

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

(EIA)

CONSTRUCTION OF “ASPHALT PLANT” BY M/S MUSADDAQ ENTERPRISES AT SQUARE NO.35, KILLA NO.11, CHAK NO.114-JB, BYPASS, FAISALABAD



PROPONENT

**Musaddaq Ali
S/o Mushtaq Ahmad
CNIC: 35503-0142863-9
R/o Main Road, House No.P-13686, Street No.1, Mohollah
Sereen Abad, Faisalabad.**

**Area of Project: 11-Kanal
Cost of the Project: 50-Million**

Final Report
(Aug 2023)

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EXECUTIVE SUMMARY

Title & Location of the Project

It is intention of Mr. Musaddaq Ali to get environmental approval for Asphalt Plant, situated at Square No.35, Killa No.11, Chak No.114-JB, Bypass, Faisalabad by submitting the Environmental Impact Assessment Report as per direction of Environment Protection Agency for compliance of section 12 of PEPA 1997 (Amended 2012).

The project falls under schedule II of IEE and EIA Regulations, 2022.

Location

Project site is located at Situated at Square No.35, Killa No.11, Chak No.114-Jb, Bypass, Faisalabad.

Project Proponent

Name:	Musaddaq Ali
Father Name:	Mushtaq Ahmad
CNIC:	35503-0142863-9
Address:	Main Road, House No.P-13686, Street No.1, Mohollah Screen Abad, Faisalabad.

Copy of CNIC and other relevant documents are attached.

Brief Outline of the Proposal

The subject proposed project is construction of the Asphalt Plant under the name & style “Musaddaq Enterprises (Asphalt Plant)” situated at Square No.35, Killa No.11, Chak No.114-Jb, Bypass, Faisalabad. Total area of the plant is **11-Kanal**.

Total estimated cost of the project is approximately **Rs.50-Million**. This project is for the betterment and advancement of the region.

Major Impact

In order to identify all the activities associated with the project both during construction and operation phase with potential to cause adverse environmental impacts and harm, a through review has been conducted. Project will not have any major adverse impacts on the nearby community and environment. Overall the project will have positive impacts on the local population and country as a whole. Moreover, area for plantation is also reserved for air purification within the project vicinity.

Summary of Environmental Impacts and Mitigation Measures

Pollutant	Constructional phase	Operational phase
Particulate matter (PM)/dust	Particulate matter will be generated during the constructional and transportation activities at the site. Due to raw material loading / unloading	During the operational phase dust will only be generated due to transportation and that impact will be outside the building on the unpaved roads or non-concreted roads.
Gaseous emissions	Flue gases will be generated due to site generators and vehicles	Flue gases can be generated due to generators and vehicles
Noise	Noise will be generated due to construction machinery and vehicles transporting materials.	Noise can be generated due to generators and vehicles transportation
Solid waste	Solid waste will be generated due to construction and domestic sources Due to sludge from septic tank	Solid waste will be generated due to domestic sources Due to sludge from septic tank treatment facility
Soil contamination	Soil will be contaminated due to leaching of oil, fuel, any stored oil.	Soil can be contaminated due to leaching of oil, fuel, any stored oil.
Waste Water	Waste water will be generated from constructional and	Waste water will be generated from domestic sources

	domestic sources	
Health & Safety issues	Health & safety issues will be arose due to machinery handling and constructional activities	Health & safety issues can be arose due to short circuit, fire hazards etc.
Socioeconomic	Disturbance to neighbors by constructional activities	Employment opportunities

Recommendations and Mitigation Measures

Pollutant	Recommendations during constructional phase	Recommendations during operational phase
Particulate matter (PM)/dust	Sprinkling of water All construction raw material should be kept covered	Proper compaction of access roads Avoid off road travel Maintain vehicles speed Monitoring should be conducted as per EPA PEQs Rules 2001, if required
Gaseous emissions	Constructional machinery and vehicles should be tuned and maintained properly All project vehicles should be checked regularly.	Canopies should be built over generators to avoid noise pollution. PPEs should be provided to workers Generators should be maintained properly Generators will be installed in a specially constructed room. Monitoring should be conducted as per EPA PEQs

		Rules 2001, if required
Noise	Vehicles to carry raw materials should be operated during night time as far as possible. Ear plugs should be provided in case of heavy noise.	Ear plugs should be provided to workers in case of high noise. Monitoring should be conducted as per EPA PEQs Rules 2001, if required
Solid waste	Constructional waste should be utilize for road filling and maintenance. Domestic waste should be disposed off properly, handed over to contractor placed in bins.	Waste bins should be placed at suitable places. Domestic waste should be handed over to local contractors. Periodic cleaning of the septic tank should be done.
Soil erosion / Soil contamination	Placed sheet under generators or leaching material to avoid leaching. Less removal of vegetation or cleaning land	Placed sheet under generators or leaching material to avoid leaching. Store any hazardous waste or fuel properly at safe place. Restoration and reclamation of land will be done in case of soil erosion or removal of vegetation.
Waste Water	Waste water treatment facility should be installed to treat the waste water prior to discharge into any drain or used for agriculture purpose. Waste water from construction and domestic sources should be	Wastewater should be treated prior to discharge into any drain or used for agriculture purpose. Wastewater from domestic sources should be treated in septic tank.

	treated in waste water treatment facility before drain out or used in agriculture land.	Waste water after treatment should be used for irrigation purpose or drain out in nearby drain.
Health & Safety issues	PPEs should be provided to workers during constructional activities.	Training of workers should be conducted regarding health and safety. First aid measures should be available. Proper housekeeping should be ensured. Security guard should be present.
Socioeconomic	People should be informed in advance when work is about to start at the site. Job opportunity should be provided to local people of the area.	Community wellbeing should be considered and anticipated measures are recommended to preserve local culture and ecosystem. Job opportunities should be provided to local people of the area.

Proposed Environment Monitoring

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

Ambient Air Monitoring

Regular monitoring for ambient air should be conducted during construction and operation phase as per PEQs rules and report should be submitted to EPA Punjab on annually basis.

Noise

Regular monitoring for noise level should recorded periodically during construction and during operation it should be conducted on annually basis and report should be submitted to EPA Punjab.

Water Quality

Regular monitoring of groundwater should be conducted during construction and operation phase and report should be submitted to EPA Punjab. Record should be maintained regarding.

Schedules of Proposed Monitoring

Sr.	Parameters	Monitoring Schedule
1	Ambient Air Monitoring (NO _x CO _x SO _x VOCs PM ₁₀)	Annually
2	Noise Level	Annually
3	Water Quality	Annually

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

Conclusion

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.



INTRODUCTION

1.1 Purpose of the Report

Environmental Impact Assessment report is being submitted to the Environment Protection Agency (EPA), Government of the Punjab, District Faisalabad for the compliance of Section 12 for the approval of the said project.

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

1.2 Identification of the Project

The Project falls under schedule II of IEE / EIA Regulations, 2000 (Amended 2012).

1.3 Project Proponent

Name:	Musaddaq Ali
Father Name:	Mushtaq Ahmad
CNIC:	35503-0142863-9
Address:	Main Road, House No.P-13686, Street No.1, Mohollah Screen Abad, Faisalabad.

Copies of CNIC attached.

1.4 Nature, Size and Location of the Proposed Project

The subject proposed project is construction of the “**Asphalt Plant**” situated at Square No.35, Killa No.11, Chak No.114-JB, Bypass, Faisalabad. Total area of the plant is **11-Kanal**. Total estimated cost of the project is approx. **50-Million**. The project is for providing fine quality asphalt.

Currently the proposed site is open land and do not fall in flooding zone (not prone to flood).

1.5 Location

Project site is located at Square No.35, Killa No.11, Chak No.114-Jb, Bypass, Faisalabad.

1.6 Methodology of EIA Report

For the purpose of this report, environmental and social baseline data and conditions at / around the project site has been undertaken. The methodology adopted to conduct the EIA studying includes review of layout plan, orientation session, development of data, acquisition plan, analyzing of data, review of existing data, primary and secondary data, collection survey, screening of potential environmental impact and mitigation measures and also interviews with people near the project area has been conducted to collect their opinion regarding the proposed project and after finding it has been concluded that the project will not have any major adverse impacts on the socioeconomics environmental of the existing community.

(2)**SCOPING****2.1 SPATIAL & TEMPORAL BOUNDARIES OF ENVIRONMENTAL ASSESSMENT****First step (Pre-Environmental Impact Assessment)**

The first step is to determine the types of processes to be chosen and the different potential sites to be studied. Following the financial and technical thinking throughout, the EIA becomes more precise at each phase, in order to propose the best processes and sites according to local resources and sensitivities.

Once the project is almost defined the EIA analyzes a small range of solutions which compares a few process variations and a few pre-selected sites. Sometimes there is only one site and only one process left.

Second step (detailed Environmental Impact Assessment)

The second step of the EIA begins by scoping and screening the main impacts to be studied. It is important to implement the “scoping” with local authorities and representatives of affected groups to avoid omitting potentially important impact. It is now appropriate to have the terms of reference of the EIA drawn up by a steering committee, in order to pinpoint the exact contents of the EIA and the best way to conduct it.

Pre-environmental Impact Assessment

This part constitutes the first step of the EIA. It leads from the pre-feasibility study to a well-defined project that can be shown to authorities and local representatives. This first step towards the project must be the result of a financial, technical and environmental analysis leading to the final project bringing together the best available technologies and the least sensitive sites. The environmental survey during this phase must analyze:

- Potential sites,

- Raw material
- Constructional processes,
- Transportation.

Site selection

The first task of this activity is to demarcate the site and other benchmarks, with the help of drawings prepared during the pre-construction and design phase of the project. Once marking is complete; the land will be cleared and prepared for subsequent construction activities. The whole purpose is to maintain the harmony of the area during construction.

Pre-construction/Design Phase Site Investigation:

The geotechnical and soil investigation of the project site will be carried out for determining the suitability of a site to support the structures, and other development works.

