ENVIRONMENTAL IMPACT ASSESSMENT REPORT

(EIA)

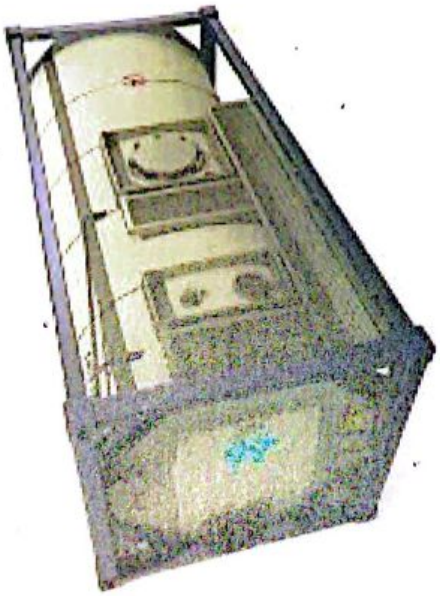
ESTABLISHMENT OF

M/S AGRIMORE PVT. LTD.

PETROLEUM PRODUCT STORAGE UNIT

(XYELENE)

AT KHEWET NO.252, 264/258, KHATOONI NO.462, QITAT NO.13, MOUZA ASAL SULEMAN, TEHSIL MODEL TOWN, DISTRICT LAHORE



Proponent

Ahmad Shafi s/o Tariq Shafi

R/o House No.2-A 9-A, Mohollah Sun Set Lane Phase-II Extension, DHA, Karachi South.

Final Report

(Mar. 2025)

Agrimore Pvt. Ltd.
Petroleum Products Storage Unit
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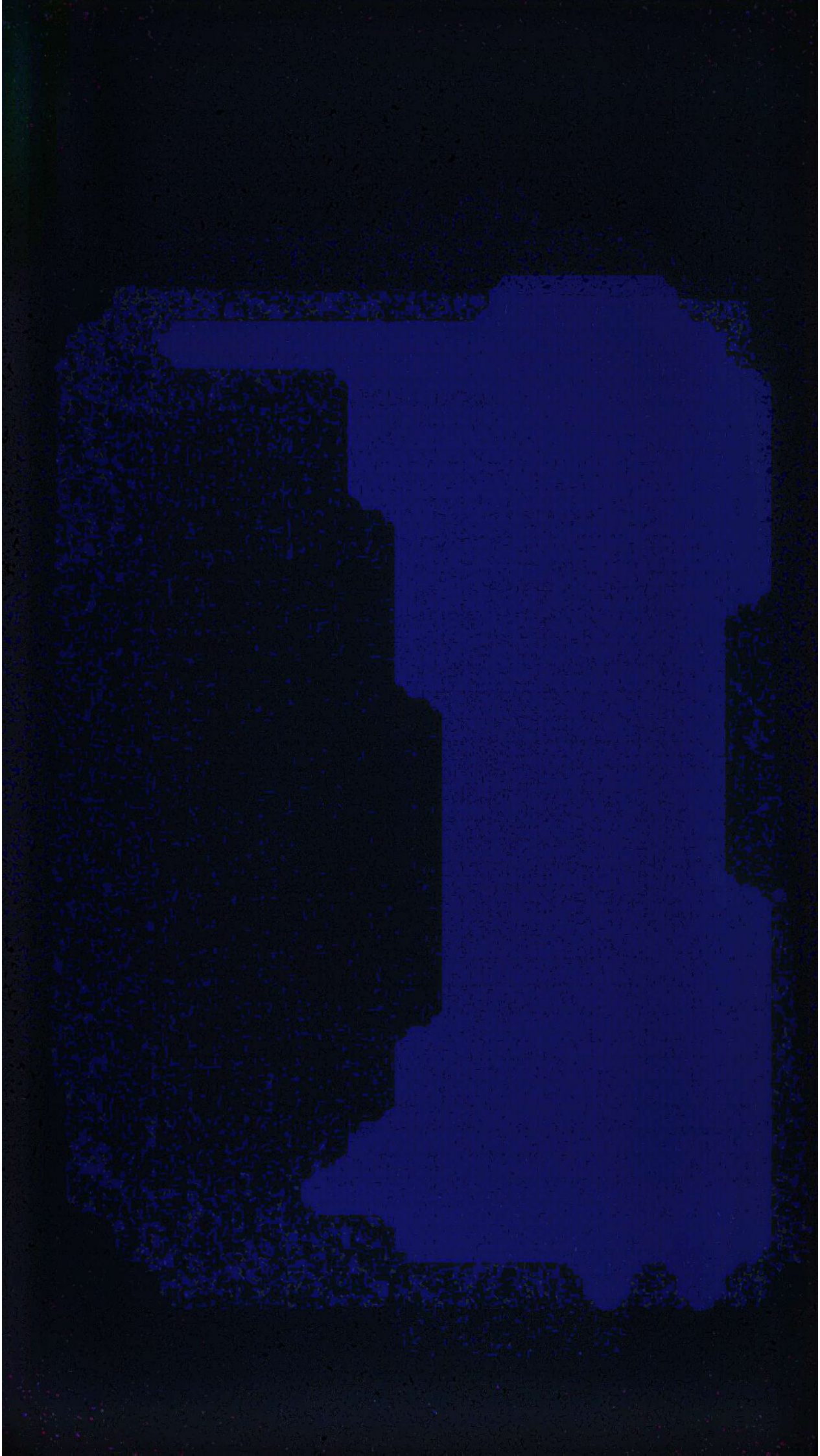
CONTENTS

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil Model Town, District Lahore



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EXECUTIVE SUMMARY

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil Model Town, District Lahore

EXECUTIVE SUMMARY

INTRODUCTION

This executive summary presents an overview of the main findings of the Environmental Impact Assessment Report for Establishment of "Oil Storage Unit by M/s Agrimore Pvt. Ltd." located at Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, at Mouza Asal Suleman, Tehsil Model Town, District Lahore. The main goal of the Proposed Project is to provide a safe, economic and environment friendly storage and bottling of oil suppliers and direct consumers.

BRIEF OUTLINE OF PROJECT

Project	Oil Storage Unit by M/s Agrimore Pvt. Ltd..
Location of the project	Khewet No. 252, 264/258, Khatooni No.462 Qitat No.13, Mouza Asal Suleman, Tehsil Model Town, District Lahore.
Proponent Name	Ahmad Shafi
Consultant Name	MHR EC
Storage Capacity	87752 Ltr
Total area of plot	5445 SFT (1-Kanal)
Cost of the project	150-Million

PROJECT OBJECTIVES:

Environmental report is prepared to assess environmental impact of a project are designed to assist to understand the project proposal and learn how it can impact on the local community and the environment, whether positively or adversely. The study has been conduct using standard methodology prescribed by the Environmental Protection Agency. Phases of the study include screening, scoping, data collection and compilation, visits to the project site, public consultation impact assessment, and compilation of this report. Salient features of the project title (EIA report) of the project name "Agrimore Pvt. Ltd. Oil Storage" bulk oil storage terminal located at Mouza Asal Suleman, Tehsil Model Town, District Lahore. Further objectives of the project are:

1. Maintain continuity in supply of petroleum products to the local consumers through distributors and quality of services to the consumers.
2. Ease in availability of kerosene oil etc..
3. Help to overcome the scarcity of bulk oil due to huge gap between demand and supply.

4. Discourage deforestation with reduction in use of fire wood and fossil fuels.

Raw Material

Fired bricks and clay blocks
Cement composites, Steel
Concrete, Fabric, Glass, Metal } Varies

MAJOR IMPACT AND RECOMMENDED MITIGATION MEASURES:

There is a potential risk of oil spillage during the operation of the tank that can affect environment. Through the assessment of the activities associated to the tank the following have been identified as the potential point of spill:

- During filling of the tank
- Leakage through valves and pipe appurtenances
- Leakage from delivery of fuel to road tankers
- Overfill of product at the tank truck loading rack
- Rupture of storage tank
- Collapse of tank foundation
- Accident during transportation
- Fire outburst
- Natural disaster
- Community and Workers' Safety

Mitigation Measure Recommended:

The procedure to handle any inland oil spill is specified in Oil Spill Plan enclosed in this EIA. The amount of product spilled is dependent on the response time, the management of the spill and the resources available. In short, some of the steps that are executed during the spill:

- Provision of bund walls has already been made, according to the design standards used for storage tanks, to contain the oil spills from storage tanks.
- Provision of an oil water separator is made to segregate the oil from the surface water run-off discharged from the bund area.
- Any oil spills within the petroleum storage depot shall be addressed by the promoter to prevent contamination of the soil.
- All activities and operations of the petroleum storage depot shall be discontinued followed by immediate clean up measures (using tools such as shovel, rake, scraper, etc.) of the oil spillage by the personnel and proper equipment. In addition, the workers involved

in the clean-up measures are provided with proper Personal Protective equipment (PPE).

Additionally, incorporated into the project include running the machines and vehicles on good quality (low-sulfur fuels) in good working order ensuring regular maintenance, tuning and servicing, and providing them with emission control devices, such as mufflers and silencers, etc. water suppression and covered transportation and storage of the construction materials and slow driving on unpaved roads will control dust emission. Regular testing for leakage detection will also be ensured. Solid waste of construction activities will be used for flooring, while the remaining solid waste will be managed as per practices in the area. For community safety, irrelevant persons will not be allowed inside. Safety of the workers will be ensured by encouraging workers to use PPEs.

Potential Positive Impacts:
Potential positive environment and socioeconomic impacts expected during different phases of the proposed project include the following:

Local employment opportunities. The project involves a total 60-70 laborers thereby involving the local people and enduring job opportunities.

Promotion of Rotogravure and printing will improve in target markets. The project is likely to encourage the development of medium scale laser and engraving technology for best inks usage and printing; Contribution to local socioeconomics development in the project area through money circulation and the multiplier effect; the project will directly and indirectly contribute to the socioeconomic development of the surrounding communities. Direct contributions could be done as part of corporate social responsibility (CSR) by supporting worker's community development initiative in areas such as education, health, water, roads etc.

Potential Negative Impacts:
The project is not known to contain any rare or endangered species, and the terminal is not expected to disturb the ecology of the core area. The project is not expected to release any pollutants during normal operations. Its location and operation are not expected to affect the breeding habitats or migratory paths of any species. No adverse impacts on fauna are anticipated during construction or operation.

An Emergency Response Plan and a firefighting plan will also be in place to deal with all sorts of emergencies. Proper First Aid Box and all safety measures will be provided to cater any emergency situation.

