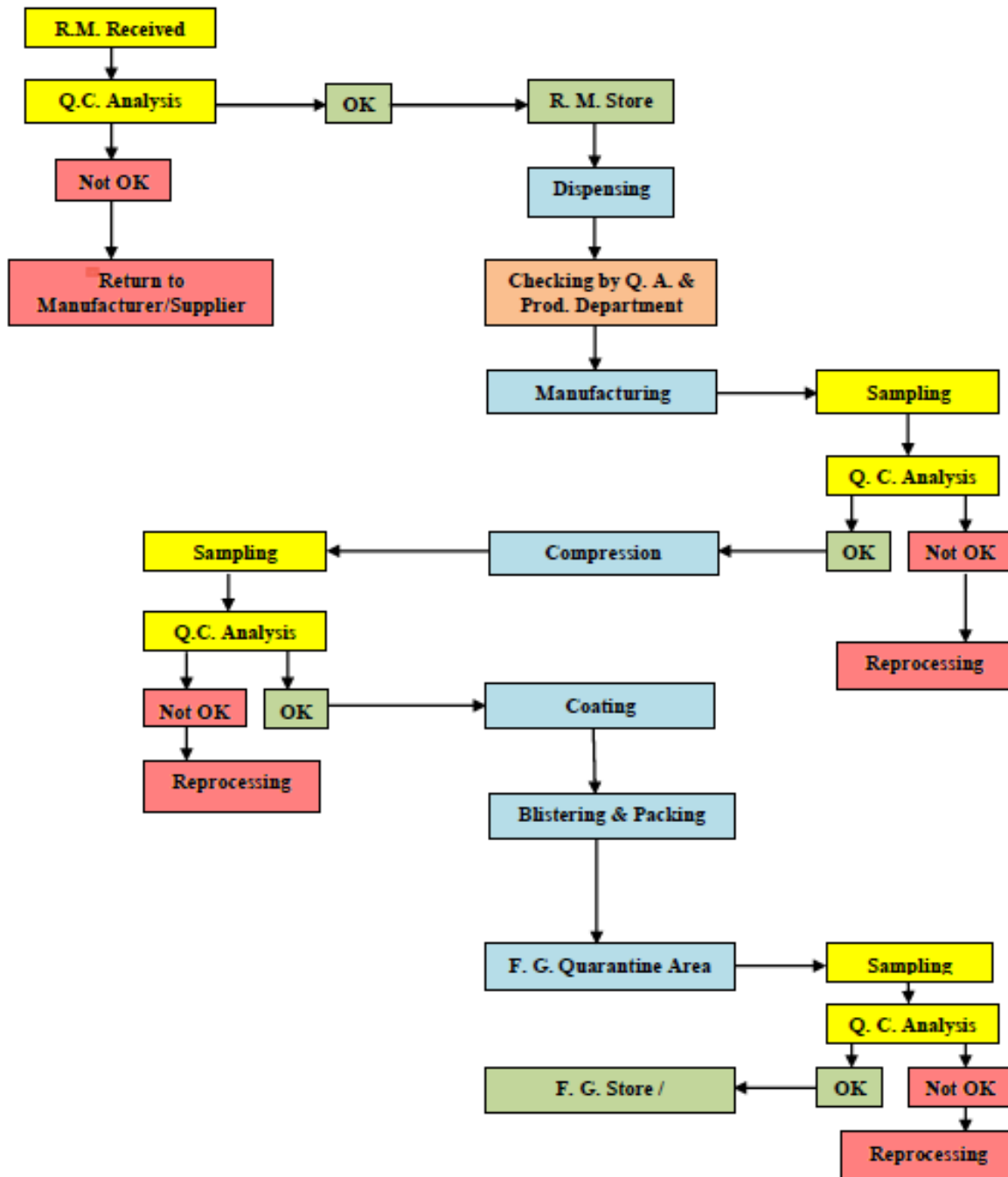


Figure 6: Process Flow for Tablet

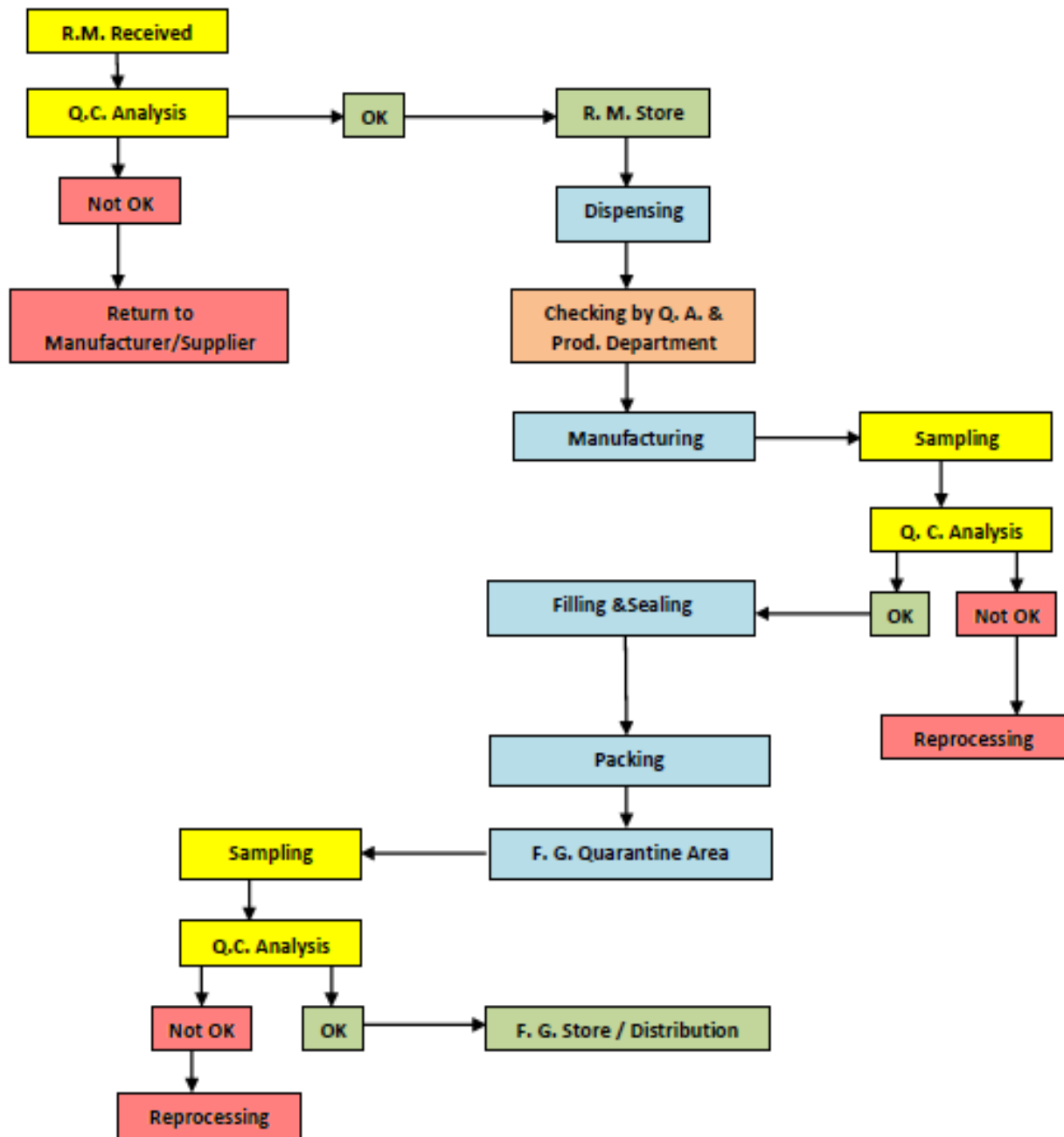


Figure 7: Process Flow for Sachet

4.11 Water Consumption & Wastewater Disposal

Water is consumed for domestic and process activities. The wastewater will only generate from the domestic activities that will be treat in septic tank before disposal.

4.12 Solid Waste

Solid waste by domestic sources is generated during operational phase which will be placed in separate bins. The waste generated is preferably be recycled, and remaining is handed over to contractor, a comprehensive plan will be formulated for safe disposal of solid waste.

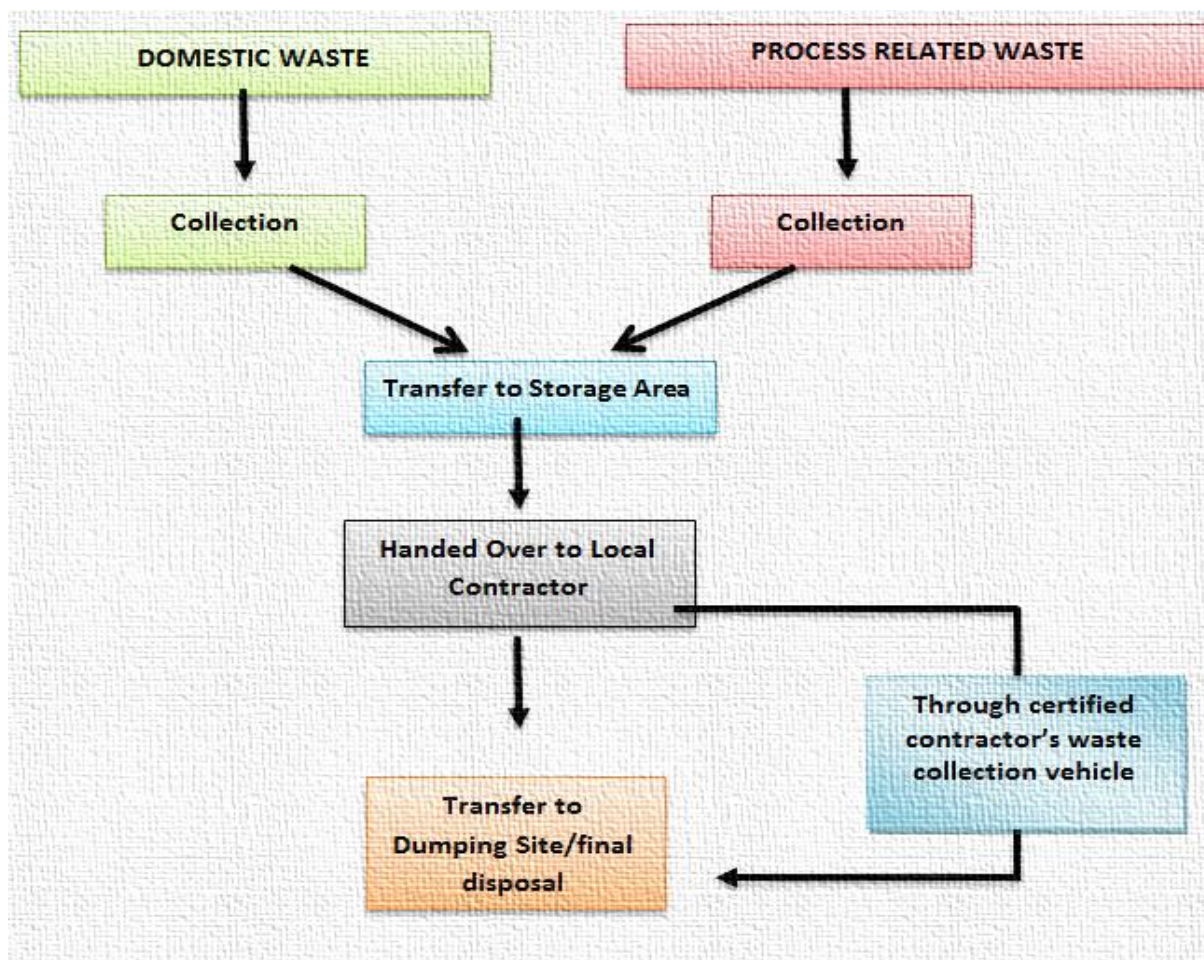


Figure 4-8: Solid Waste Detail

4.13 Health and Safety

A well-maintained health and safety plan will be formulated and same will be followed throughout the project operational activities.. Mainly ear muffs and helmets will be provided at the time of operation. Beside this safety mats, shoes, gloves all will be part of the work 's dress. A well-maintained health

and safety plan will be established. It will assure the contractor will maintain all the safety measures in operational phase.

Table 4-1: Details of PPEs

Protection	Occupational Hazards	PPEs
Head Protection	Falling objects, inadequate height clearance, and overhead power cords	Helmets with or without electrical protection
Hand protection	Hazardous material, cuts or lacerations, vibrations, extreme temperatures	Synthetic or Rubber gloves, leather, insulating material etc.
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation	Glasses, shield protective, etc.
Hearing protection	Noise, ultra sound	Hearing protectors like ear plugs, ear muffs
Respiratory protection	Dust, fogs, fumes, gases, smokes, vapors, oxygen deficiency	Facemasks or air supply
Body protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration	Aprons, insulating clothing etc. of appropriate materials

4.13.1 Safety Signs/ Safety Boards

At any workplace safety signs and symbols are very important to avoid many accidents. They must be in easy and understandable language to all the workers. Workers should have the knowledge of sign wordings and they must be trained and aware about them. Safety signs, symbols and boards must be provided by every site to protect the workers and employees from the risks of hazards that has not been controlled by other means. Safety signs and boards give safety message and they must be of different colors that workers could understand their meanings easily. At the subject project, safety signs and boards will be placed to avoid the workers and staff from any risk.

4.13.2 Plantation

There is a vast area that has been declared as green areas are reserved. Proper plantation will be done to control the suffocation and esthetic purpose. It is suggested to plant saplings of fruits and other edibles outside or inside the boundary wall.