Geotechnical/Soil Investigation:

An extensive soil investigation of the project site will be carried out. The topographical survey will be undertaken by the surveying consultant to demarcate the area and measure the ground elevation. Subsequently, engineering details will be worked out, and working drawings, specifications for equipment and material will be prepared.

Selection of Contractor:

Once, the engineering details become available Builders and Developers will start to work on the project.

Construction Phase Contractor Mobilization:

This component involves the transportation of construction machinery and equipment to the project site and the establishment of the contractor's camp and office. The contractor will be responsible for the activities being carried out at the project site.

Raw material

Fired bricks and clay blocks
Cement composites



Concrete
Sand
Stone
Steel
Plastic pipes

Varies

Deforestation and reforestation usually necessitate an assessment of the impact on:

- **The remaining stands:**
 - Falling trees and skidders. The number of non-target destroyed trees can be higher than that of target trees.
 - Selected removal of certain species can lead to biodiversity depletion,
 - Systematic removal of the best trees leads to genetic erosion,
 - The absence of seed trees endangers the regeneration of the forest,
 - Large gaps in the canopy expose the remaining stands to wind-throw risks,
 - Endemic species can be threatened, by deforestation or reforestation,
 - Fire risks have to be considered both in the case of deforestation and reforestation particularly when using sensitive species like pines.
- **Water resources:**
 - Deforestation generally increases surface run-off which can involve erosion and floods,
 - Soil preparation for reforestation exposes it to both wind and water erosion. This erosion usually produces turbidity in water and sedimentation in the river beds.
 - Pollution can be generated by fuel leakage and the use of pesticides.
- **Air and climate:**
 - The major emissions into the air are smoke and dust which can hurt affected groups,
 - Climate changes can affect both micro-climate (generally increasing temperature and wind speed, and diminishing evaporation) and global climate with, for instance, the greenhouse effect caused by deforestation.
- **Soil:**
 - Deforestation and reforestation operations can lead to erosion, depletion of soil fertility and risks of landslides,
 - In some cases, fast growing plantations (i.e.: eucalyptus) can gradually both deplete soil fertility and acidify it.
- **Biodiversity:**
 - Destruction of large tracts of forest, without maintaining ecologically rich zones, is a major concern in forest exploitation,
 - Wildlife often suffers from noise pollution and increased pressure from poaching.

Constructional processes

It is important to note here that the EIA is implemented before project construction. This implies that data will not be available on site. The EIA team must at this stage include a process specialist to predict the various emissions and performances of the proposed processes and procedures.

Environmental issues are too complicated and interconnected to be solved one at a time. The limits of the “end of pipe” approach, commonly used during decades, are well-known and it is now necessary to use systematic approaches in order to introduce a more global conception of the environment and to address the source of the problems directly.

For the person conducting an EIA, this logical framework means that the sooner causes for concern are well understood, the better environmental issues are resolved. It is thus very important to put a strong emphasis on assessment before project implementation. This will prove not only more environmentally friendly but also more cost effective.

It is very important to note that technology is always evolving and, in the IEE team, it is the process specialist's role to propose the best available solution to any problem related to environmental considerations and human well-being. This chapter is mainly constructed to allow IEE authors to classify the project in comparison with international standards.

Transportation

In most cases, transport of raw materials, general supplies and final products causes an increase in traffic around the facilities. Transportation may have repercussions, hence the need to consider the five key activities concerned: planning transport development, siting transport facilities, the construction of transport infrastructure, maintenance and operation of transport infrastructure and the use of transport infrastructure and vehicle maintenance.

- **Planning transport development**

If the creation of the project involves important changes in traffic conditions, the IEE must study the transportation alternatives both for the siting of transport facilities and for the modes of transportation. It is important to compare at this stage the different possibilities of transportation (road, rail or shipping) and to choose the least expensive in terms of investment, maintenance, environment and security. A matrix analysis can be relevant in evaluating each possibility.

- **Siting transport facilities**

Roads, railways and harbours are infrastructures which generally need their own EIA. The project EIA must nevertheless study this problem and propose a global solution for the project services which truly respects the environment. Any change in the road capacity also has to be seriously addressed, mainly for affected communities.

Project justifications

Once the different sites are pre-selected and a comparative analysis effected, and once the best technologies available have been selected to remedy possible environmental problems, the project is well defined and can be presented to the authorities and the affected populations.

The definition of the project represents extensive studies and work. This aspect must be valorized at this stage of the EIA to explain as precisely as possible the reasons which have led to advocate the project as it stands. Matrix explanation of why each site, resource, process, infrastructure, have been chosen over others can help to justify the project.

Depending on the authorities' requirements, the owners' choice or other considerations, the EIA plan can vary from case to case. Some EIAs study the different alternatives right to the end of the assessment and leave the final decision to the authorities, some others, as presented before, define the best project in the best site and then propose to study more precisely its environmental and social impacts. There

are no standard best solutions, each case must be treated as a particular case where the best solution has to be defined by the steering committee.

2.2 IMPORTANT ISSUES AND CONCERNS RAISED DURING CONSULTATION

Local community perception with regard to the implementation of the project components has been carried out during this EIA study. This gave the perception of the general public about this project. The results of public consultation conducted in the study area showed a strong agreement among the attendees (official stakeholders, representatives, general public, local community leaders, etc.) that this project will improve overall socio-economic conditions of people of the area. They had little reservation regarding some adverse impacts on different environmental parameters during construction and operation stages of the proposed project.

1. Due to constructional activities of the project traffic issues will be come up.
2. Due to constructional activities dust emissions will be raised.
3. Due to constructional activities noise issues also be raised.
4. Others

To cure all these issues the proponent has already planned proper mitigation measures as discussed in accompanied Environmental Management Plan.

2.3 SIGNIFICANT IMPACTS AND FACTORS TO BE DETERMINE

The proposed public consultation schedule at various phases of the Project. During construction and operation of the project, public consultation is planned as follows:

- i. Suggestions of the general public may be sought through press or other mass media whenever deemed necessary.

- ii. Local NGOs (if any, at any time during project construction or life), particularly working in the sector of environmental sanitation, will actively be involved in public representation.
- iii. TMA will frequently be contacted on matters concerning the progress, adverse impacts and mitigation measures.
- iv. To identify and assess significant social impacts, of the project activities on the surrounding area and people;
- v. To propose suitable means for probable mitigation of the significant adverse social impacts.

(3)**CONSIDERATIONS OF ALTERNATIVES OF PROJECT****3.1 Site alternatives, their selection and rejection criteria:**

The land is already acquired by the project proponent as prospecting license for housing unit. The area is considered suitable in terms of environment as well as geologically for establishment of Musaddaq Enterprises. Following is the realistic detail in this regard:

i. Without or Zero or No Project Alternative

The “No Project Alternative” alternative would mean that: land and environment of project area is much suitable for the establishment of housing projects; therefore, development of proposed Musaddaq Enterprises project would play its contribution towards housing sector’s progress in the Pakistan that is currently much needed. Additionally, potential for employment during all stages of project would be retained. Thus, establishment of current project is highly needed. Therefore, —No Project Option does not remain a suitable alternative here.

The ‘No-Action’ option, if taken, will prevent the country from reconnoitering the potential to increase its housing demands. The current activity offers a chance to improve Pakistan’s housing balance and decrease the gap between the requirements by the application of project.

Other impacts of the ‘No-Action’ option would be loss of employment opportunities and infrastructural development in the project area, as the project is bound to create jobs and improve the existing infrastructure of the surrounding areas.

3.2 Design / Technology Alternatives, Their Selection & Rejection Criteria:

While considering process and technology alternatives, it has been kept into mind that the proposed project shall play its role towards energy and water conservation and least amounts of wastes to be discharged.

Using EURO II fuel in engines like generators and other machinery instead of diesel or bad quality fuel oil would create less opportunity of gaseous emission. No need for effluent treatment as generated effluent are collected in effluent tank and after neutralization through alkaline method, are thrown to the main sewer line.

3.3 Environmental Alternatives, Their Selection & Rejection Criteria:

As the project proponent has already a vast experience of working in the field of housing, therefore, no alternative project was considered to be established. Some issues discussed below hereunder:

3.3.1-Shifting of the project to some other location

The third option for the project is to shift the project to some other location if it might be feasible but here in this case Musaddaq Enterprises will operated in highly feasible area. Project will not be considered to shift to any other place due to following reasons.

3.3.1.1-Land ownership

Present land ownership is rest with the project Proponent i.e. Musaddaq Ali. Although tools like *resettlement action plan* and *compensation entitlement framework* can address the land acquisition related social issues, often resentment remains among the communities.

Therefore, it is desirable that the site for the project is either located on land owned by the project proponent or is owned by another corporate body or a government agency. Since land is owned by proponent himself there is no issue of land ownership.

3.3.1.2-Estimated population on the surrounding of the site

In terms of the social and environmental soundness the most preferable site should be the one that has the least number of persons residing in its surroundings. Potential issues related to noise, air pollution, and community safety become more difficult to mitigate if the project is located in relatively congested areas. For this purpose the settlements falling inside a 5km radius of the sites are being considered and the number of people residing within the said radius is estimated. The details of population residing and their life style are described in demography section of the report.

3.3.1.3-Access to the site

Main Faisalabad Bypass Road access to the project site is present as the project front.

The issues that are related to access road include community safety, dust emission, and noise due to project related traffic particularly during the transportation of raw material. As already discussed, two dumpers have hired for services for the movement of raw material; Therefore, accessibility to the project is easier.

3.3.1.4-Availability of water and other utilities

The water and other basic requirements such as telecommunication lines, electricity facilities for the project are available within the premises of the area. The environmental issue regarding the use of water by the project is that it can potentially affect the water availability in the area and make it difficult for the community to fulfill its water requirements.

3.4 Economic Alternatives, Their Selection & Rejection Criteria:

The project specific site geometry is given below as in Figure while photographs showing specific site location and environment in and around the project site are presented thereafter throughout this EIA report. The topographical map of the site showing levels and site layout is given as Figure.