PROPOSED ENVIRONMENTAL MONITORING PLANS:

During construction, ambient air quality for CO, NOX, SO2, PM2.5, PM 10 & SPM, noise level (tests), and Ground Water Quality will be tested using EPA Certified Labs and test report will be submitted to EPA Punjab as per NOC Conditions as well as community and workers' safety (visual) need to be monitored. During Operational Phase Ambient air quality for CO, NOX, SO2, PM2.5, PM 10 & SPM, noise level (tests), and Ground Water Quality will be tested using EPA Certified Labs and test report will be submitted to EPA Punjab as NOC Conditions.

Sr#	Monitoring Points	Parameters	Frequency
1.	Emissions	CO, SO2, NOx, PM and Ringelmann	Monthly
2.	Ambient Air Analysis	CO, SO2, NOx, PM, O3, VOCs	Quarterly

Recommendations for mitigation measures

The following mitigation measures should be adopted during construction / operation phase of the activity:

- Implementation of EMP must be given the top most priority.
- Proper PPEs including ear plugs, ear muffs, goggles, gloves and shoes etc. should be provided to the workers.
- Train the workers to use PPEs.
- Advise and train the workers to follow SOPs.
- Installation of fire-extinguishers in the premises and their monitoring must be ensured.
- Equipment maintenance and efficiency must be checked.
- Proper storage for raw material storage should be provided.

Proposed Monitoring

Monitoring plan has been included in instant EIA report. During operations, oil spill, solid waste management and workers' health and safety need to be monitored.

Conclusion

After assessing the significance of potential impacts, conclusion as under:

If the planned project is conducted as proposed and described in the instant EIA and the commendations, mitigation and environmental management measures are implemented, the project activity will not result in any short and long term impact on the local community and environment. Hence, the project is recommended for the issuance of Environmental Approval because the project proponent is willing to run the project in environment friendly way and to adopt the Environmental Enhancement Measures.

Agrimore Pvt. Ltd.
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AN INTRO

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil Model Town, District Lahore

1
INTRODUCTION

1.1 GENERAL

This session of report provide an overview of the rational of project, objective of the project, purpose of the report and approach adopted to conduct the Environmental Impact Assessment (EIA) of depot of underground bulk oil storage tanks for M/s Agrimore Pvt. Ltd. Oil Storage, located at Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, at Mouza Asal Suleman, Tehsil Model Town, District Lahore.

The purpose of this study is to identify the environmental baseline i.e. physical, biological and socio-economic / cultural conditions and assess all possible impacts arising during the construction and operational phase of the proposed Project along with proposing suitable mitigation measures and formulation of Environment Management Plan (EMP) for implementation of the project in environment friendly manner. The report provides relevant information, as required under officially approved format, to help the decision makers i.e. EPA Punjab before the issuing the Environmental Approval.

The major purposes of the report are as follow:

- ✓ To determine and document the state of the environment of the project area to establish a baseline in order to assess the suitability of the proposed project in that area.
- ✓ Provide assistance to the proponent for planning, designing and implementing the project in a way that would climinate or minimize the negative impact on the biophysical and socio-economic environment and maximizing the benefits to all parties.
- ✓ To present mitigation & monitoring plan to implement the suggested mitigation measures and supervise their efficiency and effectiveness.
- ✓ Prepare an EIA Report to be submitted to EPA Punjab for issuance of Environmental Approval.

IDENTIFICATION OF THE PROJECT:

This document presents the Environmental Impact Assessment (EIA) report for Establishment of **"Oil Storage Unit by M/s Agrimore Pvt. Ltd."** located at Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, at Mouza Asal Suleman, Tehsil Model Town, District Lahore.

1.2 IDENTIFICATION OF PROJECT PROPONENTS

Proponent Name	**Ahmad Shafi s/o Tariq Shafi**
Address	House No.2-A 9-A, Mohollah Sun Set Lane Phase-II Extension, DHA, Karachi South.
CNIC Number	42301-1091448-3

1.3 NATURE OF PROJECT

This project is the Establishment of Oil Storage Unit.

1.3.1 SIZE OF PROJECT

Proposed Project will have a capacity of 87752 Ltr as follows:

i. Xyelene 87,752 (liters)

1.3.2 LOCATION OF PROJECT

This project is to be located at Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, at Mouza Asal Suleman, Tehsil Model Town, District Lahore.

1.3.3 AREA OF PROJECT

Total plot area of the Project is 5445 SFT out of which covered area is 1950-Sft.

1.3.4 COST OF THE PROJECT

Cost of project has been estimated PKR 150-Million.

1.4 DETAILS OF CONSULTANTS

Proponent himself. However, for the preparation of the EIA Report of the proposed project, the proponent has hired the services of the environmental professional practitioners. Team comprising of Environmental Engineers, Chemical Engineers, environmental experts and environmentalists has worked on this report.

1.5 PURPOSE OF PROJECT

The development of any Project leads to positive and adverse changes in environment and social settings of the Project Area. The intensity and level of change, however, depends upon the nature of the Project and the baseline environmental conditions of the area. The establishment of proposed project will cause will cause minor to moderate adverse environmental and social impacts on the surrounding area. Thus, an environmental and social study is mandatory to establish the baseline conditions, evaluate the possible adverse impacts if any, and devise the mitigation measures.

The main objectives of this EIA study are:

- To determine and document the state of the environment of the project area to establish a baseline in order to assess the suitability of the Project in that area.
- To identify pre-construction, construction and operation activities and to assess their impacts on environment.
- Provide assistance to the proponent for planning, designing and implementing the project in economic environment and maximizing the benefits to all parties in cost effective manner.
- To present Mitigation and Monitoring Plan to smoothly implement the suggested mitigation measures and supervise their efficiency and effectiveness.
- To provide opportunity to the public for understanding the project and its impacts on the community and their environment in the context of sustainable development.

1.6 DOCUMENT STRUCTURE

The report comprises of following chapters;

Chapter 1: **Introduction** (Briefly presents the project introduction, objectives and need of the study).

Chapter 2: **Policy, Legal and Administrative Framework** (Comprises the policy, guidelines and statutory obligations concerning EIA study of the project)

Chapter 3: **Project Description** (Presents relevant information about the project and its major components).

Chapter 4: **Description of the environment** (Establishes baseline conditions for physical, biological and socio-economic conditions of the Project area).

Chapter 5: **Environmental Impacts and Mitigation Measures** (Deals with the potential environmental impacts and mitigation measures, which have been proposed to mitigation the environmental impacts of the Project).

Chapter 6: **Environmental Management Plan** (Outlines institutional structure for the implementation of the Environmental Management Plan).

Chapter 7: **Recommendation and Conclusion** (This chapter gives recommendations for elements of special interests and concludes the whole report).

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PROJECT DESCRIPTION

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil Model Town, District Lahore

(2)

PROJECT DESCRIPTION

This section of the study renders a detailed account of the project and its salient features, such as location and various phases. Inputs and discharges relevant to different phases of the project, such as electricity & material have also been examined as a response to possible environmental concerns.

2.1 TYPE AND CATEGORY OF PROJECT

The proposed project is engaged with the construction of bulk Oil storage terminal for underground storage oil tanks. Xylene is a flammable, colorless liquid with a sweet odor will be stored in the project site.

EPA Punjab has categorized the projects for E1A or IEE in "Review of Initial Environmental Examination and Environmental Impact Assessment Regulations 2000" in Schedule 1 and II. According to the Environmental Protection Agency, Government of the Punjab, Lahore "List of projects Requiring an EIA", and the project under consideration categories falls in the category of the projects requiring Environmental Impact Assessment. Further, the client is required to fulfill the legal requirements of the Section-12 of the Punjab Environment Protection Act 1997 (AMENDED 2012).

According to the SCHEDULE II Section 'A' Serial No.5, Punjab Environment Protection Act 1997 (AMENDED 2012). List of projects requiring an EIA,. Oil and gas extraction projects including exploration, production, gathering systems, separation and storage lies in EIA category.

2.2 Objectives of Project

The basic objectives of the Project include the storage and supply of the Oil & diesel under the compliance of environmental standards and IFC Guidelines.

Xylene is a flammable, colorless liquid with a sweet odor will be stored in the project site. There are 6 Tanks to be installed underground will be used for the oil storage. The capacity of storage tanks will be 87,752 liters approx. each.

PROPOSED TANK SCHEDULE

Tank No	Size	Product	Type	Capacity liters	5% less capacity	Flash point	Net capacity	Placing
1	13'-2" DIA x 24'-0" Long	Xylene	NDP	92,370 Ltr	4,619 Ltr	115° F	87,752 Ltr	UG

2.3 Alternatives Considered Realistically (Related to Demand, Activity, Location, Process, Scheduling and Input Alternatives) and Reason for their Rejection

As the project site is located around agricultural land and there are no natural parks, wildlife reserves and archaeological sites and any protected areas are present in or near the project area and the land is owned by the Proponent. So there is no need to consider alternatives for the project site, the selected site is best suited for the commencement of the Project.

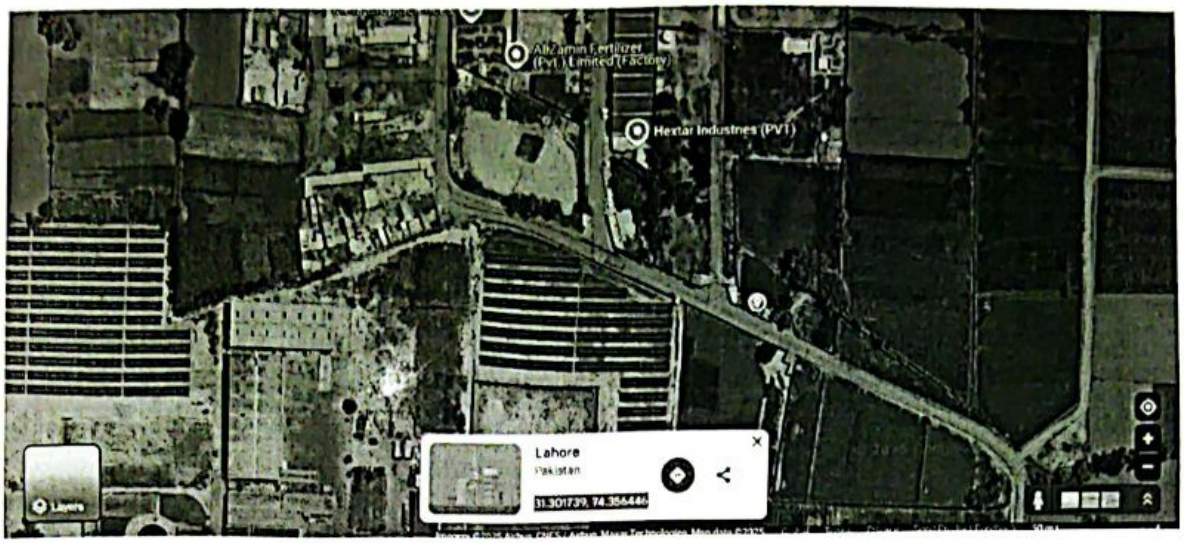
Availability of land at the best convenient place is equally important among other consideration for the site selection. Availability of access roads, communication facilities, electricity, basic infrastructure, sewerage etc. is yet the other necessary requirements.