4.13.3 Fire Protection System

An addressable fire protection system with detection and alarm annunciation and other installations etc. will be provided to protect against any fire hazards in the project. Fire buckets and fire extinguishers will be installed at all sensitive places within the working area of project. Pictorial Evidence of Fire safety is attached as annexure.

4.14 Restoration and Rehabilitation Plans

All possible precautions were taken to prevent an untoward incident in terms of life and property losses. On completion of the project, solid waste was removed from the site in order to maintain aesthetics of the area. All measures are undertaken for ensuring occupational safety, security and

clean environment during the working hours. Vegetation and landscaping is done by the proponent after the completion of project.

4.14.1 Details of Restoration and Rehabilitation

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.

4.15 Government & Local Approvals:

The proponent is very purposive about the approval from all local and government bodies but NOC from EPA is prerequisite for approval from all these bodies. Layout Map is approved by drug regularity Approval is attached as Annexure.

CHAPTER# 5. DESCRIPTION OF ENVIRONMENTAL & SOCIAL BASELINE CONDITIONS

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

5.1 Physical Environment/ Resources

5.1.1 History:

The town was founded around 1550 by Kamal Khan, a Mirani Balooch and a descendant of Ghazi Khan who laid foundation of Dera Ghazi Khan. Around 1610, the town was taken from the Mirani Rulers by the Jaskani Balochs, who held it until 1787. Abdun Nabi Sarai was appointed Governor by Timur Shah Durrani, but three years later it was included in the Governorship of Muhammad Khan Sadozai, who transferred his seat of Government to Mankera.

In 1794, Humayun Shah, the rival claimant to the throne of Kabul, was captured near Leiah and brought into the town, where his eyes were put out by order of Zaman Shah. Under the Sikh Government, the town once more became the centre of administration for the neighbouring tract, and after the British occupation in 1849, was for a time the headquarters of a Civil Administrative Division. This administrative status of Layyah was short-lived and the British reduced it to the level of Tehsil headquarters, making it a part of Dera Ismail Khan.

In 1901, Layyah was transferred to the new District of Mianwali. Later on, it was made part of the Muzaffargarh District. In 1982, Layyah Tehsil was upgraded to District headquarters comprising three Tehsils: Layyah, Karor Lal Eisan and Chaubara. The municipality was created in 1875. The population, according to the 1998 census was 2 Million. Per capita income during the ten years ending 1902-3 averaged Rs. 9,900, and expenditure Rs. 10,100. In 1903-4, the income was Rs. 10,600, chiefly derived from octroi, and the expenditure was Rs. 10,600.

5.1.2 Geography

It lies between 30–45 to 31–24 deg north latitudes and 70–44 to 71–50 deg east longitudes. The total area covered by the district is 6,291 km² with a width from east to west of 88 kilometres (55 mi) and a length from north to south of 72 kilometres (45 mi).

5.1.3 Topography

Layyah district is situated in the southeast part of Punjab, and so most of the area of the district consists of a semi-rectangular block of sandy land between the River Indus and River Chenab in the Sindh Sagar Doab area

5.1.4 Climate

The Layyah District has an extremely hot climate. Maximum temperature in the summer goes up to 53 Degree Celsius. The temperature in winter is low due to the area's nearness to Koh-Suleman range of mountains. The Chaubara Tehsil is almost barren and consists of forest and sand dunes. It is a 'Rakh' under the control of the Forest Department. The Tehsils of Layyah and Karor Lal Esan are developed agriculturally compared to other Tehsils of the Distract but still have are large tracks of sand dunes and uncultivated land. The Indus River passes from north to south on the western side of the district and touches Dera Ghazi Khan. The other main city of District is Chowk Azam has a population of 200,000.

Summer (May to September): Summers in Layyah are hot and dry, with temperatures often exceeding 40°C (104°F) during the peak months of June and July. The region experiences high levels of solar radiation, contributing to the heat. Dust storms and occasional thunderstorms can occur during this time.

Monsoon Season (July to September): The monsoon season brings some relief from the heat as well as increased humidity. During this period, the district may receive occasional heavy rainfall and thunderstorms, which can lead to localized flooding.

Autumn (October to November): Temperatures start to moderate during autumn, and the weather becomes more pleasant. This is considered a transitional period from the hot summer to the cooler winter.

Winter (December to February): Winters in Layyah are relatively mild compared to the rest of the country, with daytime temperatures ranging from around 10°C to 20°C (50°F to 68°F). Nights can be cooler, with temperatures dropping to single digits. Rainfall is less common during this season.

Spring (March to April): Spring sees a gradual increase in temperatures, and the weather becomes more comfortable. The landscape begins to bloom with various plants and flowers.

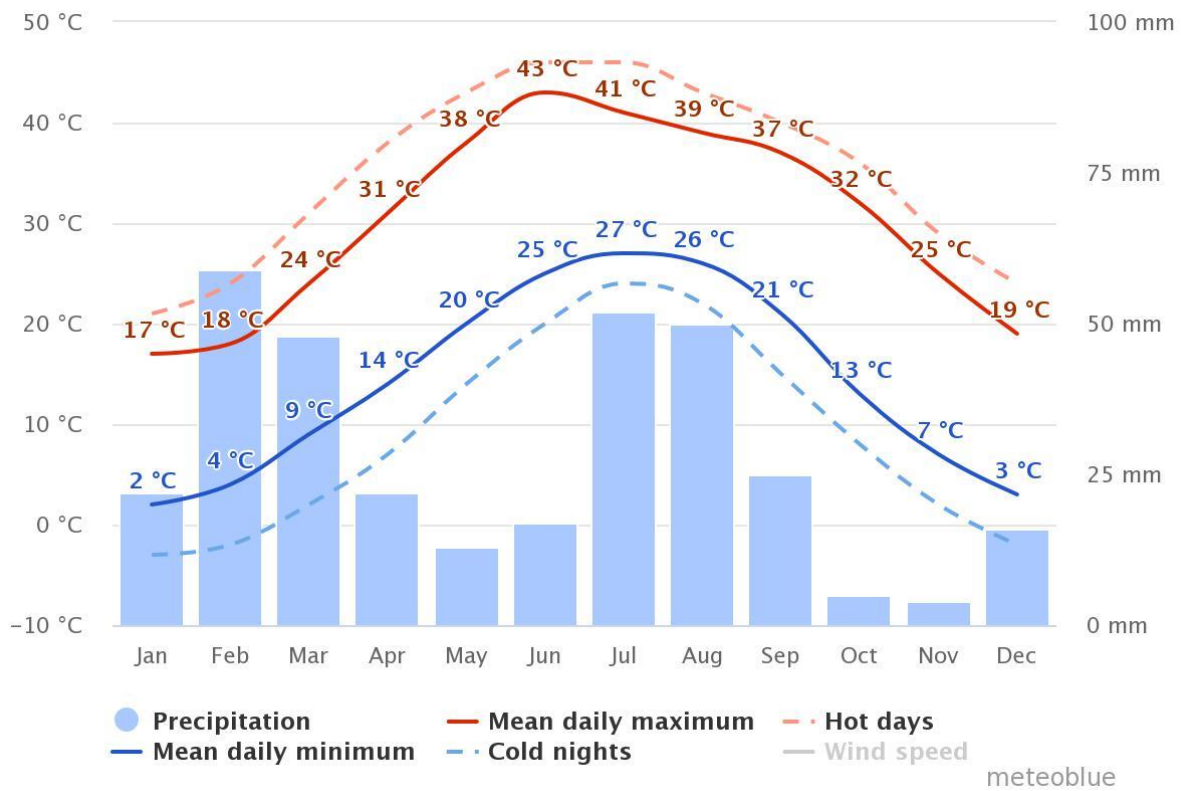


Figure 5-1: Climate Data (Source meteoblue)

5.1.5 Rainfall

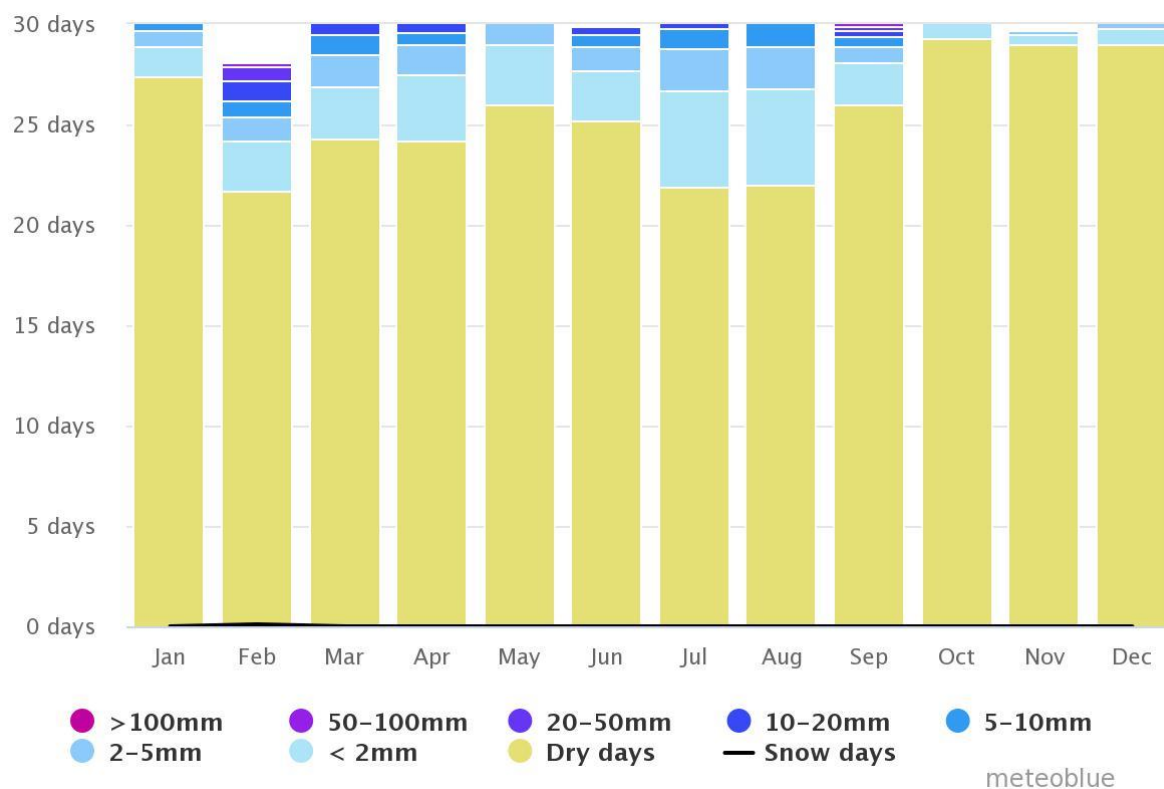


Figure 5-2: Rainfall Data (Source meteoblue)

5.1.6 Wind

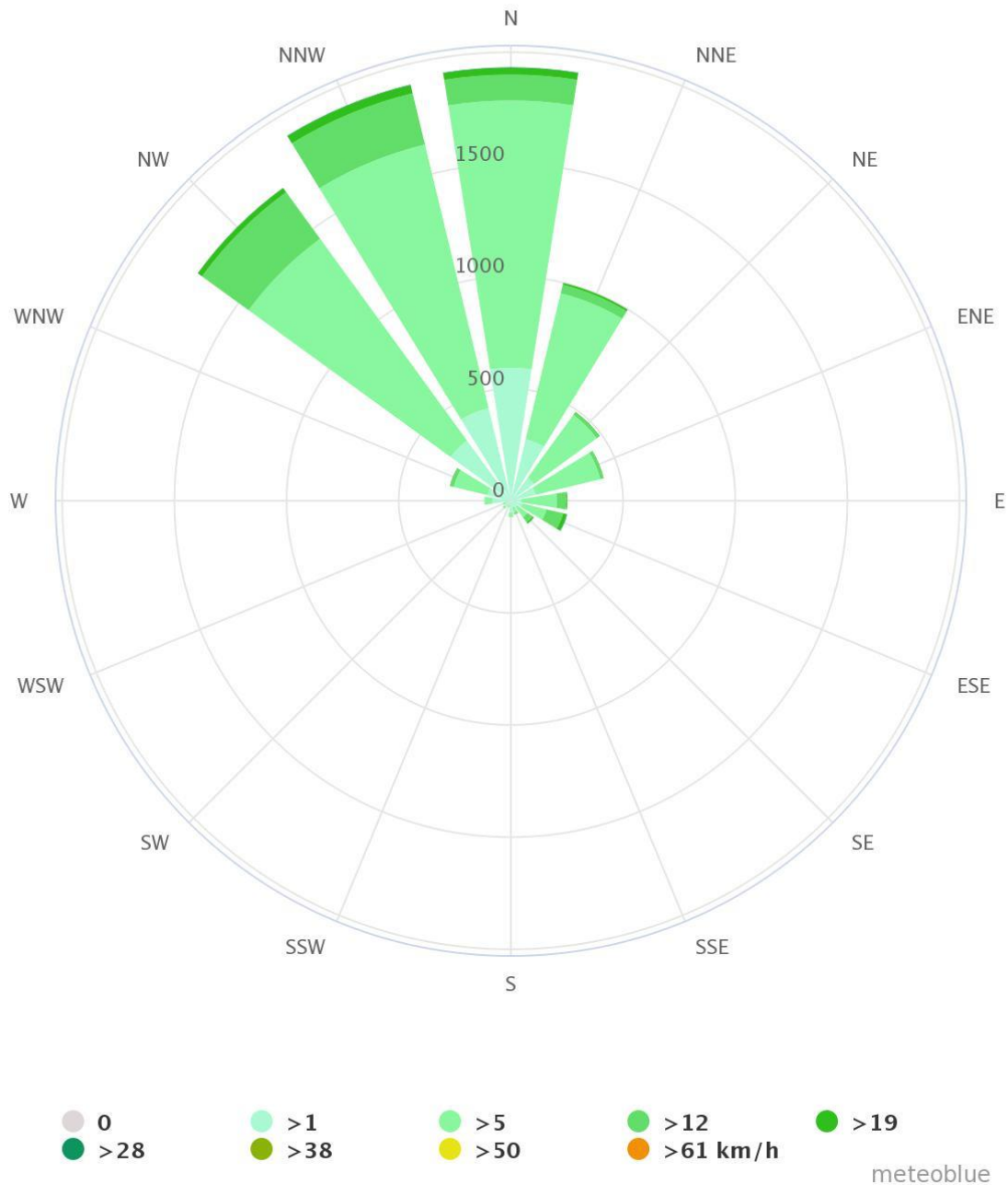


Figure 5-3: Wind Speed (Source: www.meteoblue.com)

5.2 Ecological Resources

This section describes the biodiversity existing ecosystem and existing ecological conditions in the project area of influence.