(4)**DESCRIPTION OF THE PROJECT****4.1. Type and Category of the Project**

The proposed project is the construction of Asphalt Plant. The Project falls under schedule II of IEE / EIA Regulations, 2000 (Amended 2012).

4.2. Objectives of the Project

The main objectives of this project are:

- i. To fulfill the asphalt market demand for the constructing and maintaining roads, parking areas, railways tracks, runways for airports.

4.3. Consideration of Alternative Site**4.3.1 Site Alternatives**

Project proponent has considered number of sites for the construction of this project with consultation of Local Government Officials and business men. These site were also located near Faisalabad but they were rejected due to some conflicts and issues which were arising regarding the construction of the subject project.

Reasons for Rejecting Alternatives Site

The few basic reasons for rejecting the alternative sites are given below;

1. Available area of land was less than proposed project site.
2. The land was not in the possession of the proponent. Lot of conflicts can be generated by this factor.
3. Area is not suitable for development of any Asphalt Plant.

Reasons for Selecting Proposed Project Site.

The reasons for selection of proposed site are;

1. Availability of Access Roads both in front and back.
2. Communications Facilities.

3. Availability of Electricity.
4. Basic Infrastructure.
5. Less / Few Vegetation / Plantation.
6. Absence of Fauna species at site.
7. Convenient Plan Layout.
8. Land owned by Proponent.

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

Keeping these requirements and their feasibility and other basic infrastructural requirements at the site, the selected site is ideally suited for construction of a Asphalt Plant.

4.3.2 Process Alternatives

Two processes can be adopted by the developer:

1. Self-development by the owner of the houses which can result in unplanned development resulting in environmental degradation and loss of aesthetic beauty.
2. Planned development by the proponent which is scheduled and strategic development and results in virtuous, long-lasting and aesthetically beautiful design.

Plant will be constructed and developed by the developer / proponent, which will be properly planned development. All concerns regarding ventilation, good aesthetic beauty and implementation of local government rules and design will be implemented by the developer / proponent.

4.3.3 Schedule Alternatives

Best schedules have been devised by proper planning and consultation. Proper road structures will be available for traffic movement. Heavy movement related

to construction and raw materials will be switched at night, so that it doesn't affect the day time and routine traffic movement.

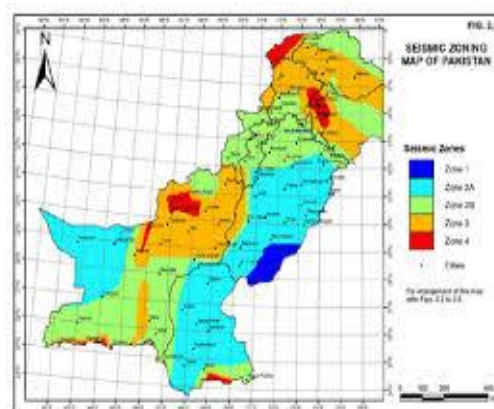
4.4. Location and Site Layout of the Project

Project site is located at Situated at Square No.35, Killa No.11, Chak No.114-Jb, Bypass, Faisalabad.

4.5 Land use on Site

Project site is falls in blue area as per master plan of the District Government. Proposed site is an open area with few and scattered vegetation. The area is safe and not situated in the flooding zone.

Map of flooding zone areas is given below:



4.6 Road Access

Faisalabad Bypass Road is access road which is present at the front side of the project site.

4.7 Vegetation Features of the Project

The proposed site has few and scattered amount of vegetation that will help to avoid land clearing, mainly shrubs and grasses are present over there is scattered quality. The land is almost clear and free of dense vegetation.

Some trees are present at the boundary side, which will be preserved and they will not be cleared for the purpose of construction.

4.8 Cost and Magnitude of the Project

Total area of the plant is **11-Kanal**. Total estimated cost of the project is approx. **50-Million**.

4.9 Schedule of Implementation

The initial planning which includes layout plan and board scale design of commercial area and car parking areas and green spaces has been done for Asphalt Plant.

Detailed feasibility studies and designing of the project have been completed. Necessary legal, administrative and financial formalities are being finalized. The project is expected to be completed within 6-8 months from the date of environmental approval. Subsequently the operational and maintenance aspects of the project will be undertaken by the proponent.

Sr. #	Activities	6 Months		
		4M	1M	1M
1	Construction			
2	Installation of Facilities			
3	Restoration of Site			
M = MONTHS				

4.10 Description of the Project

The subject proposed project is construction of “**Asphalt Plant**” situated at Square No.35, Killa No.11, Chak No.114-Jb, Bypass, Faisalabad. Total area of the plant is **11-Kanal**. Total estimated cost of the project is approx. **50-Million**. The project is for providing of fine quality asphalt.

Asphalt, also known as bitumen (UK: 'bɪtjəmɪn, US: bɪ'tju:mən, baɪ), is a sticky, black, highly viscous liquid or semi-solid form of petroleum. It may be found in natural deposits or may be a refined product, and is classed as a pitch. Before the 20th century, the term asphaltum was also used. The word is derived from the Ancient Greek ἄσφαλτος ásphaltos. The largest natural deposit of asphalt in the world,

estimated to contain 10 million tons, is the Pitch Lake located in La Brea in southwest Trinidad (Antilles island located on the northeastern coast of Venezuela), within the Siparia Regional Corporation.

The primary use (70%) of asphalt is in road construction, where it is used as the glue or binder mixed with aggregate particles to create asphalt concrete. Its other main uses are for bituminous waterproofing products, including production of roofing felt and for sealing flat roofs.

In material sciences and engineering, the terms "asphalt" and "bitumen" are often used interchangeably to mean both natural and manufactured forms of the substance, although there is regional variation as to which term is most common. Worldwide, geologists tend to favor the term "bitumen" for the naturally occurring material. For the manufactured material, which is a refined residue from the distillation process of selected crude oils, "bitumen" is the prevalent term in much of the world; however, in American English, "asphalt" is more commonly used. To help avoid confusion, the phrases "liquid asphalt", "asphalt binder", or "asphalt cement" are used in the U.S. Colloquially, various forms of asphalt are sometimes referred to as "tar", as in the name of the La Brea Tar Pits, although tar is a different material.

Naturally occurring asphalt is sometimes specified by the term "crude bitumen". Its viscosity is similar to that of cold molasses while the material obtained from the fractional distillation of crude oil boiling at 525 °C (977 °F) is sometimes referred to as "refined bitumen". The Canadian province of Alberta has most of the world's reserves of natural asphalt in the Athabasca oil sands, which cover 142,000 square kilometres (55,000 sq mi), an area larger than England.

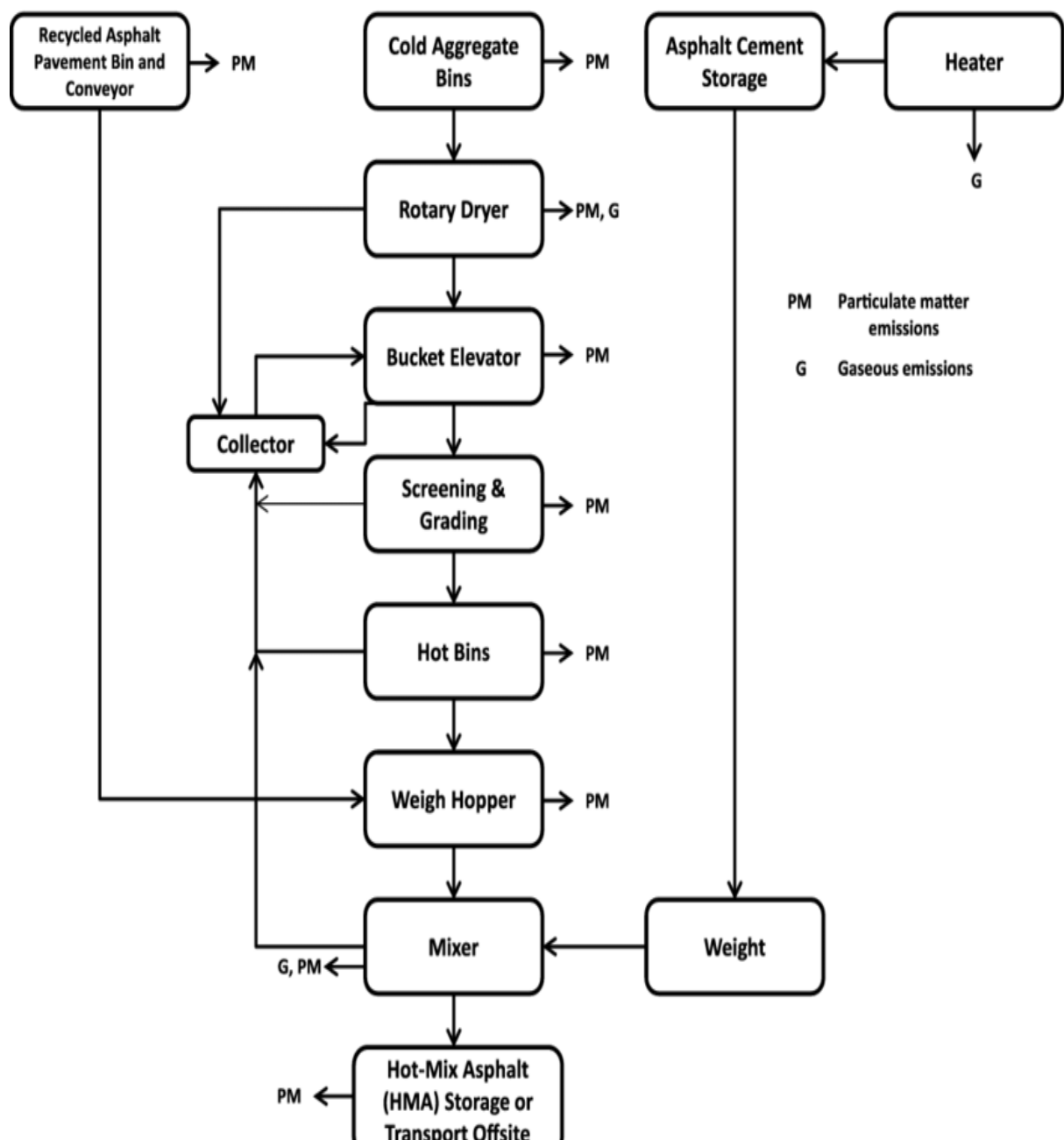
Asphalt properties change with temperature, which means that there is a specific range where viscosity permits adequate compaction by providing lubrication between particles during the compaction process. Low temperature prevents aggregate particles from moving, and the required density is not possible to achieve. Computer

simulations of simplified model systems are able to reproduce some of asphalt's characteristic properties.