Obviously, environmentally sound, neat and clean environment are the other considerations site selection. The project will also facilitate the people of the area with increasing opportunity of employment and others related facilities. The project will also cater the Petroleum products need of local area as well as armed Forces need during emergency.

These factors carried important weightage in selection of the present site for the project. The project will be regulated according to Punjab Environmental Protection Act 1997 (Amended, 2012) and in compliance with the Punjab Environmental Quality Standards, 2016 (PEQS). Environment Management Plan (EMP) and Environment Monitoring Plan (EMMP) will be operational.

2.4 Location and Site Layout of the Project

The proposed site for bulk oil storage terminal is located at Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, at Mouza Asal Suleman, Tehsil Model Town, District Lahore.
The location map of the project site is attached.



2.5 Land Use on the Site

The land use pattern around the study area is related with semi-agricultural activities and livestock animals. The major cash crop in the area is wheat. Most of the people of the area associated with agricultural activities and livestock.

2.6 ROAD ACCESS

Sue-e-Asal Road, access of the proposed project site.

2.7 RELOCATION AND REHABILITATION PLANS

There exists no human settlement within a safe radius of the selected project site to be displaced owing to the commencement of the Proposed Project. No structure of any significance stands at the site to be relocated or dismantled. Land is already under undisputed ownership, and no fresh land is to be occupied; hence, no relocation and rehabilitation is required.

The proponent of the project aims that standard practices and procedure shall be followed for the restoration of areas disturbed during execution of developmental works. Like hiring the contractor for transfer of demolished waste and pavement of excavated land. The plants removed during construction phase will be replanted especially around the boundary walls of site and in the open spaces.

2.8 Vegetation Features of the Site

The project area encompasses semi agriculture area; the major cash crop in the area observed during the survey was wheat. There are few small height existing trees inside the project area which will be affected by the project activities. Common trees found in the area are Kikar, Tali, Safida, Beri and Piple are found in small number.

2.9 Cost & Magnitude of the operation

The Oil for the proposed project will Xylene. To facilitate its operations and provide storage for the products, the company intends to install 01-underground storage tank of capacity 87,752-liters. The total capacity of tank reached upto 92,370 Ltr out of which 5% Less Capacity about 4,619 Ltr. & total storage capacity will be 87,752 Ltr.
Total cost of the project is estimated **150-Million.**

2.10 Schedule of Implementation

Stage-I	Establishment of the foundation to support building structure for unit.
Stage-II	Civil work and end construction of septic tanks and construction of pavement, sewer laying etc.
Stage-III	Fitting of electrical pipes, water pipes, drains etc.
Stage-IV	Installation of firefighting piping and finishing of civil structure.

2.11 DESCRIPTION OF PROJECT

Safely handling volatile liquid, accurately taking inventory turnover and yield, reliably monitoring product quality and emissions, preventing spillages – running a successful tank storage business comes with many challenges. Process efficiency, flexibility, transparency, safety and availability have become the key drivers for profitability in the industry.

All 06-oils will be purchased through multinational companies. Oil will be stored in storage tanks for supply demand to local markets. Incoming finished products including crude oil and fuel oils will be off loaded and managed safely within terminal operation, demand diligent supervision.

Terminal operation services

- Vessel unloading
- Circulation and blending
- Tank-to-tank transfer
- Vessel loading
- Truck loading
- Injection and pipeline transfer

Product handled

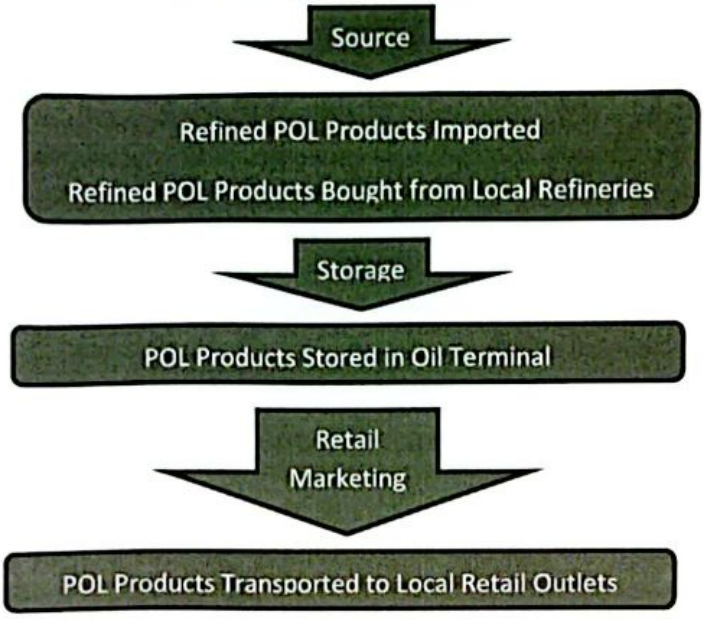
- Xylene (a flammable, colorless with sweet odor) a solvent

Terminal functions supported

- Bulk for regional markets
- Strategic storage

Effective fluid-management at a terminal requires the regular movement and consolidation of stored fluids. Tank-to-tank transfer system are daily employed to perform these operations. To ensure minimal product contamination, the equipment used to execute these services must be able to strip out a variety of fixed roof and floating roof tank types.

Process flow diagram



2.12 As the project site is at a suitable place so there is no displacement of any human settlement due to the installation and operation of the said project.

There will be no any matter of rehabilitation as the proposed site is already owned by the project proponent. There will not be any let regarding safety factors as applicable from time to time for such buildings on all accounts. However, at the end of the life of the building it will be duly dismantled with special precautions to avoid / minimize pollution and at the same time taking all safely precautions to project human life and property around the building. The materials capable of recycling / reuse will either sold in the market or to be reused for other suitable purposes. While dismantling the building all government rules and regulations as applicable to such activities will be strictly adhered to. During entire construction period, necessary precaution will be taken to ensure that no damage is done to the basic infrastructure like sewer system, power transmission lines, roads, private or public property and daily human life as well. Safety measures as desired under the code of demolition will be adopted to avoid any harm to humans, property around, or the environment in the project area. Thus to be generated will

be minimized by constant sprinkling of water. After completion all construction matrix, debris, and garbage will be removed off immediately from the site within the minimum possible time under safe conditions. Any minor spill over of these materials will be cleared adequately. The land, if and where pitted will be adequately leveled. On the whole, the project site and the area in its near vicinity will be made neat & clean.

2.13 GOVT. APPROVALS

Management has applied for Environmental Approval by filing instant EIA. The storage terminal will be constructed and approved in accordance with the modalities and procedures framed by EPA, Punjab. So far the proponent has obtained the following NOC's from the relevant government departments for the proposed Oil Storage facility:

1. District Civil Defense (Attached)
2. Oil & Gas Regulatory Authority (OGRA) (Attached).
3. LESCO
4. SNGPL

2.14 CAPACITY

The project envisages at construction of storage and filling Plant which will have a filling capacity of 87,752-Liters.

2.15 Filling of Storage Tanks:

Oil tankers will arrive on site and enter through main gate of plant. Tanker will be attached to the bowzer point and oil will be transferred from Mobile tanker to storage tanks. Storage tank will be mounted on RCC foundation. The filling Plant will be supplied with emergency and firefighting equipment to be used in case of fire emergencies.

2.16 AUXILIARY SERVICES

The essential auxiliary services required for operation of the proposed building project have been incorporated in the design of the project. These are narrated in the following:

2.16.1 Water supply

The surplus water during the construction phase of the whole project will be estimated to meet any unforeseen situation. The water demand will be fulfilled from ground water. Water requirement for maintenance of green

belts will be done on daily basis by ground water through pumps and pipes to avoid wastage of water. The water requirement for the construction phase will be 2000 gal/day while during operational phase water requirement will be 800 1/day.

2.16.2 Electricity

Source of power will be WAPDA and a diesel fired generator of 50KVa.

2.16.3 Manpower

A total of 20-25 employees including mechanical, electrical, operators, sweepers and other managerial and office staff shall be working at project site.

2.16.4 Firefighting

The facility will have a comprehensive firefighting system covering all hazardous area and the other areas of the facility. This ensures that any five within the plant is quickly surpassed and extinguished. Firefighting and emergency catering facilities will include:

- Manual call point
- Emergency shutdown
- Fire Alarm hooter
- Fire Extinguishers (12kg)
- Trolley mounted fire extinguishers
- Fire monitor
- Fire hydrant

Size of fire water pipelines will be

- 3" dia main fire water header
- 2" dia distribution fire water pipelines
- 2" dia secondary distribution pipelines

2.16.5 Health & Safety

For health and safety of workers, 4-First Aid Boxes will be available and workers will be provided with following PPEs

Sr.#	PPEs	Qty.
1	Gloves	15 Pairs

2	Shoes	15 Pairs
3	Mask	15 Pairs
4	Anti-fire suits	15 Suits

2.17 Emissions and effluents

2.17.1 Wastewater

Effluent arising from domestic activities will be treated in septic tank and then will discharged to local drain. Oil storage and filling activities give rise to no waste effluent, hence no waste water treatment system is required. Municipal waste water will generate @ 200-250 per day.

2.17.2 Air Emissions

No Air emission are expected during process. In case of leakage, broken down pipes, Oil could escaped which will have certain impact on workers. For this, spill detector will be provided. Further PPEs will also provide to workers. Generator emissions will be controlled by proper enclosure, maintenance and tuning.

2.17.3 Noise

During operation, loading and un-loading will the cause of noise. Proper tuning of vehicles being mitigates this problem. Moreover, Tree Plantation along the boundary of Proposed Project and Plantation within the unit will further reduce noise, since plants and tree serve as noise absorbers. Construction activities noise will be temporary, and will be mitigated by measures.