5.2.1 Flora

The area is located in alluvial plain which is highly fertile. Naturally grown shrubs are also present on the land. There were no trees seen on the project land. Green fields of rice, gandum and other vegetables are found in abundance in the surroundings of the project area.

5.2.2 Fauna

Fauna within the Project area includes following:

(i)	Mammals	(iv)	Birds
	• Jackels (Canisaureus) • Field rats (Rattusnorvegitus)		• Shikra (Accipiter badius) • Crow (Corvussplendens) • Common kite (Milbusmigrans) • Sparrow (Passer domesticus) • Pigeons (Columba livia) • Dove (Stratopielia SSP.) • Parrot (Psittaculakramerl)
(ii)	Reptiles	(v)	Others
	• House Lizard		• Spiders
(iii)	Amphibians		
	• Common Toads		

There are no migratory birds reported in or around the project area. Domestic animals of significance include cows/ bulls, buffaloes, goats, donkeys and sheep.

There is no endangered species reported in the project area by the Wildlife Department of Punjab.

5.3 Social and Cultural Study

5.3.1 Demographics

At the time of the 2017 census the district had a population of 1,823,995, of which 924,837 were males and 899,016 females. Rural population is 1,502,821 while the urban population is 321,174. The literacy rate was 58.19%. Muslims were the predominant religious community with 99.35% of the population while Christians were 0.53% of the population.

At the time of the 2017 census, 66.67% of the population spoke Saraiki, 27.79% Punjabi, 2.78% Urdu and 2.29% Pashto as their first language.

5.3.2 Education

There are 20 Public Sector Colleges available for the education of males and females of Layyah. While Private Sector Colleges are almost 14.

BZU sub campus is the only private university in Layyah having different departments of Business Administration, English, Economics, Psychology, Sociology and Education etc.

Private Sector Universities include Govt. College University Faisalabad (Layyah Campus), University of Education, Lahore (Layyah Campus), Govt. College University, Lahore (Layyah Campus), National College of Business Administration & Economics Lahore (Layyah Campus).

5.3.3 Culture

Culture” can be defined in many different ways. Culture may be defined as behavior peculiar to human beings, together with material objects used. Culture consists of language, ideas, values, attributes, beliefs, customs, codes, institutions, tools, works and arts, religion, law, morality ,ceremonies and festivals. According to Muller-Layer, Culture can be defined as “Culture is an aggregate means of achievement and of progress”. Layyah culture is called "Pure Local Culture". Although 98% people in Layyah are Muslims by birth and faith.

Local Events

"Baysakhi" is the main local event of city. It is called Jashan-e-Layyah and celebrated in the month of April every year at the beginning of wheat field cutting.

Social Life

Social life is very simple but legendry in District but some advance in main city. Social customs and traditions reflect Islamic touch. People are very much sincere, hospitable, conservative and humble, they are seriously conscious about their social traditions and feel pride in following them.

Dresses

According to climate dress is very simple. Men uses "Shalwar & Kameez" and women uses "Shalwar& Kameez, Dupata, Burqa, and Black Chadaar.

Handicrafts

Wooden, Date Leaves and Soil handicrafts are most popular and common. Women Design different styles of dresses and make flowers and Embroidery.

Games

Game plays a vital role in social development and relation building in society. Another benefit games provide you is the activeness and shows the color of your cultural ethics. Cricket, Football, badminton, Hockey, Volleyball, Kabbadi Hourse riding and Kushti are major sports.

Poets and Writers

According to the accent believe "The poetry of a poet reflects the whole nation" which means we can easily understand the culture, believes and ethics just by reading their literature. Ulema, Mushaikh and Sufi poets occupy highly honored places.

5.3.4 Archaeological and Historical Treasures:

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

5.4 Environmental Monitoring

There are no signs of water logging in the project site.

5.4.1 Air Quality:

The project is located in the District Layyah. The major sources of air pollution in the area are vehicular traffic.

To record the baseline ambient air quality of the project area, sample was collected at different location to observe the level of CO, SO₂, NO₂ and Particulate Matter (PM10).

5.4.2 Noise Level:

Major source of noise generation is vehicular traffic along the main road. Noise levels were monitored at different location of the project site.

5.4.3 Ground water:

Underground water at the project site is available and source of water for the project is the water pump. Project proponent has tested the ground water sample from the ESPAK Laboratory. According to the ESPAK ground water is fit only for the industrial use. Laboratory reports are attached as Annexure-G.

5.5 Suitability of site

The land is not prohibited, not environmentally sensitive. Industry is already constructed and in operations.

CHAPTER# 6. POTENTIAL ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

This section addresses the Project's potential impacts on physical, biological and socio-economic environment of the area that may be encountered during preconstruction, construction and operations phases. Impacts have been predicted and assessed. Where applicable, mitigation measures have been suggested to be implemented in order to reduce the adverse impacts, if not eliminated. It is aimed to:

- Find different alternatives and ways of doing the project activities.
- Enhance the environmental and social benefits of proposal.
- Avoid, minimize and remediate adverse impacts.
- Ensure that residual adverse impacts are kept in acceptable limits

6.1 IDENTIFICATION OF POTENTIAL IMPACTS

In the first step, potential impacts of the project are identified by desktop screening exercise, using checklists during field visits for collection of baseline data, professional judgment, published literature on environmental impacts of similar projects and standard environmental guidelines. Potential impacts are also identified through discussion with project proponent, consultation with stakeholder and community to identify their concerns. The main aspects associated with potential impacts are as follows:

- Water resources
- Ambient Air Quality
- Waste discharges
- Noise pollution
- Ecology of the area, including flora and fauna
- Vehicle movement
- Socio-economic conditions
- Archaeology

6.2 CLASSIFICATION OF IMPACTS

According to the type of potential receptors, the potential impacts are classified. The following receptor categories were used

Category of Receptors	Description
Community & worker	People their social and cultural values, aspirations and archaeological sensitivity, Health and safety of the workers
Air Quality	Ambient air quality
Water Resources	Ground and surface water resources

6.3 SCOPING CRITERIA FOR IMPACTS

The identified potential impacts of the project are evaluated on the basis of following criteria;

- The present baseline condition, the change in environmental parameters likely to be affected by the project related activities;
- Is there any impact that environmental standards or environmental guidelines applicable to the project will be breached?
- Is there a high risk of permanent, irreversible, and significant change to environmental condition due to particular project activity?
- Did the community express any concern about this aspect?

6.4 IMPACT ASSESSMENT METHODOLOGY

6.4.1 Screening of Potential Impacts

Based on site visit, observation, brain storming, provided information and social interviews, significant impacts were evaluated in the light of technical and regulatory concerns. Then qualitative and quantitative (where possible) assessment of these anticipated impacts was carried out.

6.4.2 Mitigation Measures

After anticipation and screening of significant impacts, certain mitigation measures are to be provided in order to enhance benefits of project by reducing negative impacts.

6.4.3 Evaluation of Residual Impacts

Incorporation of suggested mitigation measures may reduce the magnitude of the environmental impacts of the project but sometimes, it may fail in bringing them within the acceptable limits. This step refers to the identification of the anticipated remaining impacts after mitigation measures have been applied.

6.4.4 Identification of Monitoring Requirements

The last step in the assessment process is the identification of minimum monitoring requirements. The scope and frequency of monitoring depends on the residual impacts. The purpose of the monitoring is to confirm that the impacts are within the prescribed limits and to provide timely information if acceptable limits are being breached.

6.4.5 IMPACT SCREENING

Screening of the potential impacts associated with various Project's activities of preconstruction, construction and Operational phases was conducted to determine impacts with high severity. A matrix developed for the Project was used which relates Project's activities with various components of the environment. The impacts were ranked with respect to their severity as under:

High negative impact	-2	No impact	N
Low negative	-1	Low positive impact	+ 1
Insignificant impact	0	High positive impact	+2
NA Not applicable			

Project Activities	Physical							Biological			Social and Socioeconomic									
	Soil	Air Quality	Surface Water	Groundwater	Water Availability	Topography	Noise	Natural Vegetation	Wildlife	Reduction of Biodiversity	Economical activities	Livelihood and Economy	Resettlement	Safety Hazards	Employment	Traffic congestion	Health Hazards	Natural Risks	Gender Issues	Site Aesthetic
Operational Phase																				
Waste Segregation	N	N	N	N	N	N		N	N	N	N	N	-2	+1	N	-2	N	N	N	N
Waste Collection & Transportation	-1	N	N	-1	N	N	-1	N	N	N	N	N	-2	+1	0	-2	N	N	N	N
Waste Storage	-1	-1	N	-1	N	N	NA	N	N	N	N	N	-2	0	N	-2	N	N	N	N
Resources Consumption	N	0	N	N	N	N	NA	N	N	N	N	N	-2	0	N	-2	N	N	N	N
Abnormal Conditions	-2	N	N	-2	N	N	NA	N	N		N	N	-2	0	N	-2	N	N	N	N
Occupational Health and Safety	-1	N	N	N	N	N	NA	N	N	N	N	N	-2	0	0	-2	N	N	N	N
Employment Opportunities	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Community Developments							NA													
Waste Burial	0	0	-1	-1	N	N	NA	N	N	N	N	N	-1	N	N	-2	N	N	N	N
Sewage Disposal	-2	N	-2	-2	N	N	NA	N	N	N	N	N	0	0	N	-2	N	N	N	N
HVAC Operation	N	-1	N	N	-1	N	NA	N	N	N	0	N	-1	+1	N	-1	N	N	N	N
Chemicals storage	-1	0	0	-1	N	N	NA	N	N	N	N	N	-1	0	N	-1	N	N	N	N
Other operational activities	-1	-2	0	-1	-2	N	NA	+2	N	N	+2	N	-2	+2	-1	-2	0	0	N	N

6.5 IMPACT CHARACTERIZATION AND ASSESSMENT

Impacts are characterized on the basis of significance, probability and prevalence of the potential impacts on the surrounding environment. Primarily, anticipated impacts have been categorized as:

- Direct or Indirect
- Positive or Negative
- Local or Widespread
- Reversible or Irreversible
- Probability (Unlikely, Likely, Certain)
- Severity (Low, Medium, High)

6.5.1 Significance of Impact

- Significance of impact is assessed as low, medium and high based on Impact consequences severity and likelihood (Table 6.2), reversibility, impact duration, public concern and mainly the compliance with the EPA Rules and Regulations.

Table 6-2: Impact Assessment

Probability of Impact Occurrence	Impact Severity			
		Mild	Moderate	High
		1	2	3
Unlikely	1	Low Significance	Low Significance	Medium Significance
Likely	2	Low Significance	Medium Significance	High Significance
Certain	3	Medium Significance	High Significance	High Significance



Table 6-4: Summary of Characterization and Significance of Impacts for Operation Phase

	Air Quality	Noise	Health Hazard	Safety Hazard	Soil Contamination	Water Contamination
Direct and indirect	Direct	Direct	Direct	Direct	Indirect	Indirect
Positive and negative	Negative	Negative	Negative	Negative	Negative	Negative
Local or widespread	Local	Local	Local	Local	Widespread	Widespread
Short- or long-term	Long term	Long term	Long Term	Long Term	Long Term	Long Term
Reversible or Irreversible	Reversible	Reversible	Reversible	Reversible	Reversible	Reversible
Severity*	Moderate	Moderate	High	High	High	High
Probability	Likely	Likely	Likely	Likely	Likely	Likely
Significance	Medium	Medium	High	High	High	High

6.6 IMPACTS ASSOCIATED WITH OPERATIONAL PHASE:

6.6.1 Impact on Physical Environment

6.6.1.1 Air Quality

Potential Impact

Poor air quality due to the release of contaminants into the work place can result in possible respiratory irritation, discomfort, or illness to workers. Employers should take appropriate measures to maintain air quality in the work area.

Sources of air emissions at HCFs may include: (IFC EHS Guidelines)

- Exhaust air from heating, ventilation, and air conditioning (HVAC) systems
- Emissions may include exhaust from:
 - Solid waste generation
 - Vehicles entering the parking
 - Emergency power generators (Only operated at power failure)

Significant deterioration of air quality can occur if the air emissions do not comply with PEQS.

Mitigation Measures

- The scheduled maintenance of power generators will be carried out to achieve exhaust emissions well within PEQS limits.
- Solid Waste will be handed over to the third-party contractor



- Preventive and proactive maintenance of HVAC system will be carried out to operate the system in accordance with Manufacturer`s specifications so that impact is within the low significance range.
- Ambient air quality at the project area will be maintained well within the PEQS by providing general ventilation options in design.

Residual Impact

The impact on air quality will be significantly reduced by implementing the mitigation measures.