4.10.1 Size of Project

Total area of the project is 11-Kanal.

4.10.2 Project Process



In order to have adequate control over the manufacture of hot mix asphalt, the manufacturing process needs to be broken down into a number of elements and then appropriate controls consistently applied for each of these elements. The basic elements in the manufacture of hot mix asphalt may be considered as:

- Supply of materials.
- Plant calibration.
- Feeding of materials.
- Mixing of materials.
- Delivery of asphalt to work site.

❖ Supply of Materials

▪ Aggregate

(a) Supply of Material

With the supply of aggregate to an asphalt plant the asphalt plant manager is in the position of a client. The asphalt plant manager should be relying heavily on the process control systems of the aggregate supplier to ensure aggregate is of consistent and adequate quality. In this regard the aggregate supplier should be encouraged to keep control charts for each aggregate size supplied.

In addition, the asphalt plant manager will need to carry out audit testing to be satisfied that the quality and consistency are adequate. The amount of audit testing required will depend on:

- The amount of aggregate being used.
- The variability of the aggregate being supplied.
- The confidence the asphalt plant manager has in the quality control being exercised by the aggregate supplier.

Care should be exercised in the management of aggregate stockpiles in terms of best practice.

(b) At the asphalt plant

Stockpiles should be:

- Constructed and operated in such a manner as to avoid segregation.
- Clearly labelled.
- Well drained.
- Established on a hard surface to prevent contamination.
- Adequately separated to prevent segregation.

Sampling and testing of aggregate at the asphalt plant should be on the basis of grading as this is a rapid and simple test to perform. Other properties such as soundness, abrasion resistance etc. should be performed from time to time but are generally consistent from a known source.

Where there is doubt about the consistency of aggregate properties, additional testing may be required.

Aggregate supply may be monitored by the use of control charts, by means of a separate control chart for each aggregate size.

▪ Binder

The quality and consistency of the supply of binder is also largely dependent on the Quality Management Systems of the binder supplier. However, audit sampling may still be required by the asphalt plant manager to check for contamination in transit.

When binder is delivered to the plant care must be taken to ensure that:-

- Binder tanks are clearly labelled and that labels are clearly visible for both the deliverer and the batch plant operator.
- Polymer modified binders are circulated before use and checked for consistency.
- Binder tanks have been adequately drained prior to filling with different grades of binders.

The batch plant operator should record which tank is being used to supply binder for each mix being produced or when the supply tank is changed.

❖ Plant Calibration

Ensuring that all components of an asphalt plant are kept in calibration will obviously make a significant impact on process by reducing potential sources of assignable causes.

Calibration should therefore be addressed as part of the asphalt producer's quality plan.

Suggestions are made throughout the guide of what is considered to be good practice regarding calibration.

❖ Feeding of Material

▪ General

The accurate feeding of materials into the mixing plant is one of the most critical operations carried out in an asphalt plant in terms of ensuring a consistent output from the plant.

The elements in feeding of materials into the asphalt plant are:

- Cold feeding of aggregates.
- Aggregate drying and screening.
- Filler system.

▪ Cold feeding of aggregates

Most modern asphalt plants have variable speed belts to feed aggregate. These need to be calibrated regularly to ensure accurate feed rates.

For drum plants, these need to be calibrated regularly or when material types are changed or when equipment is repaired or replaced.

The moisture content of cold aggregate usually only varies within a relatively small range (~ 7% to 12%) between summer and winter and measurements made every 2 months should be sufficient to maintain adequate control. Moisture content probes are now available but their accuracy is questionable.

- Aggregate Drying, Screening & Consistency

The efficiency of aggregate drying and screening are important elements in the production of quality hot mix asphalt. Most plants measure the temperature of the material coming out of the dryer which feeds back to the burner control. This usually provides automatic control over the drying process. As a means of controlling the heating process of both the aggregates and binder, the variability of the temperature of the final mix may be measured and evaluated using a control chart. The control of the hot bin screens is difficult to monitor as it is hard to know if they are blocked or have developed a hole. The asphalt plant operator can observe how quickly the bins fill or samples of the screened materials may be taken for a visual check or grading test.

Bin sensors should be installed and operating correctly. Sonar sensors are considered to be the most reliable but contact high and low sensors are also available. If the flow into the bins is blocked for more than 30 seconds, the plant should be shut down until the cause is identified and remedied. Aggregate batch weights may be recorded and monitored using control charts. Most modern plants are computer controlled and have systems for measuring and recording batch weights.

- Filler System

The amount of filler added to hotmix, although only a small quantity, is very important in terms of the performance of the final asphalt mix. The consistent and

accurate metering of filler quantities is, therefore important to achieve adequate process control. Filler comes from two sources, that collected from the baghouse and imported filler. There is a need to have adequate weighing and recording systems for both these sources to ensure the requirements of the mix design are met. Due to the line nature of filler materials, it is not uncommon for arching to occur in the weigh-bin and devices should be fitted to ensure this does not happen. Filler batch weights may be controlled using a control chart. This can often pick up problems in the screening process.

- Binder System

Drum plants display feed rates usually in t/hr and provide control to measure progressive tonnage. These controls are usually of sufficient accuracy and repeatability that they may not require monitoring by control charts.

- ❖ Mixing of Material

- Pugmill

Mixing time of the ingredients in the pugmill is determined by the requirements of the mix design. Mixing time is determined to ensure thorough mixing of all ingredients and coating of the aggregate particles with binder. Mixing times should be set at the minimum time required to ensure complete mixing and should not be unnecessarily extended. Any mix left in the pugmill for more than 60 seconds should be discarded. Most modern plants have automatic mix timers and any change in the mixing time for a particular mix should require the batch plant operator to receive appropriate authorization.

- Hot Storage Bins

The correct operation of hot storage bins is critical to prevent segregation of the mix when loaded into trucks for transportation. When operating hot storage bins the cone at the base of the bin should be kept full at all times. The temperature of the final mix,

either in the hot bins or as it is discharged into trucks should be measured and the variability monitored by control charts.

❖ Number of Control Charts

▪ Intro

These can be summarized as:

- Aggregate grading
- Aggregate and filler batch weights
- Temperature of mixed asphalt
- Binder weight.

The control charts for these parameters which can be generated from simple measurements and tests, allow for upstream control of the manufacturing process and provide the maximum amount of time in which to correct the process if it gets out of control. However, this is not meant to preclude the use of control charts for the usual end product testing that is also carried out to ensure conformance with the specification. The mechanics of developing control charts is identical in both cases. Scherocman and Decker (1995) have developed a ranking system that ranks the factors that contribute to the differences that occur in the properties of hot mix asphalt for mix designed in the laboratory and the properties of the "same" mix produced in an asphalt batch or drum mix plant. A graphical summar5r of their findings is presented in Figure. This may be of assistance in helping decide which parts of the asphalt manufacturing process should be monitored by control charts. The number of control charts needs to be determined for each plant. Each parameter measured needs to be controlled by a pair of control charts, one plotting averages and one plotting ranges.

In deciding the number of control charts to be developed, cognisance has to be given to the amount of work involved in setting up and maintaining the charts. A rational approach would suggest that effort should be directed to controlling the high volume mixes produced by each plant. If this is achieved, there will obviously be a flow-on

effect to all mixes produced, even if they are not directly involved in the control chart process. In selecting the mix or mixes to be controlled, care should be taken that the mixes use all the ingredients commonly used in the plant, so that the likelihood of the above flow-on effect is maximized.

- Aggregate Gradings

As aggregates are generic to all mixes separate control charts for each mix design are not required. It will be adequate to have a pair of control charts for each aggregate size from each supplier that are to be monitored. For example if there are 2 suppliers of 10 mm aggregate separate pairs of charts would be desirable for each supplier.

- Aggregate and Filler Batch Weights

As aggregate and filler batch weights vary according to the mix design, pairs of control charts for each aggregate size and filler may need to be kept for each high volume mix produced from the plant.

- Temperature of Mixed Asphalt

As the temperature of the mixed asphalt is also dependent on mix design and particularly binder type, a pair of control charts for each mix design needs to be kept.

- Binder Weight

Variations in binder batch weight can be monitored by control charts which display the difference between target and actual binder weights for each batch. In this way a continuous monitoring of the plant can be made, even if binder contents/weights vary when production mixes change.

4.10.3 Pictorial view of the project



4.10.4 Water Requirement

During the construction phase, 3363 gallons per day of water will be used.

4.10.5 Sanitary Sewerage System

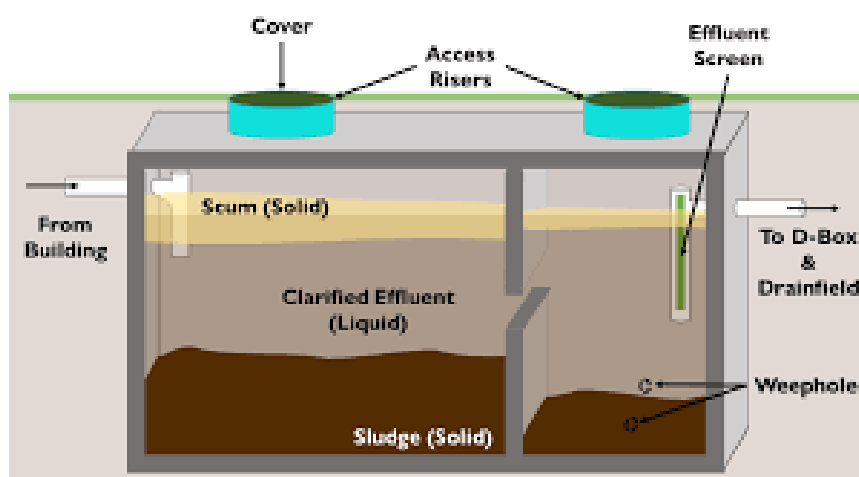
Septic Tank will be constructed at project. So the waste water will firstly be treated in the Septic Tank, it will be drain out in the nearest wade.