Activities will include

1. Applying for and getting all necessary approvals and contracts.
2. Construction of boundary wall and other structures.
3. Installation / Construction of tanks and firefighting equipment.
4. Maintenance of Machinery and Tanks

Agrimore Pvt. Ltd.
Petroleum Products Storage Unit
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ENVIRONMENT DESCRIPTION

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil Model Town, District Lahore

(3)
DESCRIPTION OF ENVIRONMENT

It is presents information on existing environmental and socioeconomic conditions of the proposed project area. It discusses aspects pertaining to geology and soils, climatic conditions, hydrology, ambient air quality and noise levels as well as land use. Further, the chapter presents details related to flora and fauna as well as socio-economic environment.

3.1 Physical Environment / Resources

This part examines the physical resources such as topography, soil, climate, surface & ground water resources & quality, ambient air quality and geology of not only the project site but also the city as a whole to assess whether the project under assessment can or does have any impacts on any of these parameters. The description of physical environment of the city and the project site is presented in the following sub sections.

1.1.1 Topography

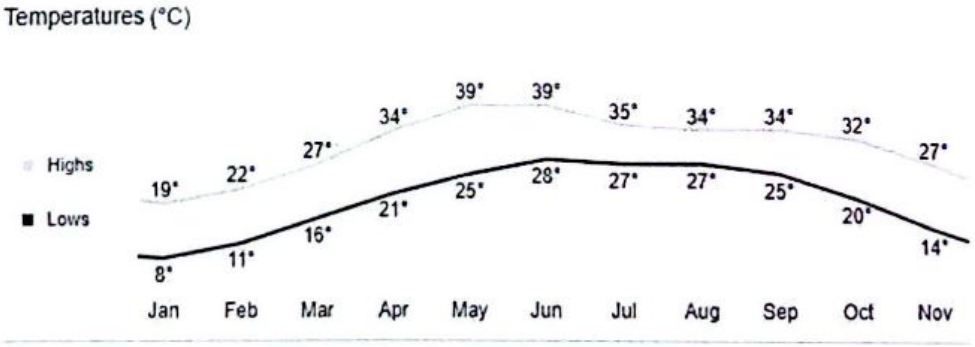
Topographically Lahore is an older and much larger city and is a center of the province. Lying between 31°15′—31°45′ N and 74°01′—74°39′ E, Lahore is bounded on the North and West by the Sheikhupura District, on the East by Wagah and on the South by Kasur District. The Ravi River flows on the northern side of Lahore. Lahore city covers a total land area of 404 square kilometers (156 sq mi). Lahore is the capital city of the province of Punjab. It is the second largest and most populous city in Pakistan, after Karachi and the 32nd most populous urban city in the world1. The city is located in the North East part of Punjab province, near the border with India. Lahore is ranked as a Gamma+ world city2 and is one of Pakistan's wealthiest cities with an estimated total nominal GDP of $58.14 billion3.

The project site is located at Plot No.421, Block-G-IV, M.A. Johar Town, Lahore. Geographical location of the project is 31°28'29.7"N 74°16'15.2"E. The project site is residential / commercial in nature and is located at residential area.

1.1.2 Climate

The climate of Lahore has a semi-arid. The hottest month is June when average highs routinely exceed 40 °C (104.0 °F). The monsoon season starts in late June and the wettest month is July with heavy rain falls and evening thunderstorms with the possibility of cloudbursts. The coolest month is January with dense fog.

The city's record high temperature was 48.3 °C (118.9 °F), recorded on 30 May 1944. 48 °C (118 °F) was recorded on 10 June 2007.At the time the meteorological office recorded this official temperature in the shade, it reported a heat index in direct sunlight of 55 °C (131 °F). The record low is −1 °C (30 °F), recorded on 13 January 1967.



1.1.3 Precipitation

Precipitation is the lowest in April and the greatest amount of precipitation occurs in July. The highest rainfall in a 24-hour period is 221 millimeters (8.7 in), recorded on 13 August 2008. On 26 February 2011, Lahore received heavy rain and hail measuring 4.5 mm (0.18 in), which carpeted roads and sidewalks with measurable hail for the first time in the city's recorded history.

1.1.4 Air Quality

Atmospheric pollution particularly in urban area has a strong impact upon daily life. Its economic growth, industrial progression& transport have increased which ground for rising energy consumption and ultimately consequences are increase in air pollution. The main sources of air pollution exhaust from motor vehicles and industries are SO2, NO2, CO, etc. Particulate Matter (PM) and noise which is inspected as the pollution indicators.

Dust particles along with oxides of nitrogen, sulphur and carbon are the major causes of air pollution in the ambient air quality. It was observed during the visit that petrol and diesel operated vehicles are emitting smoke and exhaust gasses in excessive quantity which are the leading sources of environmental pollution and responsible for the air quality worsening. Infact exhaust emissions (including dangerous gases such as carbon monoxide, oxides of nitrogen, hydrocarbons and particulates) and evaporative emissions (including vapors of fuel which is released into the atmosphere, without being burnt) are the prime sources for deterioration of air quality. Monitoring was conducted at the project site by using Fine Dust Sampler IPM-FDS 2.5/10μ and Ambient Air Analyzer.

1.1.5 Noise Level Monitoring

Noise is described as an unwanted sound emitted from un-avoidable sources of anthropogenic activities. Daily based natural induced sources

of noise are rare to none but human induced noise sources are plenty and un-avoidable. Physically, there is no distinction between sound and noise. Sound is a sensory perception and the complex pattern of sound waves is labeled noise, music, speech, low altitude airplane flying etc.

The affluent areas of City are quieter than rest of the city. The noise level in these areas is still far higher than the standards set by the World Health Organization and the Pak-EPA as the safe noise level; i.e. 60-85 dB(A). Environmental noise is a common cause of hearing loss of people indulged in industrial activities. Noise pollution in the city is on the rise with most residents complaining that the noise is becoming a public nuisance. Details as described below

1.1.5.1Basic Environmental Conditions

During the measurement following conditions were prevailed in workplace.

1.1.5.2Metrological Conditions

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

1.1.5.3Monitoring Instruments

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

Name: Digital sound level meter

Model: AR824

Company: Intel Instruments plus

Frequency Range: 31.5Hz to 8kHz

1.1.5.4Methodology Adopted

Noise level was monitored at four points; lab results will be provided to the EPA.

1.1.6 Ground Water

The city is underlain by the deep permeable aquifer formed within the alluvial plane of the River Ravi, which is the part of Greater Indus Plain. Ground water is the principal source of municipal water supply. This is also the case in the immediate vicinity of the site. The City's drinking water is obtained from groundwater aquifer by means of tube wells located throughout the area. Groundwater is pumped from 400-800 feet and is generally good for direct consumption. About 83% of the city's population is consuming groundwater for drinking purposes.

3.2 Ecological Resources

Biodiversity has an important role in the functioning of the ecosystem. Mainly a country's wilderness areas and scenic landscapes with their associated flora and fauna form natural capital of a country. Both collectively and within each level, the range or variety of the resources is referred to as the —Biological Diversity. The contribution of the —Natural capital is recognized at three distinct levels including genera, species and community - habitat and ecosystem.

Pakistan comprises of a total of nine major ecological zones and the term has relevance for each of Pakistan's administrative units—district, province and particularly country. The greater the number of genera, species and habitats and ecosystems present within these units, the greater is the biodiversity. It is in this background that the biodiversity of the area is discussed below:

City is enriched with the presence of natural flora and fauna; although with the growing population and development activities the presence of some has been somewhat affected.

There are however no significant or well-shaped trees and shrubs on the project site. There are some trees only along the main roads.

3.2.1 Flora

Trees, also called the lungs' of the earth are important for the restoration of the ecosystem. People can benefit incalculably from their survival and existence. Trees have also been a source of medicine for thousands of years and a refuge for various species of birds. No threatened or endangered species and medicinal plants are present anyhow in the project area.

3.2.2 Fauna

With an increase in the rate of urbanization, the ecology of city has been considerably affected but there is no threatened or endangered species found in the project site. Similarly no wildlife is present within the project corridor.

3.2.3 Forestry

There is no forest in the area where the project will be located. The entire area is industrial.

3.3 Socioeconomics Environment

"The Socio economic environment is represented by the human and economic development and quality of life values. For the study of socio-economic environment of the project area, field surveys were conducted and interviews were held with the general public and neighbors. The baseline conditions of the city are as follow:

3.3.1 Population

According to the senses 2017 population of the district in which the project falls is approximately 11.13-million persons.

3.3.2 Profession

Main profession of the area is jobs, business as well as self-employment activities however a large number of the peoples are doing jobs in govt. institutions and different private institutes of the District.

3.3.3 Education Level

The following methodologies were used for carrying out public consultation:

- ✓ Local communities, individuals affected, owners and employees who will be directly or indirectly affected were given priority while conducting public consultation.
- ✓ Walk-through informal group consultations in the project area.

The local communities had been informed through public consultation with a briefing on project interventions including its benefits.

3.4 Quality of Life Values

Quality of life the in the project area is good as there are proper sanitation system and basic health facilities are available. Some of the important factors are discussed are below;

3.4.1 Heath and Education

Basic health & education facilities are available in the area of the project site and these health and educational facilities are sufficient.

3.4.2 Compensation in Money Terms

As the project has been developed on the land of Punjab Small Industries Estate, so, there is not any affected community and no need of compensation.

3.5 Archaeological and Historical Treasures

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

3.6 Lab reports of environmental analysis

For the analyses of different environmental parameters of the project site, the analysis was carried out from EPA certified lab.

The selected site is going to brought into industrial use which has availability of infrastructure facilities such as water supply, power, roads, social infrastructure and man power. By the establishment of said project no land use change of the area is being envisaged. The selected site is located outside the negative zone and unsuitable surroundings. Moreover, the selected site is neither location within prohibited zone nor located in environmentally sensitive site.

The project, overall, does not have major adverse impacts on the existing environment and people with due implantation of the mitigation measures. It is further concluded that project confirms to the local environment.

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SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil

(4)
SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

The following chapter describes the overall possible impacts of said project on the physical, biological and socioeconomic environment due to the location, Design, during construction phase, during operation phase of the project and mitigation measures to minimize the significance of the possible impacts. The anticipated impacts related to propose housing have been assessed and mitigation measures are provided accordingly.

4.1 General

Assessment of impacts depends on the nature and magnitude of the activity being undertaken, as well as the type of environmental control measures that are envisaged as part of the project proposal. The potential impacts from the project area are identified and assessed based on the type and scale of the various activities associated with this project.