6.6.1.2 Noise

Potential Impacts

During Operational phase, the noise (causing nuisance) may include the sound during operation of backup generators, from HVAC system and vehicles entering the parking and movement of vehicles. There are some other noises in buildings including alarms, machinery and equipment, noisy doors, staff activities and ringing bells as well as staff, visitors' conversation. The main sources of pollution from noise are during raw material and finished good loading and unloading, vehicle movements, operation of machines. The increased noise may be a source of disturbance to workers, working near to the machines. Noise level during operation phase of pharmaceutical unit will be limited to operational site. Workers could be exposed to high noise levels, however only concerned staff will be working in the area with required personal protective equipment (PPE) to minimize or reduce the noise exposure.

Mitigation Measures

- As Backup generators will operate only during power failure therefore the impact on environment will be negligible if generators are well maintained and operated at Manufacturer`s specified specifications.
- The scheduled maintenance of HVAC will be carried out to ensure minimum possible sound levels.
- Provide hearing protective devices to employees working at generators or HVAC.
- The generators and HVAC systems are enclosed in a building to prevent noise pollution in wards and other buildings.
- Set a 'quite time' overnight and advertise this with posters.
- Identify faulty machinery to fix the noise problem. Fit soft door closures.



- Educate staff and visitors to keep the noise minimum without disturbing patients.

Residual Impact

Impact from noise pollution can be controlled within acceptable limits of PEQS for noise by incorporating above-mentioned mitigation measures.

6.6.1.3 SOLID WASTE

Solid waste generated from a Pharma manufacturing unit comprises of raw materials packaging waste like cartons, material bags, finished goods packaging waste etc. Most of the generated waste will be recyclable. The rejected raw material will be handed back to the supplier. The generated domestic solid waste will be handled as per area practices. If the waste management is not carried out properly, it can affect health of workers, pollution of soil, surface or ground water. All waste generated from the project will be managed by proposed controls. The environmental impacts will be minimized after the implementation of the proposed mitigations.

Mitigation Measures

The following mitigation measures will be implemented:

- **GENERAL WASTE MANAGEMENT PRACTICES**
 - During operational phase of the project, a proper waste management plan will be devised and implemented. Key elements of the waste management system will include the following:
- **ON-SITE HANDLING**
 - Proper waste collection system will be ensured. For this purpose, waste bins will be placed inside the boundary.
 - The recyclable waste will be sent to waste contractors.
 - Records of generated waste should be maintained.
 - All non-hazardous waste that can be recycled or reused will be handed over to the contractors.
- **OTHER MANAGEMENT MEASURES**
 - Training will be provided to personnel for identification, segregation and management of waste.
 - All containers of waste will be labeled properly.
 - In-house audits of the waste management will be undertaken on regular basis.



RESIDUAL IMPACTS

- Proper implementation of the mitigation measures will minimize the residual
- Impact from waste. Monitoring and inspection will be undertaken to ensure the implementation of mitigation measures.

6.6.1.4 Water Contamination/Water Quality**Potential Impacts**

Implementation of the proposed mitigation measures and regular monitoring is not likely to leave any significant impact of the waste water from the pharmaceutical unit.

Wastewater will be disposed-off into septic tank before disposal.

Municipal wastewater coming from various municipal works, such as cleaning will be generated, which will be treated via a Septic Tank.

Mitigation Measures

- IFC General EHS Guidelines² apply to mitigations for Water Contamination

Residual Impact

Significance of the residual impact is predicted to be low if mitigation measures are adequately incorporated.

Monitoring Measures

- Periodic monitoring of water quality is proposed in accordance with PEQS for drinking water on quarterly basis.

6.6.2 Health Hazards**Potential Impacts**

Health hazards to the Project staff, patients, visitors and neighboring communities are the major potential impacts of operational phase of the Project particularly due to:

- Not using proper PPEs
- Improper sharps management
- Not following Infection Control Protocols
- Not implementing proper procedures for waste segregation/collection, transportation, storage and final disposal.
- Lack of employees' training and accountability; behavioral issues



The Pharma Lord Private Limited is accredited with DRAP. An appropriate waste management system will be established to comply with DRAP Rules and WHO.

Mitigation Measures

- Waste management plan will be prepared and implemented.
- Appropriate Waste Management (Segregation/ Collection/ Transportation/ Storage/ Treatment/ Disposal)
- Use of PPE
- Their segregation strategy at the point of generation.
- Treatment and disposal options for each type of waste.
- The waste segregation, collection and storage will be carried out within project area whereas the waste transportation from the project to the off-site facility, its treatment and final disposal will be in the scope of EPA certified Waste Handling Contractor. The contractor will comply with IFC EHS General Guidelines for Waste Transportation.
- Enforce the Contractor's employ to use appropriate PPEs.
- Packaging for infectious waste shall include an inner, watertight layer plastic with a leak-proof seal with outer packaging of adequate strength for the specific type of waste.
- Containers for sharps packaging should be puncture-proof;
- Transport vehicles will be dedicated for waste only and compartments should be sealed during travel.

Appropriate Wastewater Disposal:

- Comply with WHO Guidelines⁴ "Chapter 9: Collection and disposal of Wastewater of WHO Handbook on Safe management of wastes from health-care activities-2nd Edition)"
- Wastewater from Laboratories shall be disinfected with hypochlorite solution in Kill Tanks before discharge to sewerage system.
- Waste segregation measures should be employed to minimize entry of solid waste into the wastewater stream
- Collection of large quantities of pharmaceuticals for separate treatment or return to manufacturer. Small quantities of mild, liquid pharmaceuticals, excluding antibiotics or cytotoxic drugs, may be discharged to sewer systems with a large water flow.



- It will be ensured that the wastewater will pass through Septic Pond/Wastewater Treatment System (on-site primary and secondary treatment in addition to chemical disinfection) before its discharge to public sewer in order to ensure wastewater effluent's compliance with PEQS for Liquid Project Waste and limits of IFC/WHO Guidelines.

Residual Impact:

Residual impact can be significantly reduced provided the mitigation measures are fully incorporated.

Monitoring Measures

- Management shall monitor adherence to Waste Management Plan in cooperation with Waste Management team
- Effluent from Septic Tank/Wastewater Treatment Section shall be monitored for PEQS for liquid Project Waste.

6.6.3 Safety Hazards**Potential Impacts**

Safety hazards in operational phase of Projects are mainly associated with Improper handling of sharps, exposure to gases, autoclaves and other equipment. Major risks are fires, explosions, safety incidents and accident

Mitigation Measures

- Project Safety Management Program will be prepared for project.
- EHS Policy shall be prepared and implemented.
- Use safe operating procedures of using sharps, gases, and equipment.
- Use PPEs such as prick proof gloves for handling sharps and use masks to protect from gases.
- For fire protection, Buildings will be provided with fire hydrants at outside buildings, standpipe and fire hose systems, fire sprinklers, and smoke and heat detectors.
- For Occupational Safety and Health, IFC General EHS Guidelines are recommended to be implemented.
- Emergency response plan shall be prepared and implemented to address any fire, explosion, spillage of chemicals or waste or any safety incident or accident.



- The employees must be trained to handle any kind of safety incident which may occur in their concerned areas.
- Prepare MSDS data base for all the material or chemicals used at Project. It should be available all the time for the employees handling these chemicals.

Residual Impact

Strict implementation of the proposed mitigation measures is expected to lower the adverse effects to an acceptable level.

Monitoring Measures

Safety audits will be conducted on regular basis. Safety dash boards shall be created for visualizing safety data and safety performance.

6.6.4 Socio-Economic Impacts

Positive Socio-economic impacts are expected once the Project is operational. These include:

- Job opportunities for professionals, administrative staff and skilled and unskilled maintenance.
- Employment opportunities for local community.
- Expansion of business in neighboring community
- Overall positive impact on Livelihood and economical activities is predicted by operational phase of said Project.



6.7 What is the problem i.e. In terms of “major environmental impacts” which may arise by the subject project activity?

The major impacts which may arise by the subject project are air, water and noise pollution. Other impacts are of minor importance. These impacts may arise during operational phase of the project so they will not cause any major harmful impacts on the environment and during the operational phase of the subject project, they may cause the issues of air, water and noise pollution if proper precautionary measures to avoid this pollution will not be taken but it will be ensured that precautionary measures will be adopted prior to start the activity, during the activity and post activity to cause minimum impacts to the environment.

6.8 When the problem will occur and when it should be addressed?

Negative impacts may arise during the operational phase of the project if proper precautionary measures and procedures will not be followed. If proper precautionary measures and procedures will be implemented, there will not be any major problem. If any impact would arise due to the subject project activity, it will be addressed on site. Trainings will be conducted on site prior to start work while other precautionary measures will also be adopted to make the project safe and environment friendly.

6.9 Where and how the problem should be addressed?

The problem should be address at the site and immediate response should be provided to address the problem which may arise. Top management and HSE team for the implementation of EMP will be responsible for addressing such problems if arise. They will assess any impact that could be arisen during both phases and they would also be responsible to address the problem and to mitigate it. In case of emergency, management should contact with other governmental departments i-e 1122 in case of fire or civil defense to deal with the situation.

6.10 Whys of Achieving Mitigation Measures?

6.10.1 By changing in planning and techniques

By adopting proper mitigation measures, any anticipated major or minor environmental impacts could be controlled or mitigated.

6.10.2 Improved monitoring and management practices:

Management shall take appropriate measures to provide pollution free and safe environment during the project activity by implementing improved management practices and monitoring techniques suggested in EMP.

6.10.3 Replacement, relocation and rehabilitation:

Subject project site is not the property of the government, there is no need of replacement or relocation of a single person or economic activity. Management has done plantation to restore the area after construction. Maximum Plantation will be done with native species within and outside the premises of the industrial estate, along the boundary wall and road side if directed.

6.11 POTENTIAL ENVIRONMENTAL ENHANCEMENT MEASURES

Following necessary measures will be adopted during operational phase of the project:

- Local people will be informed in advance when work is about to start in an area.
- Machinery will never be left unattended.
- Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed.
- Transporters engaged for the project would be forced to adhere to the load specifications of the access road.
- No overloading would be allowed in any case.
- Safety signs and boards will be placed during construction.
- Machinery will be kept maintained.
- Waste water will be treated through septic tank that will be installed within the premises of the subject project.
- Proper SOPs will be followed with proper schedule along with the HSE conditions.
- Area will be restored with native plants.
- Solid waste will be handed over to contractors and agreement will be made.
- Noise will be controlled by adopting proper measures.
- PPEs will be provided to workers during working.
- Firefighting equipment 's and system will be installed.
- Safety signs will be placed at all locations where required.
- Hygienic conditions will be ensured and proper quality will be maintained by quality control testing.

CHAPTER# 7. ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM

7.1 General

The Environmental Management Plan (EMP) of the project provides a plan on how to address identified significant environmental and social impacts to keep it environment friendly during construction and operational phases. This Chapter also presents the Monitoring Plan to check compliance of the EMP and to take timely corrective actions in case any deviation from significant criteria, requirement or goal is found.

7.2 OBJECTIVES OF ENVIRONMENTAL MANAGEMENT PLAN

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.

7.3 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 Officer
- In-Charge Administration
- Supervisor of project

7.4 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.

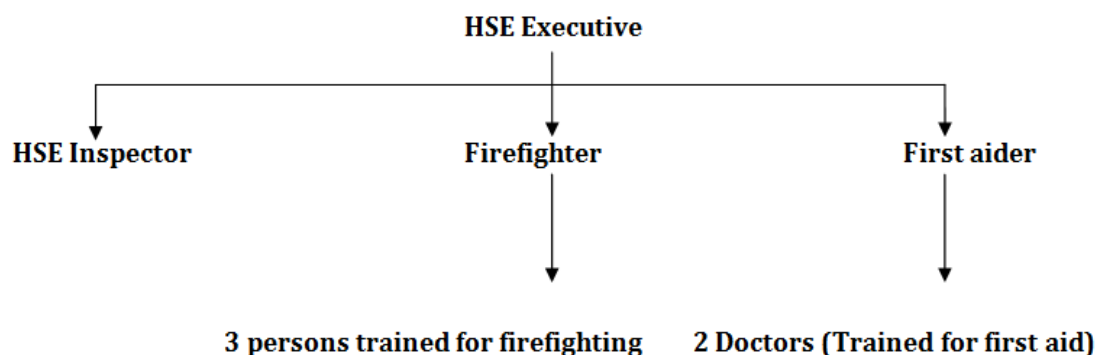


Figure 7-1: Institutional Capacity for the implementation of EMP

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's, 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.

7.4.1 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.