After treatment waste water will be discharge into that drain.

4.10.6 Design of Septic Tank

Septic Tank will be installed within the boundary wall of the project site.

Design is given below:



4.10.8 Solid Waste Management

During the construction phase, solid waste will be generated from construction activity, which will be used for refilling / landfill purposes hence, landscaping of the project will be done. During the operation phase, waste material will consist of the domestic type from the project and will be retained within the project premises. A separate place into the project is provided for collection. About 50-kg/day of domestic solid waste will be generated from the project during operation phase.



4.10.9 Electrical Works

The design criterion for the electrical works will be in compliance with the requirements of WAPDA. Street lights will be provided and their maintenance will also be carried out by the management of the Asphalt Plant.

4.10.10 Other Facilities

There will be Masjid, Retiring Area, Open Area, Green Space, building and Parking at the Asphalt Plant.

4.10.11 Plantation

Plantation will be done within and outside of the proposed project. A proper plantation plan has been designated for the proposed plant.

4.11 Restoration / Rehabilitation Plan

All possible precautions will be taken to prevent an untoward incident in terms of life and property losses. The demolition materials will possibly be reused and recycled. All excavated surfaces will be termite proofed.

On completion of the project, all measures will be taken for ensuring occupational safety, security and clean environment in the project area. Ornamental trees and flower plants will be planted on inside peripheral of the unit premises to restore the land.

4.12 Government Approvals required by the Project

Relevant Government Approvals / NOCs from Municipality, District Government etc. will be obtained in due course of time. Firstly Environmental Approval is must for instant project as well as all type of projects. It has to be determined either the site is suitable for the project or not. In case of site un-suitable for any of the project, the application filed in EPA will be rejected and shall advise the proponent to select / find another site for his business; And in case of site suitable for any of project, issue Environmental Approval and in the light of Environmental Approval, all other departments will issue their respective permission / NOCs etc.

(5)**DESCRIPTION OF ENVIRONMENT**

It 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.

5.1 Physical Environment / Resources

Environmental Impact Assessment report provides details of physical environment.

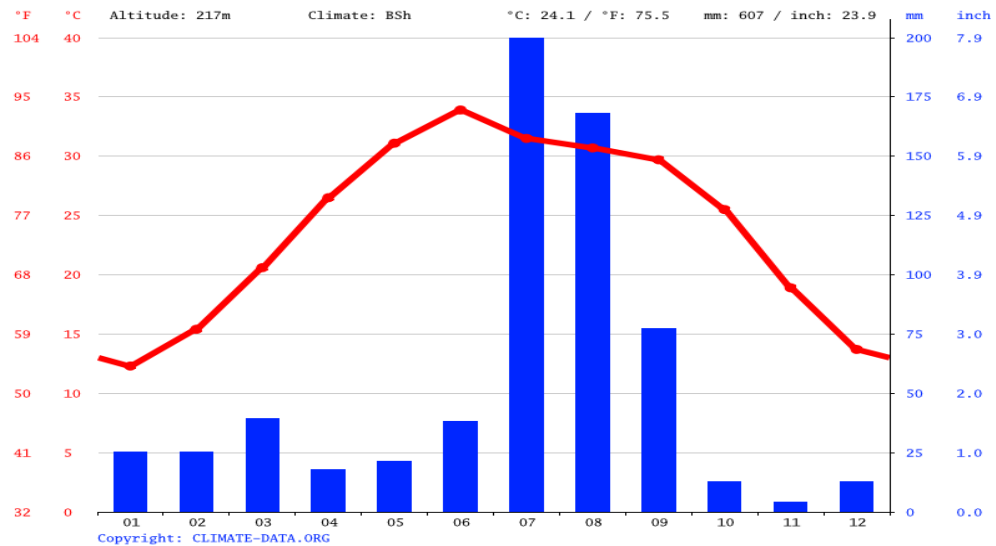
5.1.1 Topography

Topographically the project site being in the command of river Indus, exhibits the features typical of alluvial lands of the riverine origin. The wider area is a part of the flat flood plains of Indus basin with a general gradient from north to south and from west to east. The Cholistan desert merges into the eastern side of the district and is a few kilometres from the project site. According to the topographic measurement survey, the elevation of the project site is 112m. Owing to deficiency of surface water channels, the area presents a rather deserted and crusty look. Except the above-mentioned aspects, the project area does not exhibit any special physical, geological and geomorphologic features.

5.1.2 Climate

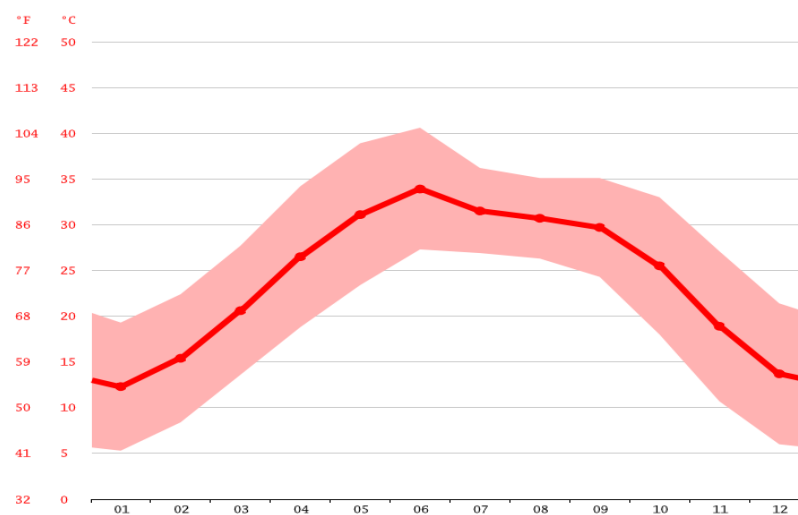
The site, being part of District Faisalabad, exhibits a hot and dry climate with low rainfall like rest of the district. According to meteorological profile of Faisalabad, summers are generally hot with moderate humidity, whilst winters exhibit extreme cold. Spring and autumn seasons are the most pleasant parts of the year. The mean winter temperature (December/January) ranges between 10.5°C to 14.5°C. The mean summer temperature remains around 35°C to 37°C with spikes

crossing 40°C. The mean of the maximum temperature ranges between 29-30°C and mean of the minimum from 15-16°C. Approximately 50 percent of the average annual rainfall occurs during monsoon in the months of July and August.



5.1.3 Temperature

Over the course of a year, the temperature typically varies from 5°C to 30°C and is rarely below 2°C or above 42°C. At an average temperature of 30.4°C, June is the hottest month of the year. The lowest average temperatures in the year occur in January, when it is around 12.5°C.



5.1.4 Precipitation

Precipitation is the lowest in November, with an average of 2.4 mm. The greatest amount of precipitation occurs in July, with an average of 110 to 185 mm.

Between the driest and wettest months, the difference in precipitation is 125 mm. The variation in temperatures throughout the year is 22°C.



5.1.5 Air Quality

Atmospheric pollution, particularly in industrial areas has a strong impact on daily life. However, the project site is located amidst the open agricultural lands in rural settings. Because of this disposition, the air quality profile is reasonably good with a low level of airborne dust and pollutants. However, fugitive dust levels are a bit higher on and near the highly trafficked roads than the surrounding open lands. There is no contribution of pollutants to the local air from stack emissions from the local industry, brick kilns and other stationary sources, as none exists in the zone of environmental influence of the project site. At the time of visit inspection of the site, the general atmosphere at the project site was clear from particulate dust and was of good visibility. Monitoring was conducted at the project site by using Fine Dust Sampler IPM-FDS 2.5/10 μ and Ambient Air Analyzer.

To record the baseline ambient air quality of the project area, monitoring was conducted at advised locations to assess the concentration of priority pollutants (Carbon monoxide, Nitrogen dioxide, Sulphur dioxide and PM₁₀) in the air.

5.1.6 Noise Level Monitoring

Details as described below

5.1.7 Basic Environmental Conditions

During the measurement following conditions were prevailed in workplace.

5.1.8 Metrological Conditions

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

5.1.9 Monitoring 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

5.1.10 Methodology Adopted

Noise level was monitored at four points; lab results are attached.

5.1.11 Ground Water

The Groundwater at the facility sites, like the wider area of the district, is in flux with the recharge occurring from infiltration of the river and the canal waters as well as from the surface precipitation. River Indus

flows along the western side of the district and a major source of groundwater recharge in the area, particularly after heavy rainfalls and floods. Owing to the natural east to west topographical gradient, the groundwater of the region and that of the facility site per se exhibits the flow characteristics conformant to area's topography. As per water quality inspection, groundwater is of good potable and irrigable quality with no visible impurities.

5.2 Ecological Resources

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

5.2.1 Flora

Apart from some scanty trees at the project site, there are no large-scale plantations in and around the project site. The predominant species of the flora at the project site include shisham (*dalbergia sissoo*), eucalyptus, silver oak, kikar (*acacia nilotica*), jand (*prosopis spicigera*), karir (*capparis aphylla*), beri (*zizyphus jayaba*), van (*salvadora abeoides*) and akk (*calotropis hamiltonii*). Additionally, some wild varieties of self-grown grass species are found along some poorly maintained watercourses. There are no horticulture, and or wildlife parks and planned gardens near or around the project site. Some common forms of weed, bush and the self-grown endemic species of plants are found in the open agricultural lands.