Several aspects and potential impacts were identified for each phase (Project Location, Construction and Operation) of the development, with impacts evaluated in terms of their nature, occurrence, possibility and severity potential.

4.2 Screening of Potential Impact

Several impacts are likely as a result of the construction and operation of the project. Such impacts may be direct, indirect or ultimate. For the purpose of this EIA, these potential impacts (whether direct, indirect or ultimate), are assessed based on their magnitude (short-term or long-term) and effect (positive or negative). Impacts are also classified in three group: impacts due to project location, impacts as a result of project construction and impacts as a result of project operation.

All the potentially significant environmental impacts from the project are grouped below:

Air Environment

- Impact on ambient air quality

Noise Environment

- Impact on ambient noise

Water Environment

- Impact on surface and ground water quality

Land Environment

- Impacts on land use

Ecological Impacts

- Impacts on trees/vegetation
- Impacts on forests and wildlife

Socio-Economic Impacts

- Impacts on other infrastructure
- Impacts on employment
- Impacts on public health and safety
- Impacts on cultural resources
- Impacts on aesthetics

4.3 Impacts Due to Project Location

Proposed project will have both socio-economic and environmental implications as discussed in the sub-sections below.

4.3.1 Relocation of People

Currently, there are no infringements on the project site that may be affected therefore relocation exercises are not required.

4.3.2 Loss of Vegetation

Considering the scale of the project and commonly found flora and fauna within the project influence area, no significant adverse effects are envisaged on the ecology of the area.

4.3.3 Shifting of Utilities

There will not be any shifting of existing utilities such as water supply pipelines, sewers, electrical lines, etc. due to the proposed project.

4.3.4 Impact on Archaeological/Cultural Property

Within the project influence area there are no significant archaeological properties, hence no impact in this area is anticipated.

4.4 Impacts Due To Project Design

Design of the proposed project can have impacts on the environment if it is not prepared accordingly. It is necessary to consider a sustainable project approach. Sustainability is an important issue to consider in design, not only due to environmental concerns but also due to economic and social matters, promoting architectural quality and economic advantages.

4.5 Design Phase

At the design phase, no considerable impact would occur on land, soil topography, ground water, and on people of the area. However, in pre-construction phase a management system should be provided at design level so impacts can be reduced. Design of the building would adhere to all standard technical requirements in order to avoid adverse impacts on environment and human health. All tanks and piping will be done as per standards.

Proposed Project will have a capacity of 87752 Ltr as follows:

i. Xyelene 87,752 (liters)

Tank

Tank No	Size	Product	Type	Capacity liters	5% less capacity	Flash point	Net capacity	Placing
1	13'-2" DIA x 24'-0" Long	Xylene	NDP	92,370 Ltr	4,619 Ltr	115° F	87,752 Ltr	UG

The complete design of said project is made as per requirements of OGRA and they have granted NOC to said company so there will be no such impacts due to design of project. Complete details of tanks are given on map.

4.6 Impacts During Construction Phase

Environmental Aspects	Impacts and Mitigation Measures	
	Impacts	**Mitigation Measures**

Economy Improvement	• During construction Phase, through the use of locally available materials including cement, building blocks, metals, concrete, ceramic tiles, timber, sand, electrical cables etc, the project will continue towards the growth of economy by contributing to the gross domestic product.	• No mitigation measures required.
Employment Opportunities	• With the Implementation of the project, there will be employment opportunities for casual workers from the local community. The exact number of workers to be hired will depend on the magnitude of construction activities during construction.	• No mitigation measures required.
Air Quality	• During construction phase particulate matter will be the main pollutant which will be generated during the site development activities, such as leveling of land, filling activities, transportation of construction material to the project site from various places. • Due to increased vehicular movement increase in NOx and CO concentrations will be observed at the project site. However, the pollution level in the ambient air will be negligible and also it is a temporary Phenomenon. As most of the construction equipment will be mobile, the emissions are likely to be fugitive and not concentrated on a single source or place. As the impacts will be localized in nature, the areas outside the proposed project boundary are not likely to face any significant adverse impacts with respect to ambient air quality.	• Dust emission will be minimized through strict enforcement of onsite speed controls as well as limiting unnecessary traffic within the project site. • The traffic routes on site will be sprinkled with water regularly to reduce the amount of dust generated by construction vehicles. • Construction machinery will be kept away from walkways and at safe places where the chances of human interventions are relatively less. • Construction

		machinery will be properly tuned, serviced and monitored on regularly basis. • All vehicles, construction machinery etc will maintained in good working condition in order to minimize pollutant emissions.
Water Quality	• During construction phase, water will be required only for construction of structures, sprinkling on roads for dust suppression, domestic uses of the construction workers, that too only during day time. • Water will be used mainly for concrete mixing, sanitary and washing purposes. • No high water consuming activity is likely to occur during construction so the water usage during development of proposed project would not reduce the water availability for other activities within the area.	• Workers will be trained for water conservation and reuse of water where possible.
Relocation of Utilities	• The construction of the project will not relocate the existing public utilities.	• No mitigation measures required.
Poverty Alleviation	• Construction of the proposed project will generate the employment opportunities. This will be a temporary minor positive impact.	• No mitigation measures required.
Solid Waste Generation	• During excavation of the site for foundation works and landscaping, solid waste will be generated. The waste will consist of metal cuttings, rejected materials, surplus materials, excavated soil, paper bags, empty cartons, empty cement bags among other types of wastes.	• Waste generated during construction will be recyclable and will be reused during

		construction. The left over construction materials at the end of construction will be used in other projects rather than being disposed-off (if required). • Recyclable material will be separated at source which will then be handed over to the waste contractor. • Waste bins will be placed at the construction site for waste materials including plastic, paper, and wood. • The cement bags and other such items will be handed over to contractor.
Noise Pollution	• During construction phase, the major sources of noise will be due to operation of construction equipment such as concrete mixers, generators, cranes, pumps, compressors, vibrators etc. the operation of such equipment will generate noise ranging between 70-85 dB. Due to moderate levels of construction activities, the anticipated noise generation during construction phase will be mostly confined to the facility itself and not anticipated to have significant adverse impacts on the surrounding ambient noise levels.	• Unnecessary blowing of horns will be strictly prohibited. • In order to safeguard the construction workers working at noise generating sources, these personnel will be provided with proper

		• After the project completion, plants and trees will be planted on the proposed site that will in turn enhance the aesthetic value.
Workers Health, Safety and Environment	• The construction activities may pose negative impacts on the health and safety of workers	• The contractor will ensure that the workers and labors are trained in safety procedures for all relevant aspects of construction. • Workers will be provided with proper safety equipment such as helmets, goggles, masks where required. • Formal emergency procedures will be developed. First Aid Kit will be kept available at the site along with list of emergency phones to be contacted in case of any emergency. • Warning signs will be displayed in local language where required.

4.7 Impacts During Operational Phase

4.7.1 Land and Soil

After the end of the construction phase the area will be restored back to its original state; different ornamental plants and native tree species will be planted. This will improve the overall ecology, aesthetic and landscape of the area whereas; the un-paved roads will be converted to metalled roads. This will have positive and significant impact on the land and soil condition of the area.

Nature of Impact

This impact is considered to be positive, long-term and significant.

4.7.2 Solid Waste Management

Solid waste generated from proposed project will be domestic in nature. Solid waste will be organic in nature and it may produce vector which could transfer diseases to humans and can be the cause of public nuisance.

Nature of Impact

The nature of impact will be direct, medium, long-term and significant.

Mitigation

Following mitigations should be adopted to reduce the issues related to the solid waste:

- Bins will be provided to collect solid waste; these bins will be emptied by sanitary staff. End disposal and solid waste management will be done as per area practices.
- Solid waste should be stored in the covered bins in order to avoid the growth of vectors and rodents as well as to control the odour and to reduce public nuisance
- Solid waste should be collected and transported to the waste disposal site on daily basis

4.7.3 Wastewater

4.7.7 Emergency Response

Incidents and accidents may take place unexpectedly during project operations no matter how effective, strong and efficient the mitigation measures for all adverse impacts; especially the safety issues may be adopted. These may include;

- Fire hazard

Fire Hazard

During operational phase of the project, fire hazard poses a serious threat. Firefighting equipment details are mentioned on map.

Mitigation

- Fire extinguishers should be properly maintained and checked periodically.
- Adequate fire hydrant system should be installed.
- Flammable materials should be prohibited in the premises.
- Fire alarm systems should be maintained for detection and warning of fire.
- Pressure gauge should be checked monthly.
- Adequate training of workers on use of firefighting system to deal with the situation.
- Administration of the unit will make a proper evacuation plans for emergency escape from all halls.
- Emergency call service must be made available.
- Firefighting team must remain ready at all times.

4.7.8 Safety Concerns

Operation of the project may cause some concerns for safety, public health and nuisances within the project area.

Mitigation:

- Personal Protection Equipment (PPEs) such as ear plugs, safety Helmets, Gloves, Goggles and Masks will be provided to the employees to ensure their safety at work place.

- Workers' awareness and safety wall chart showing safety symbols and other necessary information will be displayed at various places.
- First Aid Box will be kept in every department which will be within the approach in case of any injury or mishap.
- To avoid any chance of fire, a comprehensive firefighting system will be developed that includes all types of fire Extinguishers, fire hydrants, sand Buckets and firefighting Vehicles.
- Basis medical and safety training will be held from time to time to minimize the risk of health and safety issues which can result from ignorance (ergonomic hazards in particular) in the project premises.

4.8 Potential Environmental Enhancement Measures

Following are the positive impacts of the Proposed Project that will enhance the overall socio-economic and ecological condition of the Project Area.

4.8.1 Employment/Poverty Alleviation

The employment opportunities in the Project Area will be increased due to the development and operation of the proposed project. During construction and operation of the proposed project unskilled workers will be required as labours, sanitary workers and sweepers as well as for the skilled workers such as; accounts and managers to run the administration office. In totality, the overall economic conditions of the area will be improved.

4.8.2 Increased Business Opportunities

For construction of the proposed building a number of raw-material will be required. Many venders can supply the required stuff on daily and weekly basis. This will serve as a new business opportunity and it will enhance the socio-economic status of the people direct linked with it.

4.8.3 Tree Plantation

The tree plantation will be carried out along the boundary of the Project Site, and Open green spaces as the part of the proposed Project. This will include plantation of ornamental as well as indigenous species of the

plants. The plantation will improve that overall ecological conditions of the area. Trees height will be between 3-7 ft. Total number of plants and trees will be approximately 50. Spacing between plant to plant will be 6-8m.