7.5 ENVIRONMENTAL MANAGEMENT PLAN

Table 7-2: EMP of Operational Phase

OPERATIONAL PHASE				
Environmental Component / Impact	Potential Impacts	Mitigation/ Preventive Action	Institutional Responsibility	
			Mitigation	Supervision
Air Quality	– Fumes from formulation of product – Release of particulate emissions from generators – Release of combustion emissions from transport associated with transport of materials to and from the site. – General Indoor Air quality.	Proper maintenance and tuning of vehicles will be ensured to reduce emissions. Internal roads will be maintained properly to reduce fugitive dust and for the smooth movement of vehicles. Adequate greenbelt will be developed and maintained. High quality fuel having low sulfur contents will be used. Fume hood is suggested for fumes.		Proponent / HSE Officer
Noise	– issue of noise is envisaged related to project activities	All operations will be carried out inside the premises. Proper PPE's will be provided to all workers and their use will be made mandatory.		Proponent / HSE Officer

OPERATIONAL PHASE				
Environmental Component / Impact	Potential Impacts	Mitigation/ Preventive Action	Institutional Responsibility	
			Mitigation	Supervision
Water Environment	–	Domestic wastewater generated will be treated in septic tank and then discharged.		Proponent / HSE Officer
Solid Waste	–	For the collection of solid waste, receptacles will be provided at each floor and arrangements will be made to manage waste properly. Waste from such containers shall be collected separately daily. All the collection bins shall be properly maintained on regular bases.		Proponent / HSE Officer
Land Quality	– Accidental release of fuels, oils, chemicals, hazardous materials, etc., to the ground during delivery to the site. – Discharge of pollutants in water used for equipment and vehicle washing to ground	– Appropriate procedures and protocols to be established and monitored for materials delivery and handling. Proponent will have, at all times, clean up kits available. – All storage areas will have appropriate environmental security measures to prevent accidental release to ground. – Washing activities will take place on areas with proper drainage systems with containment and treatment. Effluent, if any,		Proponent / HSE Officer

OPERATIONAL PHASE				
Environmental Component / Impact	Potential Impacts	Mitigation/ Preventive Action	Institutional Responsibility	
			Mitigation	Supervision
		will meet the standards.		
Work environment (including work safety)	– Labor accidents due to handling heavy loads; working at heights; electric shocks – Diseases caused by air pollutants, water pollutants, and noise from the operation	– Prepare a manual for labor accident prevention including safety education and training – Provide workers with appropriate protective equipment – Inspect and ensure that any lifting devices, such as cranes, are appropriate for expected loads – Keep lifting devices well maintained and perform maintenance checks as appropriate		Proponent / HSE Officer
Electric and Fire Hazard	– Electric Shock – Fire	– Use equipment that protects against electric shock – Installing fire extinguishers in fire handling places – Installing firefighting system – Developing firefighting organization and implementing fire drills.		Proponent / HSE Officer

OPERATIONAL PHASE

Environmental Component / Impact	Potential Impacts	Mitigation/ Preventive Action	Institutional Responsibility	
			Mitigation	Supervision
Waste handing over to EPA Certified Contractor for Transport to External Facility for Treatment	– Improper selection of Contractor; Untrained staff, no use of PPEs and non- compliance to waste handling SOPs may result in Occupational Health and Safety Hazards	– Develop and implement SOP for handing over waste to the Contractor including documentation of handing over of different category, mass/volume of wastes, place of origin within hospital and final treatment and labelling on the waste. – Contractor will ensure the transportation, treat/incinerate and dispose of hazardous/biomedical waste in accordance with Punjab HWM Rules 2014. – Transport vehicles will be dedicated for waste only and compartments should be sealed during travel. – Enforce Use of PPEs		Proponent / HSE Officer

7.6 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 10% of total cost of the project as Environmental Budget for meeting the following purposes:

Table 5.3: Allocation of Environmental Budget

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

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:

Table 5.5: Environmental Monitoring

Sr. No.	Components	Parameters	Frequency	Responsibility
			Operation	
1	Ambient Air Quality	(NO ₂ , NO, CO, SO ₂ , O ₃ , PM ₁₀ PM _{2.5} , SPM)	Quarterly	HSE Officer
2	Noise	Noise Level dB(A) Survey	Quarterly	HSE Officer
3	Wastewater Effluent	Parameters as PEQS	Quarterly	HSE Officer
4	Exhaust Emissions	CO, SO ₂ , NO _x , Particulates (PM ₁₀ , PM _{2.5})	Quarterly	HSE Officer
5	Oil/Fuel Spillage	Visual Inspection	Continuous	HSE Officer
6	Water Contamination	Drinking water PEQs, WHO Guidelines Parameters including Fecal Coliform	Quarterly	HSE Officer
7	Environment/Safety Audit	Environment Management Plan	Annual	HSE Officer
8	Managerial Plans	Close monitoring to assess compliance of construction and operational activities under: - Waste Management Plan - Emergency Response Plan (drills) - Traffic Management Plan	Regular Monitoring and Quarterly Audits	HSE Officer
9	Water Conservation	Visual Inspection /wastages	Continuous	HSE Officer

CHAPTER# 8. STAKEHOLDERS AND PUBLIC CONSULTATION

The consultation process with various stakeholders of ESPAK 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 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.

8.3 Identification of Main Stakeholders

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 does not have direct impacts on any individual; therefore, no 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, Project 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.

8.4 Meetings with Stakeholders

A series of consultation was carried out with stakeholders and general public in nearby areas.

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

Sr. No.	Agency / Department / Stakeholder	Representative	Apprehensions Raised	Suggestions
1.	Environmental Experts	Site Inspector Environmental	– The Project is a good initiative taken by Proponent; as it will provide job opportunities to the local residents. – Health and safety issues may arise for local community and workers due to construction activities. – If tree cutting is involved then it should be avoided as much as possible.	– Proponent shall use latest technology to remove fine particles, like dust and smoke, from a flowing gas to combat air pollution. – Health and Safety Management Plan should be prepared and implemented to avoid health and safety issues occurring during construction period of the Project. – Solid waste produced should be properly managed and disposed of in identified designated areas. – Proper barricading shall be provided along excavation sites to avoid accidents and casualties. – Community Development Programs shall be initiated by PROPONENT to uplift social living standard of the local residents.

2.	The Responsible Authority	Assistant Director Wildlife	– The Project is a good initiative taken by PROPONENT as it will provide job opportunities to the local residents. – No Wildlife Sanctuary and game reserve falls in the study area. Therefore; there is no threat to wildlife species.	– Ensure continuous sprinkling of water on daily basis in the Project area to reduce emission of dust particles. – SOPs related to COVID-19 issued by Government of Punjab should be implemented during construction period to avoid outbreak of COVID-19.
3.	Other Departments.	Assistant Director Fisheries	– The Project is a good initiative taken by PROPONENT; as it will provide job opportunities to the local residents. – No fisheries are present in the area	– PROPONENT shall ensure that waste water will not be disposed without treatment.
4.	Proponent Environment Management Team	Environmental Manager	– The Project is a good initiative taken by PROPONENT; as it will provide job opportunities to the local residents. – No reserve forest is present in and around the study area.	– Provision in Client budget for tree plantation and its maintenance cost for three (03) years, for the trees that will be planted in and around the study area, as a compensation for the trees that will be bowdlerized and as an absorbent for air pollutants due to the

				implementation of the proposed Project. – Sheesham and Eucalyptus shall be suggested in the tree plantation plan for plantation with three (03) rows. – SOPs related to COVID-19 issued by Government of Punjab should be implemented during construction period to avoid outbreak of COVID-19.
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8.5 Analysis of Stakeholder Consultation

8.5.1 Sample Size

Sample size was selected by the Team of consultants for conducting the socioeconomic survey.

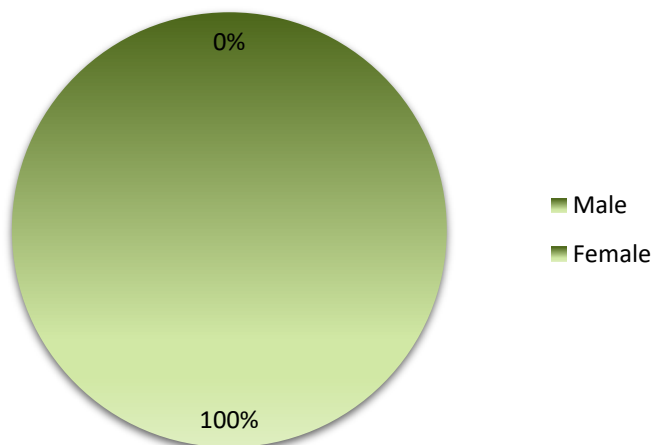
8.5.2 Statistical Analysis

Statistical analysis of the data collected during the visit of study site villages through questionnaires.

These questionnaires (Stakeholder Survey Form with CNIC) are attached as ANNEXURE-J.

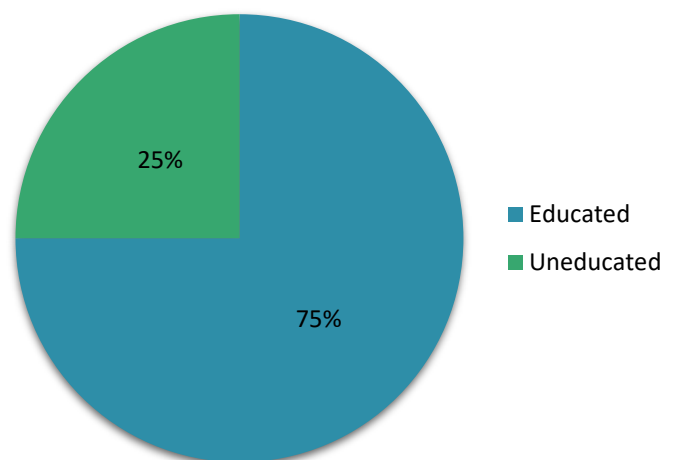
8.5.3 Result and Discussion

Respodents

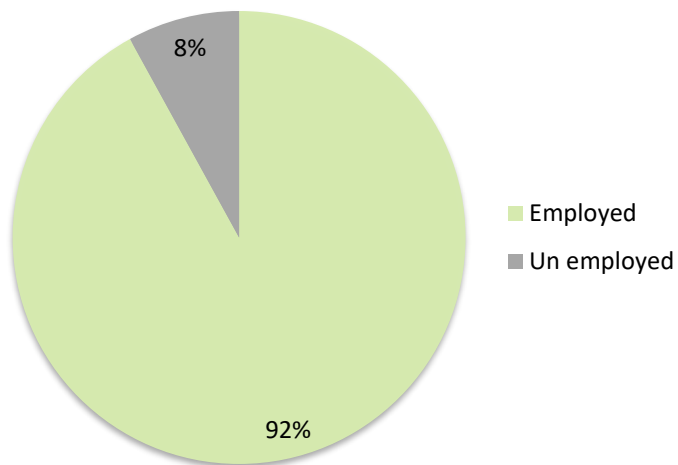


Gender Ratio of Respondents

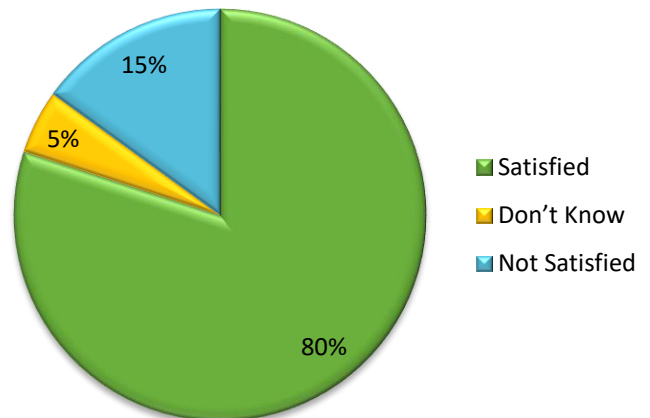
Education Status of Respondents



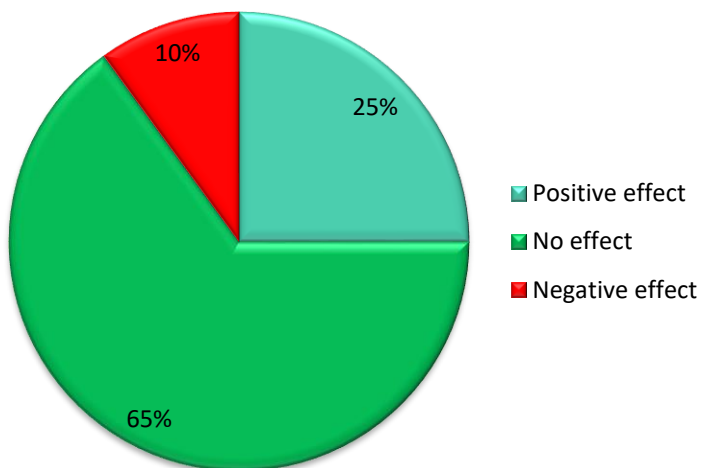
Education status of respondents

Occupation of the Respondents

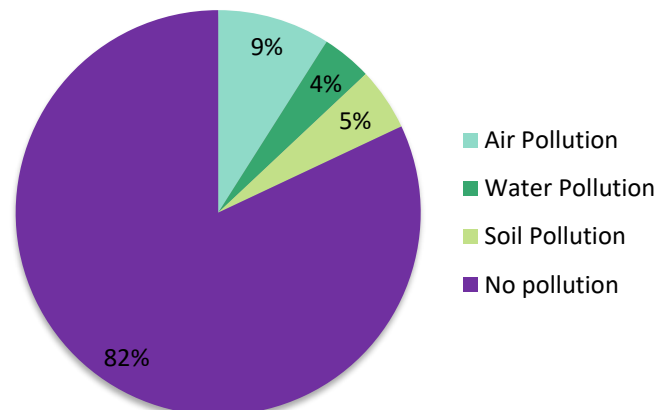
Occupation of respondents

Satisfaction of Employees

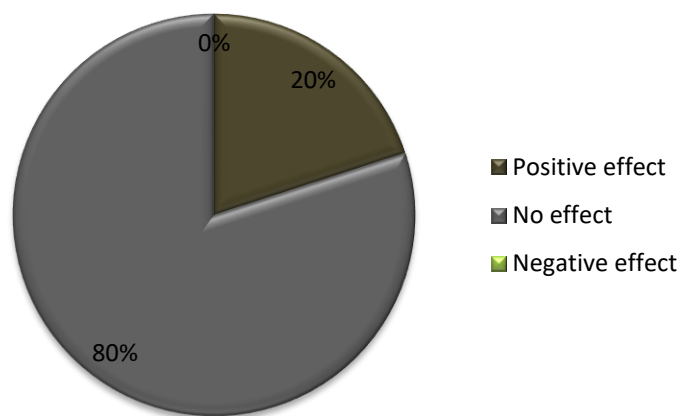
Satisfaction of respondents

Effect of Project on the Local Environment

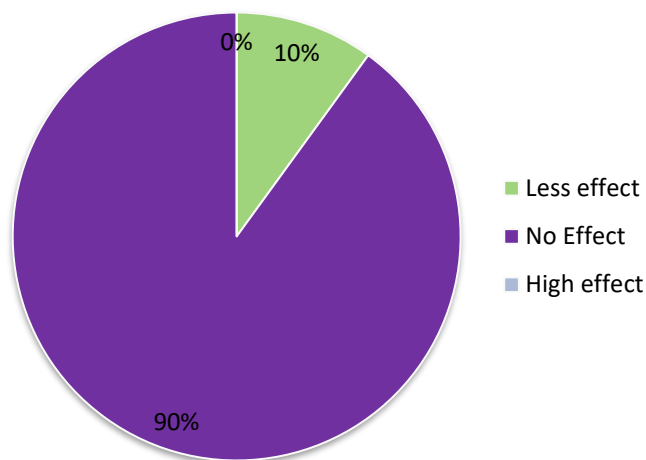
Effect of project on local environment

Types of Pollution caused by the Project

What type of pollution caused by project

Effect of Project on Living Standards of the Area

Effect of project on the living standard of area

Effect on Plant Species of the Area

Effect on plant species of area

According to graphical representation, 100 percent respondents were male while the numbers of females were 0 because no female is available on that site. 75 % respondents were educated while 25% were uneducated. So, according to the survey overall education status of the area is good. As per survey, 80% people were satisfied with the project and they gave positive remarks regarding the proposed unit and project as they got job over there, their living standard raise over working there. While 5% respondents were have no opinion regarding the project and 15% respondents were not satisfied with the production unit due to their concern regarding the aesthetic degradation and no preference to local people for jobs. Majority were in favor that no effect will produce by this project.