5.2.2 Fauna

There is no specific fauna indigenous either to the project site or even to the wider area within the radius of influence of the project site. Similarly, there are no species of aviary, aqua, or wildlife indigenous,

resident or migratory to the project site. As such, the biodiversity features of the site are insignificant. Some common forms of reptiles, mammals, and rodents are seen occasionally in the open countryside. Rarely, wild boar, jackals and fox are seen in thick plantations or sugarcane crops.

5.3 Socioeconomics Environment

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

5.3.1 Population

According to the govt. statistics and the local / provincial govt. the estimated population of District Faisalabad is approximately 4.814-Million persons.

5.3.2 Profession

Main profession of the area is Business / Trading. However, a few number of people are doing job in different institutes of govt. / private sector.

5.3.3 Education Level

Literacy rate in the area is approximately ranging from 33.1% (source: Bureau of Statistics).

5.3.4 Language

The popular language of the area is “Punjabi / Saraiki”

5.3.5 Cultural Diversity

The project site being a part of the rural countryside is devoid of any indigenous and endemic culture, customs, tradition, religious practices

and the specialties. The people of Rahimyar are predominantly Muslims. Saraiki is the native language and is spoken widely in the district. However, Urdu is gaining popularity and is becoming the lingua franca, particularly amongst the youngsters and the educated youth. People generally respect “chadar” (women headgear symbolic of women respect) and chardewari (privacy), i.e. they do not mingle up with women publically and stay away from others houses and respectfully wait to be called in or the residents to come out from their houses. A reasonable proportion of womenfolk observe the purdah (veil) etiquette, i.e. they remain secluded from outsiders. However, womenfolk do participate in almost all sort of social, cultural, economic, educational, and service activities. Although Joint family system is the predominant mode of social life, yet “nucleus” or small family system is also found because of socio economic compulsions and attitudinal shifts in the youth.

5.4 Quality of Life Values

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

5.4.1 Heath and Education

Basic health & education facilities are available in the District. There are 2441 Govt. Schools and a number of private schools and some Govt Hospitals (DHQ, THQ etc) are present. People have to visit the District Faisalabad for the proper health and educational facilities.

5.4.2 Compensation in Money Terms

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

5.5 Archaeological and Historical Treasures

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

5.6 Lab reports of environmental analysis

Lab reports of ambient air, drinking water and noise level monitoring of project area are annexed.

(6)**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 of project have been assessed and mitigation measures are provided accordingly.

6.1 Assessment Criteria for Potential Impacts

The impacts were assessed in the light of criteria given as under:-

- Magnitude or degree of impact
- Time and duration of impact
- Likelihood of impact occurrence
- Sensitivity of impact
- Risk related to impact

6.2 Environmental Impact due to Project Location

The subject proposed project is construction of the Asphalt Plant by “Musaddaq Enterprises.” situated at Square No.35, Killa No.11, Chak No.114-Jb, Bypass, Faisalabad.

6.2.1 Impacts

Area is suitable for the development of subject plant. So, if the proponent / Developer fulfills all the HSE conditions and industrial development laws and rules than this plant will not cause any adverse environment impacts on the society. Development of this plant will increase the employments for the local people of the District. Overall the impacts of this development due to the location are positive on the local community of District Faisalabad and country.

Impact significance: Very Low or may be positive

Nature of impact: Direct

Duration: Long-Term

Timing: Operation Phase

Reversibility: NA

Likelihood: Low (unlikely),

Consequences: Very low or may be positive

6.2.2 Mitigation Measures and Recommendations:

- Proponent/Developer should firstly build the boundary wall all around the project site.
- Proponent/developers should enhance the road infrastructure within the plant and main link road.
- Proponent/Developers should place all the safety and location signs and maps at the specific indemnified place.
- Proper parking arrangements should be maintained during the construction and operational phase of the development.
- Location can be considered as positive impact on the community due to the facilities provided to the community.

6.3 Environmental Impact due to Project Design

Total area of the plant is 11-Kanal, which will comprise as plant, parking and internal roads and Masjid. Health & safety plan, Tree Plantation Plan, and emergency response plan will be incorporated during the design phase of the project. The main buildings are;

- Plant
- Parking
- Open Area
- Green Space
- Main office

Following are the major Environmental impacts due to the development related to the design:

6.3.1 Impacts

- Structural stability of the proposed project
- Soil structure and soil bearing capacity

- Road infrastructure design
- Emergency exit in the project for the emergency situations
- Wastewater disposal system design
- Rain water harvesting capacity of the drainage system
- Electricity hazardous

Impact significance: Moderate to High or may be negative

Nature of impact: direct

Duration: Long-term

Timing: Constructional phase & Operation phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

6.3.2 Mitigation Measures and Recommendations:

Following are the mitigation measures and recommendations to minimize the anticipated impacts due to the project design:

- Road infrastructure should be properly designed and there should be strict application of the laws and regulations, so that traffic congestion problems may not arise.
- Emergency exit points should be designed during the designing phase and should be kept in proper working condition to use in case of any emergency.
- Wastewater disposal system should be designed and managed properly and wastewater treatment facility should be installed within the design of the project.
- Waste water drainage should be designed vast to bear the rain water capacity.
- Electricity system should be designed safe and sound; electricity wires should be covered by thick plastic/electricity resistant covers.
- All the design should be approved from the local authority to minimize the impacts due to the design of the project.

6.4 Environmental Impact due to Construction Phase

Project site is surrounded by open land and road. So the construction of the proposed project will not have harmful impacts on the surrounding areas.

6.4.1 Impacts on Physical Environment

Impacts related to the construction phase of the subject project are discussed below:

- **Grubbing and Stripping**

Grubbing and stripping may be a minor and short-term impact on the physical environment during the construction phase. It may also be a health and safety hazard for the workers.

- **Leveling and Compaction of the Land**

Leveling and compaction of the land is also a short term and minor impact on the physical environment and it may also be a health and safety hazard for the workers.

- **Demarcation of project Building and Other Facilities**

It may also be a minor impact on the physical environment due to the subject project.

- **Generation of Dust During Loading and Unloading of construction Materials**

It is also a minor and short term impact on the physical environment and also for health and safety, which may arise during the construction phase.

- **Generation of Noise on Account of Vehicular Use and Construction Activities**

It is also a minor and short term impact on the physical environment and also for health and safety, which may arise during the construction phase.

- **Gaseous Emission due to the Vehicles and Stand by Generator (if any)**

It may also be a minor impact on the physical environment during the construction phase, if vehicles and generators are not properly tuned.

- **Local Flooding due to Over-use of Water and Leakage of Pipes**

It may be a minor and short-term impact on the physical environment if precautionary measures have not been taken.

- **Safety to Construction Workers, People in the Surrounding and Passersby**

Health and safety issues may arise during the construction phase if proper precautionary measures will not be taken.

- **Any Outbreak of Fire due to Electrical and Other Failures**

This issue may arise due to carelessness or improper management, and it may be a serious hazard which may affect the environment or may also cause the loss of property or life.

- **Solid Waste Generation due to Domestic and Construction activities**

Solid waste generation due to domestic and construction activities may be a negative impact on environment if not managed properly.

- **Wastewater Generation from the Domestic and Constructional Activities**

Wastewater generation due to domestic and construction activities may be a negative impact on environment if proper wastewater treatment and management system will not be implemented.

- **Ground Water Quality**

Ground water quality may be affected by the development if proper mitigation measures will not be implemented.

6.4.2 Impacts on Biological Environment

Impacts on Fauna and Flora

Construction will impact flora / vegetation cover and fauna present at the project site.

6.4.3 Impacts on Socio-Economics Environment

- **Security Threat**

Security threat is a major socioeconomics impact which may arise during the construction phase.

- **Impact on Land Value**

Construction of the subject project may cause positive or negative impact on the land value.

- **Loss of Public and Private Infrastructure**

Construction of the subject project may cause loss of public and private infrastructure if any, which is also a negative impacts on the socioeconomic environment.

Impact significance: Moderate to High or may be negative

Nature of impact: direct

Duration: Short-term

Timing: Construction phase

Reversibility: NA

Likelihood: moderate

Consequences: moderate

6.4.4 Mitigation Measures & Recommendations

- Precautionary measures should be adopted to save the environment from the impacts of grubbing, stripping, levelling and compaction and Health & Safety of workers should be ensured during these construction phases.
- Demarcation of project building and other facilities should be according to the laws and regulations.
- Sprinkling of water on dusty tracks is recommended to avoid the generation of dust on dusty tracks.
- Vehicles should be properly tuned to reduce the impacts of dust and noise.
- Mitigation measures should be taken to meet the PEQs at the stack of generators.
- Proper mitigation measures should be taken to reduce the noise generation during the construction activities.
- PPEs i.e. ear muffs, helmets and masks etc. should be provided to workers to ensure their health and safety during the construction activities.
- Precautionary measures should be taken to reduce the local flooding due to over-use or leakage of pipes.

- Health & Safety of construction workers, people in the surroundings and nearby must be ensured.
- Constructional waste should be used for landfilling purpose.
- Domestic solid waste should be used for landfilling purpose.
- Domestic solid waste should be kept in dust bins and should be handed over to local contractors.
- Wastewater treatment facility should be incorporated in the design of the project to treat the waste water produced due to constructional and domestic activities before the final disposal.
- Add more vegetation to restore the land by more plantations.
- Essential services like water supply, sewerage disposal and solid waste management must be in working conditions.
- Construction timings should be schedule to cause minimum disturbance to neighbors.
- Because of presence of security guards round the clock the security at the projects site will improve as well as in its vicinity. Impact will be moderate positive.
- Land value in the surrounding area will be increased due to completion of the present project. Impact will be moderate positive.
- The project does not involve dislocation of the people. There is no requirement of resettling a single person. Impact is nil.
- No moveable or immovable property and infrastructure of public and private sectors will be lost or damage during construction and operation stages. Impact will be nil.

6.5 Environmental Impact due to Operational Phase

There will not be any significant environmental problems relating to gaseous emissions, particulate matter or noise during operation of the plant. Environmental issues associated with operation of the proposed project could include soil contamination caused by inappropriate waste disposal, surface and ground water contamination, water consumption, safety hazards, public health and nuisances, damage to infrastructure, and increase in noise and vehicular activity. However, the magnitude of these impacts shall be much less than those related to impacts during the construction. These impacts and the mitigation measures are discussed briefly.