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ENVIRONMENTAL LAGISLATIVE & FRAMEWORK

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil Model Town, District Lahore

(5)

ENVIRONMENTAL LEGISLATIVE REQUIREMENT AND FRAMEWORK

General

This chapter deals with the relevant policy, a legal and administrative framework instituted by the Government of Pakistan and Punjab for the protective of Environment. All the relevant provision of these policy and legal frame works have been duly considered in this environmental assessment study. In addition to this, the roles and responsibilities of the proponent and other key players such as EPA, Punjab under the legal frame work of PEPA, 1997 (amended in 2012) has also been discussed in this section. The legal set of documents which will applicable to this project is also discussed in this chapter.

Policy Framework

The ministry of environment was responsible authority for policy making on environmental protection in Pakistan. With the 18th amendment all the power of environmental legislation have been entrusted to provincial government. Presently EPD, Punjab is the legislator department in the present scenario whose draft is reviewed by law department, provincial environment protection council and finally approved by provincial assembly.

National environment policy (2005) provides an overarching framework for addressing the environmental issues (particularly pollution of fresh water bodies and coastal waters, air pollution, lack of proper waste management, deforestation, loss of biodiversity, desertification etc.) confronting Pakistan. It recognizes the goals and objectives of the Pakistan National Conservation Strategy (PNCS), 1992, National Environmental Action Plans, and other existing environmental related national policies, strategies, and action plans. It also provides broad guidelines to the federal government, provincial governments, federally administered territories and local governments to address their environmental concerns and to ensure effective management of their environmental resources.

Legal Framework

The Govt. of Pakistan (GOP) has promulgated laws / acts, regulations and standards for the protection, conservation, rehabilitation and improvement of the environment. In addition to this, they have also developed environmental assessment procedures relevant to the proposed project.

Pakistan Environmental Protection Act 1997 (Amended 2012)

After implementation of the 18th amendment government of the Punjab, EPD adopted the federal act as such which is now called Pakistan Environmental Protection Act, 1997 amended in 2012. All the rules and regulations made there under have been adopted by EPD.

Pakistan Environmental Protection Agency (Review of IEE / EIA regulations, 2000

These regulations provide criteria for projects requiring IEE and EIA. The projects have been divided into two schedules according to the scoping of project.

The proposed project fall under schedule II at category A serial No.5 which is titled as "Oil and gas extraction projects including exploration, production, gathering systems, separation and storage". Therefore, this project is required to submit EIA before Environment Protection Agency, Punjab for its approval under section 12 of PEPA (2012). They also briefly describe the procedure for preparation and review of environmental reports in the department.

Punjab Municipal Solid Waste Management Guidelines, 2007

Punjab Municipal Solid Waste Management Guidelines, 2007 provides the general guidelines to the provincial government departments, local governments, private operators and other agencies that initiate to operate any solid waste management activity in urban areas.

The present set of guidelines is aimed to cover only the municipal solid wastes. Therefore, hazardous wastes do not come under the purview of these guidelines. Various components of solid waste management such as waste generation and collection, waste transfer, recovery of useful components, waste incineration, composting, bio-gas generation and land filling are covered in these guidelines giving technical guidelines to do these operations with minimal impacts to the environment. For the disposal of waste by land filling, it provides the general, design and operational guidelines. Apart from that, these guidelines also explain the pollution control system for the landfill site with design details. As far as environmental monitoring is concerned, these guidelines also prescribed the National Environmental Quality Standards for municipal and liquid industrial effluent and ground water Quality Monitoring Standards.

Pakistan Environmental Assessment Procedures, 1997

Pakistan Environmental Assessment Procedures, 1997 is in fact a package, which contains the following, sets of information relevant to the proposed Project.

Policy and procedures for filing, review and approval of Environmental Assessment Reports.

It describes environmental policy and administrative procedures to be followed for filing of environmental examination / assessment reports by the proponents and their review and approval by the concerned environmental protection agencies.

Other relevant laws

Punjab Local Government Ordinance, 2013

Environmental protection is devolved subject under Punjab Local Government Ordinance functions conferred by or under the Punjab LGO, 2013 and in performance of such functions may exercise such powers, which are necessary and appropriate.

Until different provision, rules, regulations or bylaws are made, the local governments may exercise such powers as are specified in the Punjab LGO, 2013.

CDGL Solid Waste Management ByLaws, 2005

These bylaws explain the powers of District Council and Municipal Council Nankana Sahib, for the collection, transfer and disposal of solid waste from the public areas. These laws also define the penalties for violations concerning the solid waste pollution. According to the bylaws, the District Council and Municipal Council concern may appoint adequate staff and adopt other measures for carrying out the effective implementation of these bylaws. DOE Environment playing dual role. He exercises the powers of 1997 through DG EPA and PLGO through Deputy Commissioner.

Canal and Drainage Act, 1873

This Act entails provisions for the prevention of pollution of natural or man-made water bodies.

The provincial government may by notification in the official gazette, prohibited the discharge of any effluent, including any solid or liquid matter or combination of them from industrial, municipal or any other source, into any river, canal and drainage work including any natural drainage channel.

In case of contravention of sub-section (1), the Divisional Canal Officer, after such enquiry including taking of sample, may impose such special drainage charges as may be prescribed and shall take other necessary steps to prevent such contravention and consequential cost so incurred shall also be recoverable from the person found responsible for such contravention.

After the publication of notification under sub-section (1), any person, organization or entity, interested in discharging such effluent into any river or drainage work, including any natural drainage channel, shall apply to the Divisional Canal Officer or any other person authorized by the Provincial Government in this regard, for grant of permission for the discharge of such effluent.

The applicant shall obtain a certificate of no adverse impact of such discharge on environment from the authority designated in this regard under any law for the time being in force relating to environment.

Labour Law

Construction and Operational activities during the course of construction could affect the occupational health of the workers. Quantitative national standards for occupational health are yet to be developed in Pakistan and employers are required to abide by the labour laws in respect of their own employees and also ensure that contractor to follow the relevant labour laws and rules relating to safety of workers. The proponent will ensure that the labor force engaged is not exposed to any danger by monitoring the contractor's work frequently. Labour Department Government of the Punjab is relevant department who cares for the implementation of labour laws and supervisor of ILO occupational and health guidelines.

Pakistan Penal Code, 1860

The Pakistan penal code 1860 deals with offences where public or private property or human lives are affected due to the intentional or accidental misconduct of an individual or body of people. In the context of environment, the Penal Code empowers the local authorities to control noise, noxious emissions and disposal of effluents. The NEQs enforced by EPA supersede the application of this legislation and industries and municipalities. The Penal Code, however, can provide a basis for the client to coordinate its activities with the local authorities to ensure that its construction activities do not become a cause of public nuisance or inconvenience.

Factories Act, 1934

The clauses relevant to the proposed project are those that concerned the health, safety and welfare of workers, disposal of solid waste and effluent and damage to public and private property. The Act also provides regulations for handling and disposing of toxic and hazardous materials. Given that the construction activity is classified as "Industry", these regulations will be applicable to the project contractors. In addition to this, the following will also consulted.

Employees cost of living relief and allowances – workers Children (Education Law) Companies Profit (Workers Participation) Law, Law of Essential Services, Industrial Relations Law, Workers Welfare Law, Employees Old Age Benefit Law, The Shop Act, The Law of Social Security, The Law of Payment of Wages and Minimum Wages, The Law of industrial and commercial establishments.

Public Participation and Consultation

Public Participation and Consultation are mandatory for EIA procedure. Sectorial guidelines issued by Pakistan Environmental Agency are required to be consult during the process of public consultation. EIA / IEE Regulations 2000 also give guideline for public participation of schedule II projects. An advertisement is published in to leading newspaper for comments of public hearing is conducted on any public place where each stakeholder is heard by the representative of Director General of EPA Punjab. Proper remedial measures / action is taken by EIA section on the reservation of stakeholders. Prior to this the consultant prepare the social impact of the project in the light of opinion of the people of the project area and accommodated in EIA study.

Occupational Health

Construction and operational activities could affect the occupational health of the workers. Quantitative national standards with respect to the above aspect are yet to be developed in Pakistan. However, guidance in qualitative terms can be obtained from the Pakistan Factories Rules, 1962 (based on the Factories Act, 1934) and the labour Law (amended) Ordinance, 1972 and ILO guidelines.

Toxic and Hazardous Waste

Section 14 of the PEPA Act, 1997 (amended 2012), prohibits the handling trade, collection and storage of hazardous substances. Hazardous substances rules have been formulated in this regard but they are still on the status of draft and available on the web site of EPD and Pak EPD. Protection of the environment with regards to toxic and hazardous waste to also covered by the Pakistan Penal Code (PPC), 1860.

Environment Protection Department, Punjab is mandated to monitor the transportation of hazardous materials within the provincial limits.

Punjab Hospital Waste Management Rules, 2014

According to this rule all hospitals, clinics, laboratories, dispensaries, pharmacies, nursing homes, blood banks , autopsy centers, mortuaries, medical research institutes and veterinary institution are strictly follow Punjab Hospital Waste Management Rules, 2014 for the environmentally safe-disposal of infectious and hazardous waste. Pakistan Environmental Protection Act, 1997 and Hospital Waste Management Rules, 2014 strictly prohibits unsafe disposal of all types of risk / hazardous waste in hospital. It binds the hospital for formation of hospital management committee and designates the responsible persons for each duty for collection storage and disposal of the risk waste. The safe storage and incineration of the risk waste is mandatory under these rules.

The salient features of the Punjab Hospital Waste Management Rule, 2014 are given below:

Waste Segregation

Risk Waste (yellow bags) shall be separated from non-risk (white bags) waste.

The disposal of medical waste including infusion bags, the risk waste e.g. chemical waste shall be placed in a suitable yellow coloured container made of metal and labelled with sign "Danger! Contaminated Sharps.

The yellow waste bags shall be labelled with time, date, point of production and description of waste and these bags shall be removed when 3rd quarter of these are filled.

Waste Storage

All risk waste should be collected in a separate, totally enclosed and secure central storage located close to the incinerator and large enough to contain all risk waste produced by the hospital which should be easy to clean and disinfect and most importantly easily accessible for the collection vehicles and concerned staff.

Waste Disposal

Waste shall be inactivated or rendered safe before their final disposal by suitable thermal, chemical incineration or other treatment methods depending on its nature / type of the waste material.

Effluent shall be tested to ensure that it confirms the Environmental Quality Standards before its final disposal. The method of disposal shall be operated by hospital after its EIA approval. Risk waste shall be incinerated within 24 hours of its delivery to incinerator. The landfill shall be located with minimal risk of pollution of groundwater and rivers. The landfill should be regular monitored by the local council and daily collection of risk waste shall be taken by the vehicles of the local council.