Baseline Monitoring and Project Site Pictures

8.6 Summary of Issues Raised by Stakeholders

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

Table 6.1: Summary of issues and commitments by Proponent

Issue	Aspect/ Concern raised by Stakeholders	Project Proponent Commitments
Employment Opportunities	Expectations of employment are very high.	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. The internship program will offer to the students to develop professional skills.
Health & Safety	Health and safety issues may be arising due to industrial activity.	All possible safety measures will be taken during operation phase. Proponent has designated teams for HSE concern a.k.a. Emergency Response Teams (ERTs) and 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 operation 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 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.

CHAPTER# 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 Pharma Lord 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.

CHAPTER# 10. REFERENCES:

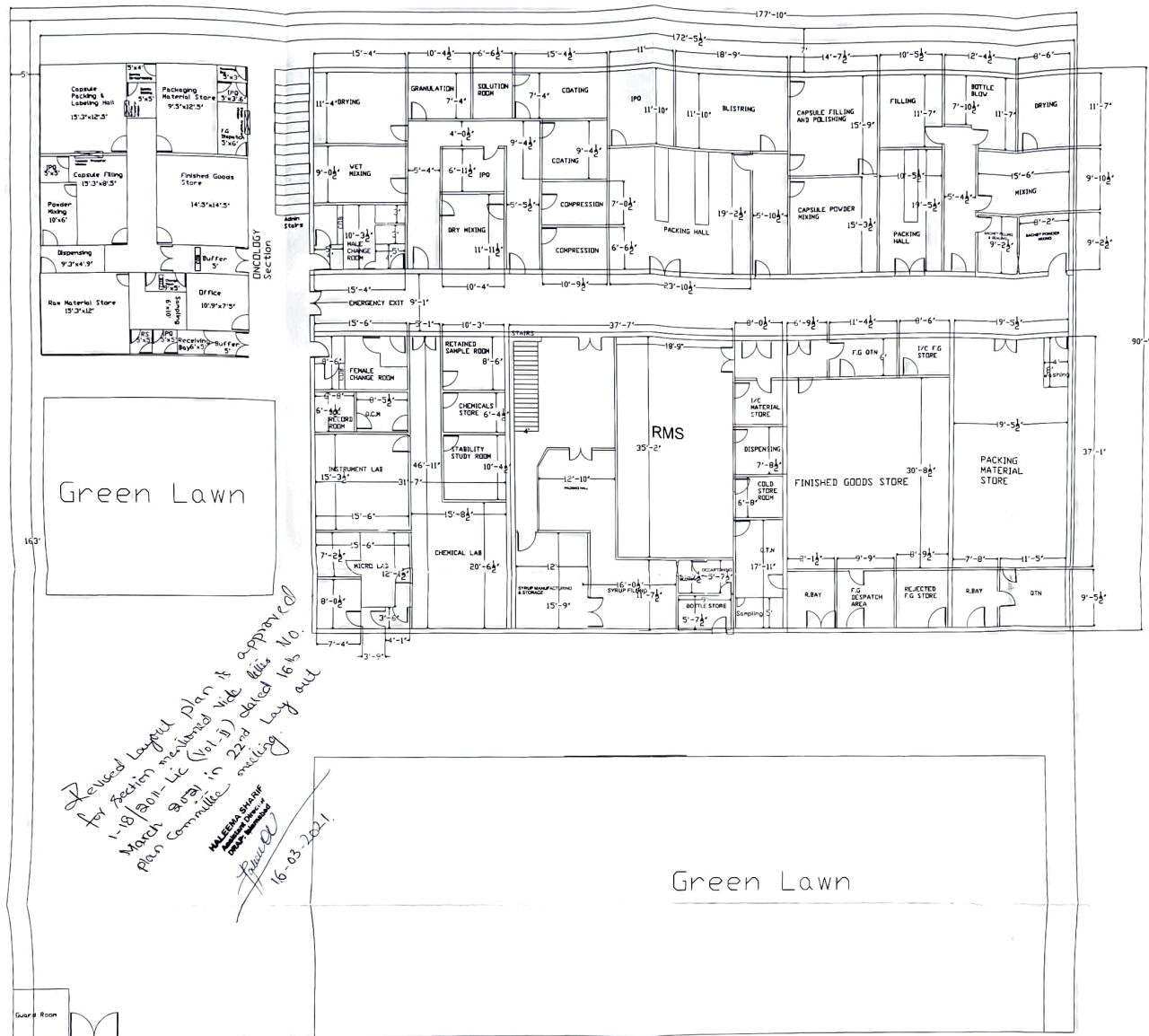
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- Schedule I of Punjab Environmental Protection Act 1997 (Amended 2012)
- *section 12 of Punjab Environmental Protection Act 1997 (Amended 2012)*
- Pakistan Environmental protection act 1997
- Punjab Environmental Protection Act 1997 (Amended 2012)
- 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>)
- Attock Chamber of Commerce Industries (<http://www.acci.org.pk/Attock.html>)
- Sectorial Guideline for environmental reports, industrial states
- Pakistan Environmental Protection ordinance (PEPO), 1983
- OSHAS 1800 for health and safety

CHAPTER# 11. 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 – A

Project Layout Map



PHARMA LORD (PVT.) LTD.
12KM LAHORE ROAD. LAYYAH

Annexure – B

Google Map

Pharma Lord (Pvt.) Ltd

12-KM Lahore Road Layyah

Legend

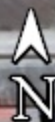


Pharma Lord (Pvt.) Ltd

Pharma Lord (Pvt.) Ltd

Google Earth

Image © 2023 Airbus



300 ft

Annexure – C

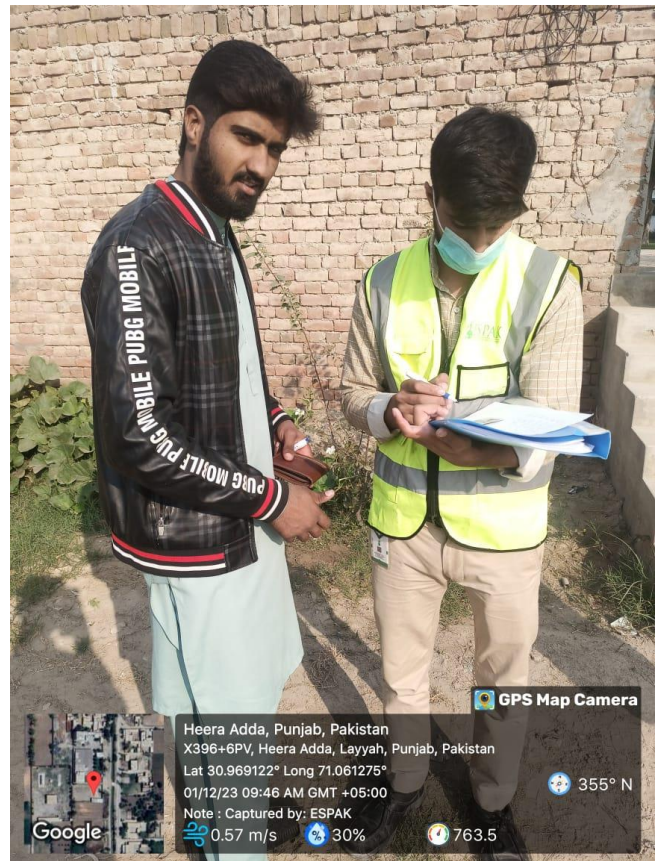
Stakeholder Survey Form with
CNICs and Picture

LIST OF RESPONDENTS

Muhammad Asif	-----
Ishtaq Ahmed	-----
Nasir Abbas	32201-6228505-3
Muhammad Hafeez	-----
Muhammad Usama Rehman	-----
Ali Hamza	32203-5967098-1
Mudasir Ali	-----
Asmalullah	32203-90857654-3
Muhammad Faizan	32203-88817751-1
Munir Ahmed	32203-3335013-7
Saleem Ahmed	36502-7082480-5
Fakhar Abbas	32202-5525570-5

Project Consultation at project area







Annexure –D

Lab Reports with Validation form

CHEMICAL ANALYSIS TEST REPORT (AMBIENT AIR)



Reference Number: ESPAK/0766P/23/AA/7256/00662 Date: 07/12/2023

Name of Industry/Client: Pharma Lord (Pvt) Ltd

Address: 12-Km Lahore Road, Layyah

Telephone No.: ---

Nature of Sample: Ambient Air Monitoring Location: Mid Point of Site (GPS: 30.969318°N 71.061339°E)

Date of Sample Collection: 30/11/2023 Grab / Composite: Continuous- 24 Hours

Sample Collected/Sent By: Mehmood Aslam, Analyst (Field), ESPAK

Date of Completion of Analysis: 01/12/2023

S. No	Parameters	Limit Values (PEQS-24Hours)	Concentration	Method / Equipment Used	Remarks
1	Carbon Monoxide (CO)	5 mg/m ³ (8 Hours)	0.7 mg/m ³	Non Dispersive Infrared Absorption (NDIR)	Within Prescribed Limits
2	Sulfur Dioxide (SO ₂)	120 µg/m ³	11.1 µg/m ³	UV Fluorescence (UVF)	Within Prescribed Limits
3	Ozone (O ₃)	130 µg/m ³ (1 Hour)	15.7 µg/m ³	Non Dispersive UV Absorption	Within Prescribed Limits
4	Oxides of Nitrogen as NO	40 µg/m ³	13.4 µg/m ³	Chemiluminescence Detection	Within Prescribed Limits
5	Oxides of Nitrogen as NO ₂	80 µg/m ³	18.1 µg/m ³	Chemiluminescence Detection	Within Prescribed Limits
6	Particulate Matter PM _{2.5}	35 µg/m ³	32.7 µg/m ³	Particulate Sensor	Within Prescribed Limits
7	Particulate Matter PM ₁₀	150 µg/m ³	142 µg/m ³	Particulate Sensor	Within Prescribed Limits
8	Suspended Particulate Matter (SPM)	500 µg/m ³	395 µg/m ³	Particulate Sensor	Within Prescribed Limits

PEQS: Punjab Environmental Quality Standards for Ambient Air, 2016

Uncertainty of Measurement (UoM) data will be provided on request, where available. The statement of conformity, if provided in the report, is based on the decision rule of simple acceptance or rejection with equal shared risk due to measurement uncertainty.

Note:

- The report should be reproduced as a whole and not in parts.
- The responsibility of the ethical use of this report lies with the client.
- The values represent sample conditions when monitoring/testing was carried out.
- The report data is not intended to be used legally by the client.

1. Sample Analyzed By: Mehmood Aslam
Analyst (Field)

2. Name of Chief Analyst with Seal: Muhammad Arfan

3. Signature of Incharge of the Environmental Laboratory:

Name: Imran Malik

General Manager

Date: 07/12/2023

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



 **Lahore Office**
Office No. 731,
Block - 2, Sector D1,
Shah Jilani Road, Township
Lahore, Pakistan.
Tel: +92 (42) 3515 4015-16

 **Islamabad Office**
Office No. 314, 3rd
Floor, Gulberg Empire,
Gulberg Greens,
Islamabad, Pakistan.
Tel: +92 (51) 5915060

 **Peshawar Office**
Unit No. 244-TF,
Dean's Trade Center
Sadat Cantt,
Peshawar, Pakistan.
Tel: +92 312 0849999

NOISE MONITORING REPORT



Reference Number: ESPAK/0766P/23/N/7257/00761 Date: 07/12/2023

Name of Industry/Client: Pharma Lord (Pvt) Ltd

Address: 12-Km Lahore Road, Layyah

Telephone No.: ---

Nature of Sample: Noise

Date of Sample Collection: 30/11/2023 Grab / Composite: Continuous - 24 Hours

Sample Collected/Sent By: Mehmood Aslam, Analyst (Field), ESPAK

Date of Completion of Analysis: 01/12/2023

Method/Equipment Used: Sound Level Meter

S. No	Measurement Point	Limit Values (PEQS)	Noise Level in dB(A) Leq	Remarks
1	Mid Point of Site (GPS: 30.969318°N 71.061339°E)- Day time	75 dB(A)	51 dB(A)	Within Prescribed Limits
2	Mid Point of Site (GPS: 30.969318°N 71.061339°E)- Night time	65 dB(A)	49 dB(A)	Within Prescribed Limits

PEQS: Punjab Environmental Quality Standards for Noise in Industrial Area, 2016 Day Time Hours (6:00 am to 10:00 pm) Night Time Hours (10:00 pm to 6:00 am)

- Uncertainty of Measurement (UoM) data will be provided on request, where available. The statement of conformity, if provided in the report, is based on the decision rule of simple acceptance or rejection with equal shared risk due to measurement uncertainty.