6.5.1 Impacts on Physical Environment

Impacts related to the operation phase of the subject project are discussed below:

- **Groundwater quality and level**

The proposed project would not affect the quality and level of groundwater. Projected impact is nil.

- **Land utility**

It will increase significantly since the project has been planned to be constructed on the existing unused area.

- **Solid waste generation due to domestic activities**

Solid waste generation due to domestic activities is a long term and major of the subject project.

- **Waste water due to domestic activities**

Production of waste water due to domestic activities is a long term and major impact of the subject project.

- **Vehicular emissions**

It is also a major impact on the environment caused by the subject project.

6.5.2 Impacts on Biological Environment

- **Flora**

The project site is devoid of any significant vegetative cover. Only few plants are present. Nil impact is envisaged.

- **Fauna**

The fauna including wildlife species do not exist at the project site. The impact will be nil.

6.5.3 Impacts on Socio-Economic Environment

- **Security**

Because of presence of security guards round the clock the security at the project site will improve as well as in its vicinity. Impact will be moderate positive.

- **Land Value**

Land value in the surrounding area will increase due to completion of the present project. Impact will be moderate positive.

6.5.4 Resettlement Issues

- **Dislocation of Population**

The project does not involve dislocation of the people. There is no requirement of resettling a single person. Impact is nil.

- **Loss of Property / Infrastructure**

No moveable or immovable property and infrastructure of public and private sectors will be lost or damaged during construction and operation stages. Impact will be nil.

Impact significance: Moderate to High or may be negative

Nature of impact: direct

Duration: Short-term

Timing: Operational phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

6.5.5 Mitigation Measures & Recommendations

- Solid waste bins should be regularly cleaned and solid waste must be handed over to the local contractors.
- There should be different bins for different types of solid wastes for proper segregation of solid waste.
- Wastewater treatment facility should be constructed on the reserved place to treat the domestic waste water.
- Proper plan for waste water collection should be devised.

- Proper mitigation measures should be devised to cope with the emissions generating from kitchen area.
- Properly tuned vehicles should be used and non-tuned vehicles should be banned.
- Traffic management system should be ensured.

6.6 Potential Environmental Enhancement Measures

The proposed project will be installed with all precautionary measures to enhance and safe the environment. Following necessary measures will be adopted during construction and operation.

- Sprinkling of water will be done on dusty road and tracks.
- PPEs will be provided during construction and operational activities.
- Constructional waste and domestic solid waste will be disposed-off or utilized properly.
- Local people will be informed in advance when work is about to start in an area.
- Machinery will never be left unattended.
- Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Transporters engaged for the project would be forced to adhere to the load specifications of the access road. No overloading would be allowed in any case.
- Safety signs and boards will be placed during construction.
- Waste water will be treated through waste treatment plant that will be installed within the industry.
- Proper SOPs will be followed with proper schedule along with the HSE conditions.
- Area will be restored with native plants. A proper tree plantation plan will be formulated to save the environment.
- Solid waste will be handed over to contractors and agreement will be made.
- Noise will be controlled by adopting proper measures.
- Safety signs will be placed at all locations where required.
- Hygienic conditions will be ensured and proper quality will be maintained by quality control testing.
- First aid facilities will be made available.

- Any possible measure will be adopted to make the project safe and environmental friendly.

6.7 Purpose of Mitigation Measures

Purpose of mitigation measures should include:

- What is the problem i.e. in terms of “Major Environmental Impacts” which may arise by the subject project activity?
- When the problem will occur and when it should be addressed?
- Where the problem should be addressed?
- And how the problem should be addressed?

The major impacts may arise by the subject project are solid waste generation due to domestic activities, waste water due to domestic activities, fire due to short circuits and other activities, health hazards. Other impacts are of minor importance. These impacts will arise during construction and operation but precautionary measures will be adopted prior to start the activity, during the activity and post activity.

Any impact that would arise due to the subject project activity will be addressed on site. Trainings will be conducted on site prior to start work while other precautionary measures will also be adopted to make the project safe and environmental friendly.

HSE manager / environmental manager along with site manager will be appointed to access any impact that could be arisen during the both phases. He would responsible to address the problem and to mitigate it.

6.8 Ways of Achieving Mitigation Measures

By adopting proper mitigation measures, any anticipated major or minor environmental impacts could be controlled or mitigated. The details of impacts and mitigation measures have been discussed in previous chapters.

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

Musaddaq Enterprises. (Asphalt Plant) will adopt such plan that will assure the minimum impact on the environment and health by implementing proper mitigation measures. Design of the project will assure the structure stability and project life in a long run.

Musaddaq Enterprises. (Asphalt Plant) Restoration / Reclamation or tree plantation plan to restore the project area. Maximum plantation will be done with native species within the unit, along the boundary wall and along the road side if directed by EPA. Also, in-front of main area, horticulture plan will be formulated and area for this will be kept reserved.



ENVIRONMENTAL MANAGEMENT PLAN & MONITORING PROGRAM

7.1 Purpose & Objective of EMP

The primary objectives of the EMP are to:

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

7.2 Management Approach

The overall responsibility for compliance with the environmental management plan rests with the project proponent.

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

7.3 Institutional Capacity

Following functionaries will be involved in the implementation of EMP:

- Project Proponent
- HSE/Project Manager
- In-Charge Administration
- Supervisor of project

7.4 Training Schedule

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

7.4.1. Training of Building Contractor

Training of building contractor & workers will be the part of the TORs regarding the construction of the plant. TORs will be including the training and submission of reports in the following area:

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

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

7.4.2. Environmental Technical Assistance & Training Plan

In order to raise the level of professional and managerial staff, there is a need to upgrade their knowledge in the related areas. HSE/Project Manager should play a key role in this respect and arrange the training programs.

HSE/Project Manager will provide training to staff and workers about the best environmental management practices at the construction site and affective implementation of the EMP.

The training modules will include air, noise and water pollution monitoring, social awareness, Environmental Laws, Punjab Environmental Quality

Standards (PEQS), Usage of personal protection equipment's and health and safety related issues on the construction site.

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

7.5. Responsibility of EMP

Overall responsibility for implementation of EMP will be that of project proponent. He will appoint a HSE/Project Manager of relevant qualification. HSE/Project Manager will act as Environmental Manager and will manage the all HSE condition at the PEQS.

7.6. Summary of Impacts & Their Mitigation Measures

Summary of Environmental Impacts and Mitigation measures is present in following table:

Sr.#	ENVIRONMENTAL ISSUES/IMPACTS	MITIGATION MEASURES
PLANING, SITE SELECTION AND DESIGN STAGE		
1	Acquisition of land	Project site is the property of the proponent and there is no land ownership issue.
2	Loss of environmentally sensitive areas	Avoid utilization such patches of land.
3	Changes in traffic pattern	Prepare suitable in / out traffic plan.
4	Potential conflicts with stakeholders	Settle the issues through scoping and specific group discussions.
5	Resettlement issues	No resettlement issues.
SITE DEVELOPMENT STAGE		

1	Erosion due to stripping and site clearance	Sprinkling of water on road side
2	Generation of Dust	Careful loading and unloading of construction material is recommended. Sprinkling of water on construction site and surrounding areas is recommended.
3	Generation of Noise	Avoid using forbidden horns at the site. Do not throw heavy equipment and construction materials in haphazard manner.
4	Local flooding / ponding	Immediate repair and maintenance of water supply pipes and sewers in case of any defect will be undertaken.
5	Safety	Safety of the workers and others must be ensured. Privacy of the neighbors must not be disturbed.
6	Labor issues	Employ the local labor as far as possible.
CONSTRUCTION STAGE		
1	Minor erosion of land	Add more vegetation; restore the land by more plantations. Sprinkling of water on dusty tracks is recommended. Clearing of land should be step wise; vegetation should be removed only from the area where main building will be developed.
2	Contamination of land and water	Essential services like water supply, sewerage disposal and solid waste management must be in working condition.
3	Air Pollution (PM)	Sprinkling of water on dusty tracks is recommended. Do not throw heavy equipment and construction materials in haphazard manner.

		Prohibit idling of vehicles Workers on the site should be issued with dust masks during dry and windy conditions
4	Noise pollution	Construction should be carried out only during daytime Workers to wear ear muffs if working in noisy section
5	Traffic density	Proper signage put in place to notify neighbors of the activity and presence of heavy vehicles and to direct traffic. Presence of boards directing patrons to the site strict adherence to traffic rules. Provide adequate parking and driveways control and management of traffic through enforcement of speed limits. Provide bill boards at the site / entrance to notify motorists about the development.
6	Ecological consideration (flora & fauna)	The flora and fauna should be restored after construction by landscaping and maintenance the introduced plants.
7	Solid Waste	Excavation waste should be re-used or back filled. Waste generated should be collected by a privately constructed waste collection company. The site should have waste receptacles with bulk storage facilities at convenient point to prevent littering. Unusable construction waste, such as damaged pipes, formwork and other construction material is handed over to the local contractor.