Committee

Provincial Committee

The provincial committee comprising of;

Secretary Environment (Chairperson)
Members of the Committee includes:
Secretary Health Department, Nominees of the local Govt. Department, Representative of Medical Association, Representative of Medical University in the Province, Representative of Private Hospital Association and DG EPA.
The committee shall monitor the periodically review of implementation of the rules and recommended adaption of such policy measures, plans and projects as it may necessary for the effective management of hospital waste in the province.

Divisional Committee
Divisional Commissioner (Chairperson)

Members of the Committee are;
EDOs Health, Representative of PMA, Medical Superintendent of District Headquarter Hospital, Representative of Private Hospital Association, Representative of two NGOs working in health sector and District Officer, Environment.
The Divisional Hospital Waste supervisory committee shall monitor the periodically review of implementation of the rules and recommended adaptation of such policy measures, plans and projects in all Districts of Division as it may necessary for the effective management of Hospital Waste in the Division.

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ENVIRONMENTAL MANAGEMENT & MONITORING PLAN

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil

(6)
ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

6.0 GENERAL

This is part of the study discusses the Environmental Management Plan and describes institutional arrangements required for its effective implementation. An Environmental Management Plan renders a delivery mechanism to reduce adverse environmental impacts of a project during its execution, enhance project benefits, and introduce standards of good practices to be adopted for all project works.

6.1 PURPOSE OF ENVIRONMENTAL MITIGATION

For the project to be running successfully and compliance with environmental regulations mitigation of impacts caused by the project is required. The purpose of the need of mitigation can be answered by various questions as follows:

1. What is the problem?

When the resources of environment are being used ruthlessly, it results in degradation of the environment to the extent that environment loses its resilience and the carrying capacity reduces the resources are found reduced and the recovery process is too slow or nearly no recovery is possible.

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

The problems that would occur fall within the project premises, and near the boundaries of the project location. The impacts would range up to the distance where project related activities are performed or up to the geographical zone where the effects spread.

Impacts would show their presence soon after the project development starts.

3. Where the problem should be addressed?

The problems should be addressed where they are originated. That is at the project location.

4. How the problem should be addressed?

Problem can be addressed by using environmental friendly practices. Such practices can be followed by following mitigation plan.

Table 2: EMP for construction phase

Environmental aspects	Environmental Impacts of the Activity	Proposed Mitigation Measures	Responsibility
CONSTRUCTION PHASE			
Noise		In order to avoid the nuisance of noise the project maintenance manager shall ensure the all vehicles, equipment, machineries used during construction phase are in good working condition.	Project Manager
Water Pollution	Unplanned wastewater disposal may contaminate the surface water channels, surface soil and depending upon the quantity of wastewater generated, it has a potential to contaminate the ground water aquifers.	Wastewater generation during construction phase shall be reused again for material making for construction phase and sprinkling of dust on soil. Domestic wastewater will not be there at the site because at site workers will use local/public washrooms	Project Manager
Air Emission	Generation of dust and particulate matters is an issue that could arise due to construction activities. Gaseous emissions including SOx, NOx, CO2, lead and CO during construction phase.	The construction materials e.g. soil, clay would be covered appropriately. Instead of open and dry dumping, sprinkling of water in a quantity that reduces the chances of dust generation	Project Manager

	These gases are ozone depleting reagents. Besides, they also pose threat to human health.	would be done. The workers would be provided safety gloves, masks and ear buds and wherever necessary goggles to avoid health complications. Good quality fuel shall be used in the machineries, generators to avoid emission. Vehicles, machineries with good conditions which fall on the quality standards shall be used to control the exhaust emission.	
Solid Waste	Unplanned dumping of solid waste generation during construction phase can lead to blockage of roads, waterways and also create unaesthetic sight of the proposed location.	Solid waste generated during construction phase shall be reused in construction activities rather than dumping. The solid waste during construction phase will consist most of soil, packaging materials, plastic bags, iron rods, and food leftovers. The organic portion of solid waste shall be collected by local sanitary workers while other material will be reused in the construction activities.	Project Manager

Health & safety	Unskilled workers may create issues in attaining the overall health environment and safety policy.	Regular onsite and offsite training of the workers shall be conducted. Impromptu meetings and discussions with the site in-charge and daily wages workers will be done to resolve any issues that may create health safety and environmental problems during construction phase.	Project Manager
Emergency Response	Accidents and / or emergency breakdown of the equipment/machine ries/vehicles involved may create environmental, health and safety hazards.	This situation can be avoided by regular maintenance of the vehicles for quality assurance. Each equipment will be checked prior to operation to avoid accidents and human health danger due to such accidents.	Project Manager

Table 3: EMP for Operation Phase

Sr. No	Environmental aspects	Environmental Impacts of the Activity	Proposed Mitigation Measures	Responsibility
OPERATIONAL PHASE				
1.	Noise	In the project of storage, during loading and unloading noise may be generated.	_ Workers should be told and encouraged to use PPE's (ear plugs or ear muffs).	Project Manager
2.	Water Pollution	At the project site, there will be	_ There will be no industrial	Project Manager

		no wastewater generation during operational activity; there will be only domestic wastewater.	activity so on wastewater will be generated only the domesticated waste water which will be treated by passing through septic tanks and finally discharged in local drain _ Efforts should be made to ensure that water is conserved and that environment-friendly techniques are adopted too.	
3.	Air Emission	Source of air pollution during operation phase would only be dust generated	_ Proper ventilation can limit the amount of indoor pollutants. _ Water spraying should be practiced where required. _ Regular monitoring _ No waste should be burnt at the premises. _ _ Generators will be properly tuned and maintained and proper enclosure will be provided.	Project Manager

4.	Solid Waste	Solid waste comprise of a domestic waste and waste scrap mainly which would be sold to their respective dealers.	_ No waste should be burnt within the premises _ Small waste storage bins should be installed.	Project Manager
5.	Health & Safety	Operation of the project may cause some concerns for safety, public health and nuisances within the project area.	_ Providing Personal Protection Equipment (PPEs) such as gloves, masks to the workers. _ Basis medical training should be provided to the specified work staff and basis medical service and suppliers to workers.	Project Manager
6.	Emergency Response	Fire hazard	_ Fire extinguishers should be properly maintained and checked periodically. _Prohibiting flammable materials in the premises. _ Maintaining fire alarm systems for detection and warning of fire. _ Adequate training of workers on use	Project Manager

			of firefighting system to deal with the situation. _ Oil leakage will be controlled by providing oil detection system _ Safety plan in case of oil leakage will be followed	

6.2 ENVIRONMENTAL MONITORING PLAN

Environmental monitoring is a vital component of the Environmental Management Plan. It is the mechanism through which the effectiveness of the environmental management plan in protecting the environment is measured. The feedback provided by the environmental monitoring is instrumental in identifying any problem or lapse in the system under implementation and planning corrective actions.

Table 4: Environmental Monitoring Plan for construction phase

Components	Objective of Monitoring	Parameter to be Monitored	Measurement	Frequency	Location	responsibility
Noise Levels	To determine the effectiveness of the noise abatement measures on the sound level	Noise level on the site and adjacent area on dB(A) scale	Noise level reading will be taken	Twice during construction	At least two locations on the unit boundary	Environment Officer / Manager
Waste Collection, Storage and Disposal	To check the availability of Waste Management System and Implementation	Inspection of Waste Generation, collection, Storage and Disposal at site	Visual inspection	Once daily	Construction site	Environment Officer / Manager
Soil contamination	To determine the effectiveness of the control measures taken to minimize the spillage of oil and chemicals	Inspection of equipment and vehicles	Visual inspection and availability checks	Monthly inspection	All vehicles and equipment in use at construction site	Contractor / Environmental officer
Workers safety	To check and evaluate the	Injuries and accidents	Recording injuries	Daily	Onsite	HSE officer / contractor

	effectiveness of the workers' safety plan					
Water conservation	To determine the effectiveness of the Water Conservation Techniques in Practice	Leakages, spills and wastages	Visual inspection and record tracking	On monthly basis	At all points of use	Environmental officer / manager

The monitoring of the EMP and the communication and documentation mechanism that will be employed during the operational phase will be based on the Environmental Management System (EMP) of the project proponents and the certification and legal bindings. The management system of the project proponents will be the same as the certified EMS in place at the company. Approximately 50,000 PKR budget will be reserved for the Environmental Monitoring and Measures.

Table 5: Environmental Monitoring Plan for Operation Phase

Components	Objective of Monitoring	Parameter to be Monitored	Measurement	Frequency	Location	Responsibility
Noise level (dB)	To check whether the existing noise control measures are	Noise level near the receptor	Noise Measurement	Annually	At least two locations on the plant boundary	Environment officer

	able to bring the sound level within prescribed limits					
Waste disposal, procedure for waste collection, storage, and disposal	To check the availability of waste management system and implementation	Inspection of waste generation, collection, storage, and disposal will be undertaken at each site of the project activity	Visual inspection	Once daily	Entire unit	Administration Officer
Safety	To check and evaluate the effectiveness of the workers' safety plan and availability and access of First Aid facilities	Injuries	Injuries will be recorded	Daily	Entire unit	Administrator

6.3 INSTITUTIONAL CAPACITY OF THE UNIT

The organizational structure for the Environment Management Plan is outlined below:

6.3.1 PRIMARY RESPONSIBILITIES

The primary responsibility for implementing EMP within the company lies with the owner of project

6.3.2 OPERATION MANAGEMENT & CONTROL

Conducting the operational activities in environmentally sound manner will be the responsibility of the concerned Manager; for which he will be trained.

6.3.3 SUPERVISION & MONITORING

Senior supervisor will be responsible for all environmental issues and for the implementation of EMP.

6.3.4 COMMUNICATIONS AND DOCUMENTATION

An effective mechanism to store and communicate environmental information during the project is an essential requirement of an EMP.

6.3.4.1 MEETINGS

Two kinds of environmental meetings will take place during the project:

- Kick-off meetings
- Weekly meetings

The purpose of the kick-off meeting will be present the EMP to project staff and discuss its implementation and to discuss any event of environmental significance that has happened in the under-discussion industry or a similar industrial unit to investigate its route causes and develop its solutions.

The purpose of the weekly meetings will be to discuss the conduct of the operation and environmental issues and their management. The proceedings of the meeting will be recorded in the form of weekly environmental report.