Note:

- The report should be reproduced as a whole and not in parts.
- The responsibility of the ethical use of this report lies with the client.
- The values represent sample conditions when monitoring/testing was carried out.
- The report data is not intended to be used legally by the client.

1. Sample Analyzed By: Mehmood Aslam
Analyst (Field)

2. Name of Chief Analyst with Seal: Muhammad Arfan 

3. Signature of Incharge of the Environmental Laboratory:

Name: Imran Malik
General Manager

Date: 07/12/2023

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



CHEMICAL ANALYSIS TEST REPORT (GROUND WATER)



Reference Number: ESPAK/0766P/23/GW/7258/01557 Date: 07/12/2023

Name of Industry / Client: Pharma Lord (Pvt) Ltd

Address: 12-Km Lahore Road, Layyah

Telephone No: -----

Nature of Sample: Groundwater

Date Sample Received: 02/12/2023 Grab / Composite: Grab

Date of Sample Collection: 01/12/2023

Sample Collected / Sent By: Mehmood Aslam, Analyst (Field), ESPAK

Date of Completion of Analysis: 07/12/2023

S. No	Parameters	Limit Values (DW-PEQS)	Concentration	Method / Equipment Used	Remarks
1	Total Coliforms	----	ND	SMWW 9222 B	----
2	Fecal Coliform Bacteria	Must not be detectable in any 100mL sample	ND	SMWW 9222 H	Within Limits
3	E. Coli	Must not be detectable in any 100mL Sample	ND	SMWW 9222 H	Within Limits
4	Color	≤15 TCU	ND	SMWW 2120 C	Within Limits
5	Taste	Non Objectionable / Acceptable	Acceptable	Organoleptic	Within Limits
6	Odor	Non Objectionable / Acceptable	Acceptable	Organoleptic	Within Limits
7	Turbidity	<5 NTU	0.2 NTU	SMWW 2130B	Within Limits
8	Total Hardness as CaCO ₃ *	<500 mg/L	225 mg/L	SMWW 2340C	Within Limits
9	Total Dissolved Solids (TDS)*	<1000 mg/L	596 mg/L	SMWW 2540C	Within Limits
10	pH*	6.5-8.5	7.4	SMWW 4500H*B	Within Limits
11	Chloride (as Cl ⁻)*	<250 mg/L	6 mg/L	SMWW 4500Cl ⁻ B	Within Limits
12	Cyanide (CN ⁻)	≤0.05 mg/L	ND	SMWW 4500 CN ⁻ F	Within Limits
13	Nitrate (NO ₃ ⁻)	≤50 mg/L	35 mg/L	SMWW 4500NO ₃ ⁻ B	Within Limits
14	Nitrite (NO ₂ ⁻)	≤3 mg/L	0.3 mg/L	SMWW 4500NO ₂ ⁻ B	Within Limits
15	Residual Chlorine	0.2-0.5 mg/L	ND	SMWW 4500-Cl B	----
16	Phenolic Compounds (as Phenols)	NGVS	ND	SMWW 5530 C	----
17	Fluoride (F ⁻)*	≤1.5 mg/L	0.2 mg/L	U.S. EPA 9214	Within Limits
18	Aluminum (Al)	≤0.2 mg/L	0.1 mg/L	U.S. EPA-200.7	Within Limits
19	Chromium (Cr)	≤0.05 mg/L	ND	U.S. EPA-200.7	Within Limits
20	Copper (Cu)	2.0 mg/L	ND	U.S. EPA-200.7	Within Limits
21	Antimony (Sb)	≤0.005 mg/L	ND	U.S. EPA-200.7	Within Limits
22	Lead (Pb)	≤0.05 mg/L	ND	U.S. EPA-200.7	Within Limits

CHEMICAL ANALYSIS TEST REPORT (GROUND WATER)

Reference Number:

ESPAK/0766P/23/GW/7258/01557

Date: 07/12/2023

Name of Industry / Client:

Pharma Lord (Pvt) Ltd



S. No	Parameters	Limit Values (DW-PEQS)	Concentration	Method / Equipment Used	Remarks
23	Manganese (Mn)	≤0.5 mg/L	ND	U.S. EPA-200.7	Within Limits
24	Mercury (Hg)	≤0.001 mg/L	ND	U.S. EPA-200.7	Within Limits
25	Nickel (Ni)	≤0.02 mg/L	ND	U.S. EPA-200.7	Within Limits
26	Arsenic (As)	≤0.05 mg/L	ND	U.S. EPA-200.7	Within Limits
27	Barium (Ba)	0.7 mg/L	0.2 mg/L	U.S. EPA-200.7	Within Limits
28	Cadmium (Cd)	0.01 mg/L	ND	U.S. EPA-200.7	Within Limits
29	Selenium (Se)	0.01 mg/L	ND	U.S. EPA-200.7	Within Limits
30	Boron (B)	0.3 mg/L	ND	U.S. EPA-200.7	Within Limits
31	Zinc (Zn)	5.0 mg/L	0.2 mg/L	U.S. EPA-200.7	Within Limits

DW-PEQS: Punjab Environmental Quality Standards for Drinking Water Quality, 2016

SMWW: Standard Methods for the Examination of Water and Waste Water 23rd Edition, American Public Health Association, American Water Works Association, Water Environment Federation USA (2017)

USEPA: United States Environmental Protection Agency

NGVS: No Guideline Value Set

ND: Not Detected

- Laboratory tests and measurements were carried out at 25 ± 5 °C and 50 ± 20 % Relative Humidity conditions unless required otherwise.
- Uncertainty of Measurement (UoM) data will be provided on request, where available. The statement of conformity, if provided in the report, is based on the decision rule of simple acceptance or rejection with equal shared risk due to measurement uncertainty.

Note:

- The report should be reproduced as a whole and not in parts.
- The responsibility of the ethical use of this report lies with the client.
- The values represent sample conditions when monitoring/testing was carried out.
- The report data is not intended to be used legally by the client.
- Only parameters marked with asterisk (*) are ISO 17025:2017 accredited.

1. Sample Analyzed By: Samahir Khalid (Analyst (Chemical)), Abdul Aziz (Analyst (Chemical)), Muhammad Shahid (Analyst (Chemical)), Khizra Bano (Analyst (Microbiology)), Saima Raiz (Analyst (Chemical))

2. Name of Chief Analyst with Seal: Muhammad Arfan

3. Signature of Incharge of the Environmental Laboratory:

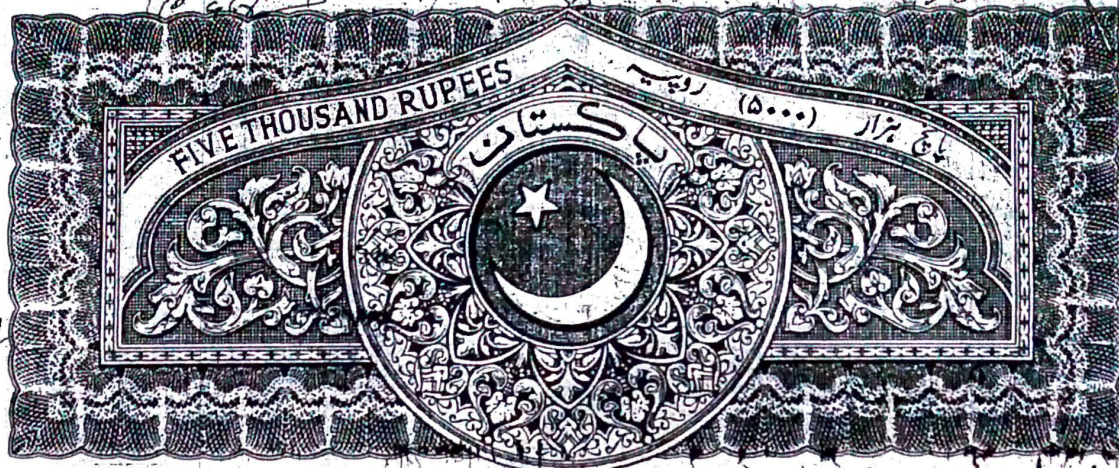
Name: Imran Malik
General Manager
Date: 07/12/2023

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



Annexure –E

Land Ownership Document



بیت امامہ الہامی بہرہ ۲ - ۶ سال (سات سال) بعد چارہ ہوا

الہامی بہرہ

واقع بیرون حدود بمبئی چھ ۱۳۶ / TDA تحصیل وضع کیے

بالکھن مبلغ ۱۴۰۰۰۰۰ روپے

مستند محمد اکرام نظامی ولد حاجی نور دین قوم شیخ العسادی سندہ کسان ۴۱۵

حد قاضیا نوالہ وارڈ ۷ کی تحصیل وضع کیے ۵-۱۴۷۵۲-۳۲۲۰۳ P میں

اقوام معتبرہ برکتی سندھ میں جو کما حقہ سندھ میں ہو کر تیار اور مستند ہیں

جوہر الہامی سندھ میں

نام ماتر حد احوال

محمد اکرام نظامی ولد حاجی نور دین ۲۲ ✓ ۱۱-۱۴۴۳ ✓ ۱۴۰ ✓ ۲۸۸۷۱ ✓ ۷-۵

قوم شیخ العسادی

(سات سال وضع)

۱۳۱ روپے

محمد اکرام نظامی

500005 در آراء نظامی علامه حاجی محمد ربیع قزوینی
 300000 از دارایی سند و کاتبان و 15/3
 01-12-2010

طرح 2200000
 280000
 حق استیفاء
 TDA کاتونی
 4000000

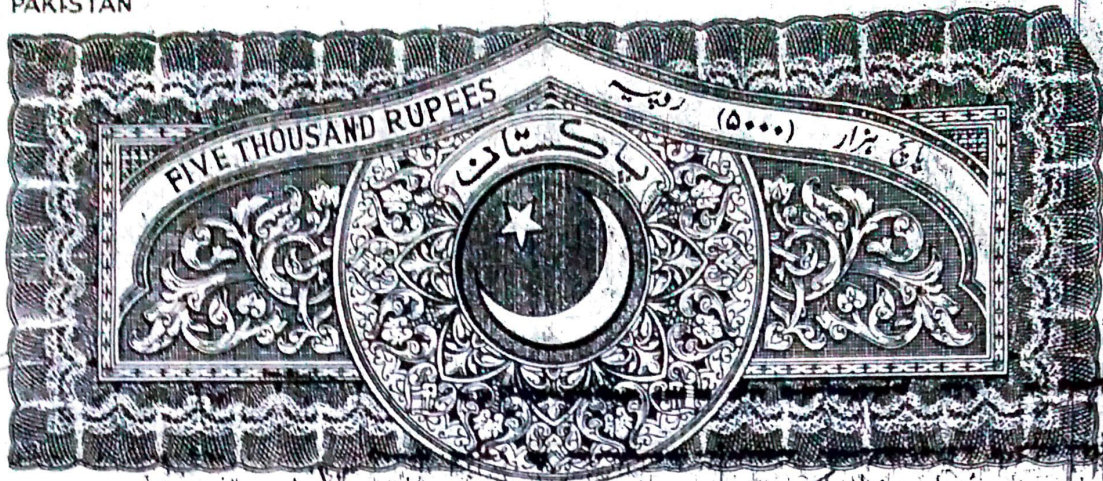
1-12-2010
 Assistant Treasurer
 Sadat Treasury Lashan
 در آراء نظامی بابت