6.3.4.2 CHANGES-RECORD REGISTER

A change-record register will be maintained at the site, in order to document any changes in project design. These changes will be handled through the change management mechanism.

6.4 ENVIRONMENTAL TRAINING

Training is an integral part of a preventive strategy. Environmental and disaster management training will be required to ensure proper implementation of effective environmental management and monitoring plan; and disaster management plan. However, training could be organized by Owner involving relevant staff. As a trainer, competent Consultant can be outsourced. Important training under the spectrum needs to include:

- Training on firefighting and safety management;
- Training on environmental safeguards and compliance;
- Staff training on environmental monitoring and reporting;
- Training on occupational health and safety measure.

6.5 SUMMARY OF IMPACTS AND THEIR MITIGATION MEASURES

Environmental monitoring is a component of the Environmental Management Plan. It is the mechanism through which the effectiveness of the Environmental Management Plan in protecting the environment is measured. The feedback provided by the environmental monitoring is instrumental in identifying any problem or lapse in the system under implementation and planning corrective actions. The main objectives of the environmental monitoring are:

- To provide a mechanism to determine whether the project construction contractors are carrying out the project in conformity with the EMP.
- To identify areas where the impacts of the project are exceeding the criteria of significance and therefore, require corrective actions.
- To document the actual project impacts on physical, biological, and socio-economic receptors, quantitatively where possible, in order to design better and more effective mitigation measures.

6.6 EQUIPMENT MAINTENANCE DETAILS

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6.6 EQUIPMENT MAINTENANCE DETAILS

Complete inspection and maintenance of tanks, vents and all other auxiliaries will be done by 3rd party as and when required. Maintenance plan for firefighting equipment is as follows:

Task	Weekly	Monthly	Semi-Annually	annually
Visual Inspection	✓			
Testing and Inspection			✓	
Check for Leakage		✓		
Recharging				✓
Fire Mains & Nozzles		✓		
Containers/Cylinders			✓	
Control and section valves			✓	

6.7 ENVIRONMENTAL BUDGET

Approximately PKR 50,000 budget will be reserved for the Environmental Monitoring and Measures.

6.8 CHANGE MANAGEMENT PLAN

The EIA/IEE recognizes that changes in the operations or the EMP may be required during the operation and therefore a Change Management Plan has been provided to manage such changes. The management of changes is discussed under two separate headings, changes to the EMP and changes to the Operation.

6.9 CHANGING IN PLANNING AND DESIGN

The change management system recognizes three orders of changes.

I. First Order Change

A first order change is one that leads to a significant departure from the project described or the impacts assessed in the EIA/IEE and consequently require a reassessment of the environmental impacts associated with change. Examples of such change include change in location of the proposed plan.

In such an instance, the environmental impacts of the proposed change will be reassessed, and the results sent to the Punjab EPA for approval.

II. Second Order Change

A second-order change is one that entails project activities not significantly different from those described in the EIA/IEE, and which may result in project impacts whose overall magnitude would be similar to the assessment made in this report. In case of such changes, the environmental impact of the activity will be reassessed, additional mitigation measures specified if necessary, and the changes reported to the Punjab EPA.

III. Third Order Change

A third-order change is one that is of little consequence to the EIA/IEE findings. This type of change does not result in impact levels exceeding those already assessed in the EIA/IEE; rather these may be made onsite to minimize the impact of an activity. The only action required in this case will be to record the change in the change record register.

6.10 CHANGING IN MONITORING AND MANAGEMENT PRACTICES

The EIA/IEE and the EMP have been developed based on the best possible information available at the time of the EIA/IEE study. However, it is possible that during the construction and operation phase some aspects of the EMP may need to be changed owing to their non-applicability in a certain area of operation or the need for additional mitigation measures based on the findings of environmental monitoring during the construction and operation phase. In such cases following actions shall be taken.

1. A meeting will be held between management and the concerned contractor. During the meeting the proposed deviation from the EMP, planning and designing will be discussed and agreed upon by all parties
2. Based on the discussion during the meeting, a change report will be produced collectively, which will include the original EMP clause/plan or design, the change that has been agreed upon, and the reasons for the change
3. The report will be signed by all the parties and will be filled at the site office. A copy of the report will be sent to Housing Scheme and contractor head offices.
4. All relevant project personnel will be informed of the change.

6.11 COMPENSATION IN TERMS OF MONEY

Changes in the EMP can be done upto 3% of the total development cost in case the Monitoring of the environment according to the prescribed plan does not render useful.

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STAKEHOLDERS PARTICIPATIONS

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil Model Town, District Lahore

(7)

STAKEHOLDERS PARTICIPATION

The project proponent engaged an Environmental Expert Team who conducted a survey of the project site and had discussions with stakeholders and consult with the local people to evaluate the project socioeconomic impacts. People provide the massive information about the project and have positive remarks regarding the project development.

7.1 Methodology of Consultation

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

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

Consultation was held with following:

7.1.1 Proponent

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

7.1.2 The Responsible Authority

Management of the subject project is the responsible authority to take all measures prior to the activity.

7.1.3 Some other Departments & Agencies

For the impact analysis details meetings were held with the management of the subject project, local community, education institutes, health institutes, hospital and NGOs. issues were discussed that may affect the environment and also the implementation of proposed project. All possible mitigation measures were considered and incorporated in the Environmental Management Plan.

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

7.2 Affected & Wider Community

There is no affected community present in the radius of our study area. Team has consulted with the inhabitants of the different villages. They provided positive remarks regarding the subject project and in the favor of the subject activities for the proposed project. Stakeholders participation performer's and socioeconomic questionnaire were get filled by the inhabitants to evaluate the project socioeconomic impact.

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CONCLUSION

FY 2025

Khewet No.252, 264/258, Khatooni No.462 Qitat No.13, At Mouza Asal Suleman, Tehsil Model Town, District Lahore

(8)
CONCLUSION AND RECOMMENDATIONS

8.1CONCLUSION

The report presents Environmental Impact Assessment (EIA) of the Proposed Construction of **"Oil Storage and Filling Plant by M/s Agrimore Pvt. Ltd.".**

EIA of Proposed Project is performed according to guidelines of EPA. It includes description of the project, description of the environmental baseline, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is included in the study.

The performed EIA showed all anticipated impacts (both positive and negative), associated with the project. Appropriate mitigation measures as explained in the environmental study should reduce, if not eliminate, these impacts so that these are within acceptable limits. Moreover, no deterioration, depletion or exploitation of resources is expected to be caused by this project.

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

It is accordingly recommended that Environmental Approval for the project may be issued by the Environmental Protection Agency, subject to payment of the requisite scrutiny fee by the proponent of the project.

8.2RECOMMENDATIONS

The Environmental Impact Assessment study and survey results are finally evaluated to recommend the following:

- Implementation of EMP must be given top priority.
- Proper PPEs including ear plugs, ear muffs, mufflers, goggles, gloves and shoes etc. should be provided to workers
- Train workers to use PPEs
- Advise workers to follow SOPs.

- Installation of fire extinguishers in the premises and their monitoring must be ensured.
- Equipment maintenance and efficiency must be checked.
- No compromise no public health and environment should be allowed.
- Waste minimization practices should be employed and workers should be encouraged to adopt such methods.
- Wages should be distributed on time.
- Proper tree plantation plan should also be developed in order to make the unit environment friendly.
- Small waste storage bins should be installed at different corner for proper waste collection and discharge.
- Proper dispensary and First Aid Box should be provided for workers
- Smoking should be avoided within premises of project site and near fuel storage areas.
- The Security Guards shall also be trained to act in case of all possible emergency situations. The fire alarms can be activated to signal evacuation. At the same time, communication shall be made with hospitals, emergency services and police for urgent support.
- The proposed Environmental Management & Monitoring Plan should be implemented.

LIST OF GLOSSARY

Air Pollution	Air is made up of a number of gases, mostly nitrogen and oxygen and, in smaller amounts, water vapour, carbon dioxide and argon and other trace gases. Air pollution occurs when harmful chemicals and particles are emitted to the air – due to human activity or natural forces – at a concentration that interferes with human health or welfare or that harms the environment in other ways.
Ambient Air Quality	Ambient air quality refers to the quality of outdoor air in our surrounding environment. It is typically measured near ground level, away from direct sources of pollution.
Archaeology	The study of human history and prehistory through the excavation of sites and the analysis of artefacts and other physical remains
Biodiversity	The variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable.
By-Laws	A rule made by a local authority to govern activities within the area it controls. Examples include bye-laws covering waste disposal, traffic or public events or signs.
Carbon Dioxide	A colourless gas that is naturally produced from animals and people in exhaled air and the decay of plants.
Carbon monoxide	A highly poisonous, odourless, tasteless and colourless gas that is formed when carbon material burns without enough oxygen.
Mitigation	The action of Lessing in severity or intensity
Evaluated	Estimated or determine the nature, value, quality, ability, extent
Legislation	Law entitled by a legislative body
Discrepancies	A difference between conflicting facts, claims or opinion
Aspects	A distinct feature or element in a problem
Compliance	Acting according to certain accepted standards
Flora	All the plants life in a specific region
Fauna	All the animal life in a specific region
Demarcated	Separate clearly, as if a boundaries
Screening	The display of a motion picture
Substitutions	An event in which one thing is substituted for another
Regulation	An authoritative rule
Stakeholder	A person or organization with a interest
Vulnerable	Susceptible to attack
Annunciation	A formal public statement

List of Acronyms

Abbreviations

Acronym	Full Text
BHU	Basic Health Unit
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
dB	Decibel
DHQH	District Headquarters Hospital
ESRMP	Environmental, Social & Risk Management Plan
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMP	Environmental Management Plan
EPA-Pb	Environmental Protection Agency, Punjab
EPD	Environment Protection Department
ERS	Emergency Response System
ESH	Environmental Safety and Health
ESHU	Environmental Safety and Health Unit
GoPb	Government of the Punjab
GoPk	Government of Pakistan
IEE	Initial Environmental Examination
IWT	Indus Water Treaty
JICA	Japan International Cooperation Agency
MCH	Mother and Child Healthcare Centre
NEQS	National Environmental Quality Standards
NOC	No Objection Certificate
Pak EPA	Pakistan Environmental Protection Agency
PEPA	Punjab Environmental Protection Act
PM	Particulate Matter
PSDP	Public Sector Development Programme
RHC	Rural Health Centre
SHC	Sub Health Centre
SPM	Suspended Particulate Matter
SW	Solid Waste(s)
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UBC	Uniform Building Code
WAPDA	Water and Power Development Authority
WHO	World Health Organization