مبلغ 1400000
 1331
 1331

مبلغ 1400000
 1331
 1331

مبلغ 1400000
 1331
 1331

1331



واقعہ ۱۳۸۷/۱۳۸۸ فصل خربازہ مہر و دے راجہ فقہ المرن سال ۲۰۰۶-۰۷

فصل فی بیان احوال و مشیقات در این سفر
در روز بیست و دوم از کربلا به بغداد رسیدیم

و تقویٰ من ائمتہ جو قبل از ان کسی دین سے نہ تھے نہ تھے۔

اراضی منکودہ کے متعلق نہ تو کوئی حکم اقتصادی جاری شدہ ہے اور

منہ کوئی دعویٰ یا شہادہ کہی عدالت میں فرما سماعت ہے۔

بلکہ غیر فتنہ زدہ سر پاک ماضی ہے جو بہترین حدود ملتی ہے۔

کے: $\frac{136}{TDA}$ تحصیل فضلہ کیہ محدود محدود ذیل ہے

سندھ

72- 91-

کتابخانه
 مسجد
 شماره ۱۱
 اوراقی معبره
 سال ۱۳۱۷

273-

س: 163 -

خبرو

شتر: شتر عام موند

مربا . . . رجب طبعی الله ذکره قصائی

نمائند :- کہناات ملتبی تھریو یوسف و غیرہ اقوام اودھ

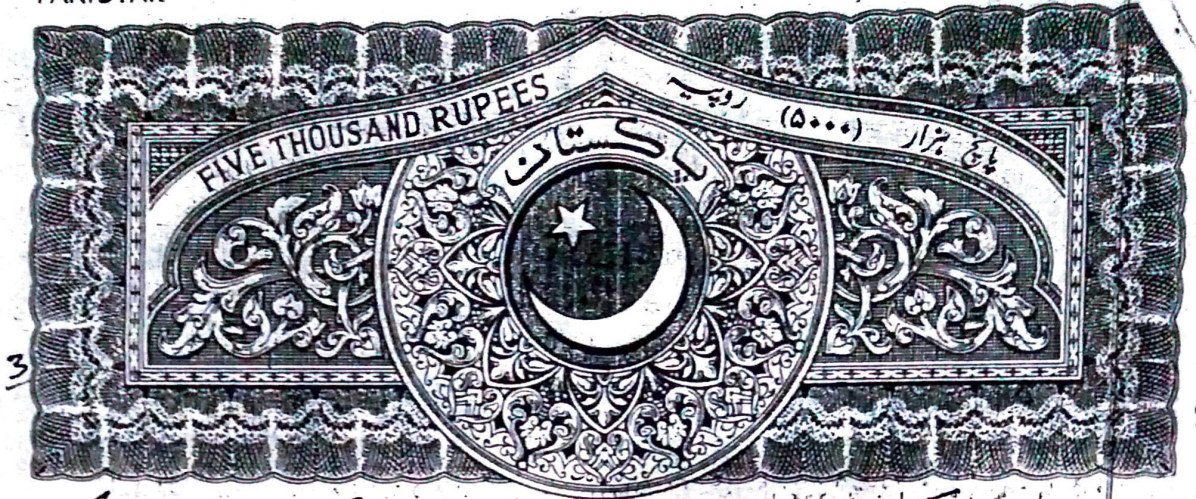
مسجد حسنة جامعہ التوحید - 212

بنوباء - رتبة مائنة الدودة قعائي

عہد اکرام نظامی

SL

1513
10/12/2010
Assistant Treasurer
Sagor Treason, Layyah



جس کا موقع پر قریب دس لاکھ روپے ہے۔ چونکہ مختلف مصلحتوں کا
 مجموعہ ہے اس لئے مختلف ادائیگیوں کا بلانہ ملے گا۔
 داخلی، خارجی، ہوا، برقی، راستہ آمد و رفت سمیت ان کی تمام
 تعلقہ و مفصلہ اس میں داخل ہے۔ ۱۴۰۰۰۰۰ روپے (چودھ لاکھ روپے)
 کسٹم، بندہ بندہ ۷۰۰۰۰۰ روپے (سات لاکھ روپے) کے
 رائج اوقات کے ہوتے ہیں بدست عاصم محمود، عمر رضوان
 سربراہ محمد احمد اقوام اور اس کے خزانہ کی دوسری کمانڈر کیہ تحصیل فیصلے کیے
 ہر دو کتبہ برابر بیع قلمی و خطی کے مل کر کے
 مختلف حوالے مستبران کر دیا ہے۔ اس کے ذریعہ مستبران
 سے قبل اس میں نقد و جمل ہے کچھ نقد یا نقد مستبران

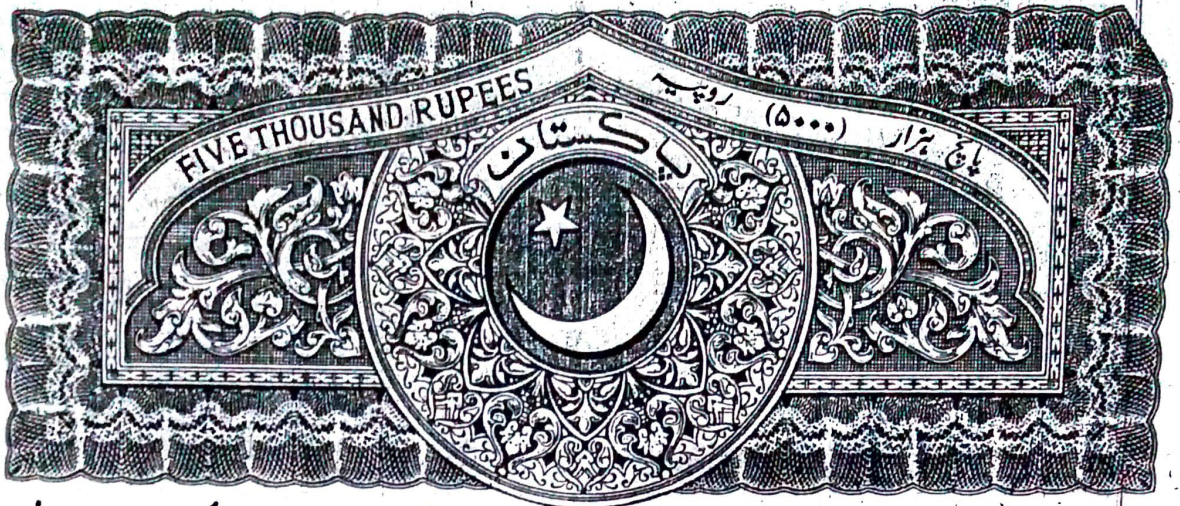
محمد اسلم خاں
 [Signature]

1513

01-12-290

Assistant Treasurer
Saidar Treasury Layan





یہ ہے اس قدر حقوق نفع و بلور مال، مالین
 ارفی بیوہ کے اصل کے معقم بیع کر دیئے ہیں اجوز
 ہے مستبرن ارفی بیوہ کے بمثل نفع مال، مالین
 مالین بن گئے ہیں یہ ہے دستاویز بیوہ
 زرخش مستبرن نے از گہ خود کیا۔

رحمہم اللہ بفضلہ کار ادوی گھٹا کا غدا
 مال میں انڈیا کے ادوی گما - ورنہ چھ - روپیہ
 اصغر صاحب لقمہ فی زیوتہ - امت مال بیع
 بحق مستبرن غیری ہم جو بوجی میں منکر و لقمہ

عہدہ اسم لقمہ
 عہدہ

1513
01-12-2010

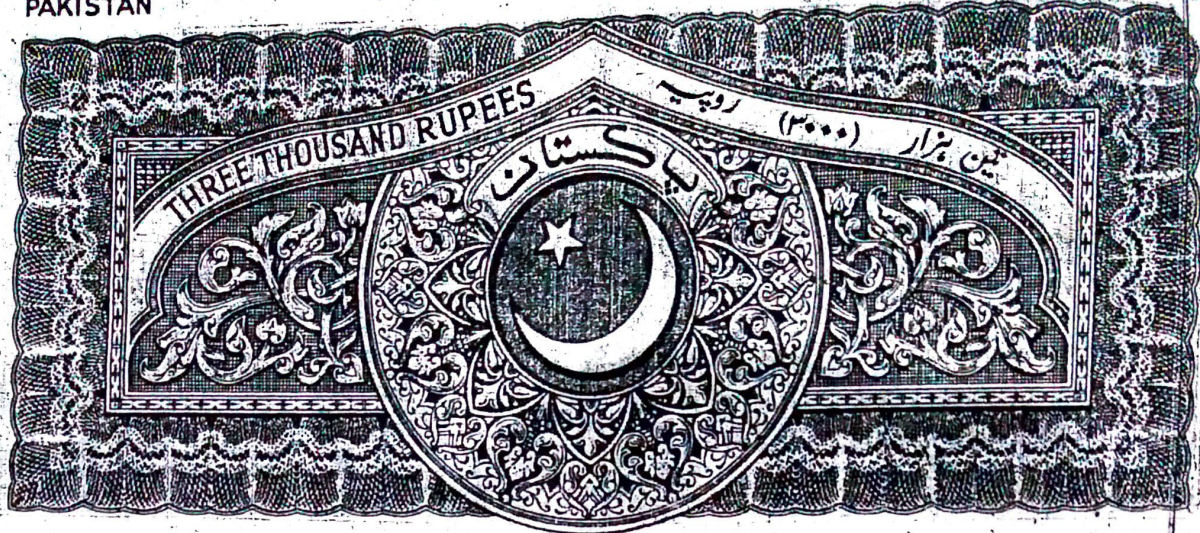
Assistant Treasurer
Sunder Treasury Laggah



Assistant Treasurer
Sadder Treasury Layyah

1513

01-12-2010



لَا يَفْضِيهِ إِلَّا بِرِضَا نَدَى خُودِ سَدِّدِ يَمُونِ نَاهِ سَدِّدِ رِضَا بَوَاقِ

خزائن کا نام آء = تہہم کہہ حضرت ۱۲/۱۰/۲۰۱۰

گواه
محمد طاهر خان و دد دد و دد
قوم بهمان
محمد محمدی
محمد صالح و دد و دد

MTech/KJen

Handwritten signature and date: 01/12/10

03006761869

15/3
2016
61
Assistant Treasurer
Secretary Layyah

1 2020
1/12
2016

Sell
سید محمد علی

Annexure – F

Company Registration SECP &
Form 29



SECURITIES AND EXCHANGE COMMISSION OF PAKISTAN

COMPANY REGISTRATION OFFICE

MULTAN

CERTIFICATE OF INCORPORATION

(Under Section 32 of the Companies Ordinance, 1984 (XLVII of 1984))

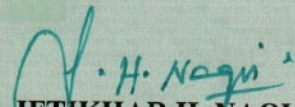
Corporate Universal Identification No. **0073733**

I hereby certify that **"PHARMA LORD (PRIVATE) LIMITED"** is this day incorporated under the Companies Ordinance, 1984 (XLVII of 1984) and that the company is limited by Shares.

Given under my hand at **Multan** this **Seventh** day of **October, Two Thousand and Ten**.

Fee Rs. **2500/-** (Rupees Two Thousand Five Hundred Only)




(S. IFTIKHAR H. NAQVI)
Deputy Registrar of Companies
Multan

No. DRM/ **1134**

Dated: October 07th, 2010

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



PART-I

1. CUIIN (Incorporation Number) 0073733

2. Name of Company PHARMA LORD (PVT.) LIMITED

3. Fee Payment Details

3.1 Challan Number F-2023-1357099 1.3.2 Amount 550.0

PART-II

Particulars:

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/indepen- dent/additional/ other) (j)
Talib Zafar Associates			Mr. A Shesh Mehl Corony, Abdali Road, Multan- Pakistan	Auditor	Pakistan		28/10/2022	Re- Appointment /	

2. Ceasing of Officer/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/indepen- dent/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/indepen- dent/additional/ other) (j)

* In the case of a firm, the full name, address and above mentioned particulars of each partner, and the date on which each became a partner.

** In case the nationality is not the nationality of origin, provide the nationality of origin as well.

*** Also provide particulars of other directorships or offices held, if any.

**** In case of resignation of a director, the resignation letter and in case of removal of a director, member's resolution be attached.

***** In case of a director nominated by a member or creditor the name of such nominating or appointing body shall also be mentioned in column (i), and a copy of resolution from the nominating or appointing body be attached.

PART-III

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 Asim Mehmood Chief Executive

3.3 Signature Electronically signed by Asim Mehmood

3.4 Date (DD/MM/YYYY) 28/01/2023

3.5 Registration No of Authorized Intermediary, if applicable

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Annexure –G

CV of EHS Manager



NASIR ABBAS

Mobile: +92-304-7415751
Address: Chak # 407/ DTA, Tehsil Chubara, Distt. Layyah.
E-mail: readerofchemistry1@gmail.com

Objective:

“To pursue a professional, Satisfying & Challenging career that will broaden my Experience as well as enhance my professional growth, I am looking for a dynamic position in the well reputed organization”.

Personal Detail:

- Father's Name : Nadir Hussain
- Date of Birth : 20-11-1997
- Nationality : Pakistani
- Marital status : Single
- CNIC # : 32201-6228505-3
- Religion : Islam

Employment History

Pharma Lord Pvt. Ltd.

Layyah Pakistan

Designation:

April, 2021 to till Now
Manager EHS

Previous Experience

Six month Experience in Selmore pharmaceutical pvt. Ltd. Lahore

Technical Skills

- **Skilled in operating equipments regards testing of in process in finished products.**
- UV-VIS spectrophotometer (UV 4000 ORT)
- UV-VIS spectrophotometer (UV 6000 ORT)
- HPLC System with quaternary pump, Diode Array Detector (A-10 Series shimadzu)
- FTIR (ALPHA-P Bruker)
- TOC Analyser (sievers M9)
- Coulter liquid particle counter (Z back man)
- Karl fischer (TitroLine 7500 KF)
- Viscometer (1-VDV-1 Brookfield)
- Dissolution apparatus
- DT apparatus
- Hardness tester
- Vortex mixer
- PH & conductivity meter, moisture analyzer (Mettler Toledo)
- All types of titrations
- Melting point apparatus (stuart)



- Polarimeter (polax- 2 Atago)
 - Polarimeter digital InsMark
 - Refractometer (IR120 InsMark)
 - Documentation regarding, inprocess and finished products testing, raw material testing, and packing material testing.
- Method validation

Education

Degree	CGPA	Year	Board
M.Sc. (Organic Chemistry)	3.31/4.00	2020	GCUF Layyah Campus
B.Sc (Botany, Zoology, Chemistry)	465/800	2018	Baha-ud-Din Zikriya University
F.Sc Pre Maedical	775/1100	2016	BISE , DG Khan
Matric Science	789/1050	2013	BISE , DG Khan

Language

- ❖ Urdu
- ❖ English
- ❖ Punjabi
- ❖ Saraiki

Reference

Will be provided on demand.

Annexure –H

Pictorial Evidence of Firefighting