		For wastewater treatment facility 05 Marla is reserve in Asphalt Plant.
8	First Aid	A well-stocked first aid kit shall be maintained by qualified personnel
9	Occupational Health and Safety	Train workers on personal safety and how to handle equipment and machines Report any accidents / incidences and treat and compensate affected sanitary workers To reduce health and safety risks, effective emergency response plans will be observed during construction. Proper personal protective equipment i.e. safety shoes, helmet, goggles, respiratory equipment and gloves shall be used at all times on site. Provide first aid kits and contact points in case of injury and accidents. Form a safety and health committee to coordinate safety and health issues at workplace. Provide regular safety awareness talks and trainings.
10	Material Transportation	All fine earth materials must be enclosed during transportation to the site to prevent spillage and dusting. Trucks used for that purpose should be close properly and with tarpaulins to cover the materials. The transportation of lubricants and fuel to the construction site should only be done in the appropriate vehicles and containers, ie. Fuel tankers and sealed drums. As far as possible, transport of construction materials should be scheduled for off-peak traffic

		hours. This will reduce the risk of traffic congestion and of road accidents on the access roads to the site.
OPERATION STAGE		
1	Safety / Security concerns	Safety of the workers and others must be ensured. Privacy of the neighbors must not be disturbed.
2	Malfunction of Utilities	It is proposed to appoint maintenance engineer technicians like plumber and electrician for smooth operation of utility services.
3	Occupational Health, Safety and Environment	Regular medical check-ups are recommended to improve the working conditions and efficiency of workers. Safety of management, workers and visitors must be ensured. Observance of construction and safety codes must be ensured.
4	Noise Pollution	Workers to wear muffs if working in noisy section. Management to ensure that noise from the residents kept within reasonable levels. There should not be unnecessary honking of the involved machinery.
5	Solid Waste Management	Area for solid waste must be reserved within the subject project. The solid waste must be managed on regular basis. The domestic waste will be disposed-off in environment friendly way. Project related waste should be handed over to contractor for sale disposal / recycling.

		Waste bins should be placed at suitable places. Domestic waste should be handed over to contractors on regular basis. Proper segregation in collection of waste.
6	Ecological considerations (flora & fauna)	The flora and fauna should be restored after construction by landscaping and maintaining the introduced plants.
7	Water consumption	Avoid unnecessary toilet flushing. Promptly detect leaking taps and repair them. Turn off taps when not in use. Install water conserving taps that turn off immediately when water is not in use. Install a discharge water meter in the premises to check on total water use and for billing purpose. Install water meter for control of water use.
8	Sewage treatment and disposal	In every home there is a septic tank for the treatment of water. After treatment the treated water from septic tank of individual home will be collected in wastewater treatment facility for the further treatment from where it is discharge in sewerage system. The detail and specification of the project is given. Design of sewage system should be sound in terms of adequacy, gradient materials and standards and should connect to the proposed wastewater treatment system and should be monitored regularly to avoid leakages and spills. Regular emptying of the septic tank.

7.7. Equipment Maintenance Detail

The proponent of the subject project will maintain records for Health Safety & Environment and will hire Environment / HSE manager to check and deal with the HSE issues. The subject project will maintain medical facilities, waste water treatment facility, solid waste management facility and records for their periodic replacement and will ensure proper housekeeping and essentials facilities.

7.8. **Environmental Budget**

The cost required to effectively implement the mitigation measures is important for the sustainability of the Project both in the construction and operation stages of the Project.

Project proponent will allocate the Environmental Budget for the Training, maintenance and management of Environment is **210-Thousand** annually that will include filling and maintenance of equipment's restoration, plantation, and strategic planning to cope with any emergency situation and formulate the disaster management plan to cope with natural disaster. Any equipment or devices failure or replacement will not be included in this budget.

ENVIRONMENTAL BUDGET	
Ambient Air Monitoring	25,000
Noise Monitoring	25,000
Water Quality Monitoring	25,000
Health & Safety	50,000
Tree Plantation / Green Belts	25,000
Solid Waste Management	25,000
Wastewater Treatment	35,000
Total	210,000

7.9. ENVIRONMENTAL MANAGEMENT PLAN FOR (ASPHALT PLANT)

Sr. #	Environmental	Mitigation Measures to be taken during		
	Parameter / Element	Construction	Regular Operation	Responsibility
Physical Environment				
1	Waste Water	The sewage to be generated shall be discharged into the septic tank for its primary treatment and then it will drain out into sewer. Domestic / construction waste water after Treatment in septic tank will be drained into nearby local sewage drain.	The sewage to be generated shall be discharged into the household level septic tank for treatment at PEQs levels. As there will be no chemical contamination, therefore, simple oxidation may reduce its pollution lead. Sewage and other waste effluents will be handled to avoid contaminating surface and groundwater. No contaminated effluents will be released into the environment without having been treated. Monitoring will be conducted by EPA certified LAB if required.	Environmental / Project Manager

2	Health & Safety	Local people will be informed in advance when work is about to start in an area. This may result in people keeping young children away from work areas. Safe driving practices will be adopted, particularly while passing through settlements. Job opportunity will be provided to local people of the area. Basic health facilities will be provided to employees. Open fires will not be allowed anywhere outside the proposed site.	Basic health facilities will be provided to employees Security guards will be present round the clock. Job opportunity will be provided to the local people of the area.	Environmental / Project Manager
3	Water Supply	It shall be ensured that no activity tempers with the water supply system.	It shall be ensured that no activity tempers with the water supply system. Project proponent committed to provide safe drinking water to all workers and staff.	Environmental / Project Manager
4	Solid Wastes	Limited solids wastes from the	Solid waste will be handed over to the local	Environmental

		construction activities shall be segregated and duly disposed-off. The solid redundant materials will be disposed off away from the city adequately. None of these wastes shall be accumulated on site. It shall be ensured that none of the wastes or materials of construction spread on the public roads or on the foot path or else. Construction Solid Waste will be stored in solid waste bins and will be handed over to local contractors for further treatment or final disposal and also construction waste will be used for road repairing and maintenance purpose.	contractors after collection from houses. Solid waste bins will be placed at suitable places. Area for solid waste bins will be placed at suitable places. Area for solid waste disposal will be allocated within the subject project. Proper solid waste management system will be adopted.	/ Project Manager
5	Noise	In order to noise in the project area, vehicles to carry raw materials, shall be operated during night time as far	In order to avoid noise in the project area, vehicles to carry domestic and commercial materials, shall be operated during night	Environmental / Project Manager

		as possible. The project construction activities don't involve any activity which may create high noise levels. Ear plugs will be provided & implemented.	time as far as possible. No activity producing extra ordinary levels of noise will be allowed as a policy matter. Generators will be installed in a specially constructed room where its noise will be curtailed within the limiting values of the Punjab Environmental Quality Standards. Monitoring will be conducted by EPA certified LAB as per PEQs if required.	
6	Gaseous emissions and particulate matter / dust emission	Construction materials i.e. sand, clay and like shall be transported to the project site during night time and will be stored away from the road or foot path. They will be kept under cover to avoid any fugitive dust. Dust may generate during unloading of raw materials. All equipment, generators, and vehicles used during the project will	Generators should be maintained properly. Generators will be installed in a specially constructed room. Avoid off roads travels. Maintain vehicles speeds. Monitoring should be conducted as per instruction of Environment Project Agency. Speed for traffic movement in the plant should be limited to avoid noise. Canopies should be built over generators to avoid noise pollution.	Environmental / Project Manager

		be properly tuned and maintained in good working condition in order to minimize exhaust emissions. All project vehicles will be checked regularly to ensure that engines are in sound working condition and are not emitting smoke. Ambient air quality has been monitored by EPA certified LAB and results are incorporated within the report.		
7	Soil disturbance / erosion	The clearing vegetation along proposed site will be minimized as far as possible. Minor & scattered vegetation is present that include shrubs and grasses only. Control earthworks and compact loose soils. Install drainage structure properly.	Maximum plantation is recommended within at outside the land subdivision and for this area is reserved. Tarpaulin sheets will be placed under generator (s), and other leaching substances. Land will be restored by planting indigenous plants. Landscaping on project completion.	Environmental / Project Manager

		Landscaping on project completion. Control activities during rainy conditions. Provide soil erosion control and conservation structures / means where necessary. To the greatest extent possible, phase site clearance so as to minimize the area of exposed soil at any given time.		
8	Traffic related problems	The vehicles number will be regulated in a way that no stampedes occur on the site. As far as possible, large size vehicles in very limited number may visit the project site during night time.	The project site has additional area reserved exclusively for parking cars and motor cycles.	Environmental / Project Manager
9	Trash Burning	No trash burning will be allowed on the roads and streets.	No trash burning will be allowed on the roads and streets.	Environmental / Project Manager
10	Dust	The open place will be duly cleaned	Plantation will be ensured in open space to	Environmental

		after sprinkling of water to avoid any dust to spread around.	avoid dust.	/ Project Manager
BIOLOGICAL ENVIRONMENT				
11	Flora & Fauna	Proposed site is devoid – off any protected species of both flora n fauna.	Awareness programs will be planned regarding the protection of flora n fauna. Species of indigenous plants will be planted at site.	Environmental / HSE Manager
SOCIOECONOMICS IMPACTS				
12	Resettlement issues	There is not any issue of resettlement due to the construction of the subject project.	There will not be any issue of resettlement due to the operation of the subject project.	Environmental / HSE Manager
13	Change in cultural language	Maximum employment of local people is recommended to preserve the local culture language. It will help in communication with the local people to resolve any emerging issue near the project area.	Maximum employment of local people is recommended to preserve the local cultural language. It will help in communication with the local people to resolve any emerging issue near the project area.	Proponent
14	Education	Schools and colleges exists in the area. The project proponent will	Schools and colleges are exists in the area. The project proponent is committed to	Proponent

		initiate an educational awareness program.	initiate an educational awareness program.	
15	Health	Health facility already exists in the project site. The project proponent should provide first aid facilities at site and also social security and medical checkups of the workers.	Health facility already exists in the project site. The project proponent should provide first aid facilities at site and also social security and medical checkups of the workers.	Proponent
16	Culture, norms of the Area	Maximum local employment should be ensured to preserve the culture of the area.	Maximum local employment should be ensured to preserve the culture of the area.	Proponent
17	Gender inequality	Women involvement in decision making process should be ensured.	Women involvement in decision making process should be ensured.	Proponent
OTHERS				
18	Environment quality enhancement measures; flowers and plants and decoration lights.	-	Flowers pot containing flowers and plants will be planted in front of the buildings to add to the improvement of the environment around. Street lights will be provided in the roads	Environmental / Project Manger

			and streets.	
19	Staff for catering the Environmental Management Plan	-	Special staff will be recruited to implement this Environmental Management Plan on regular basis.	
20	Enhancement of aesthetic beauty of the Building and the Area.	-	All other necessary measures shall also be taken to maintain standards of cleanliness so that the building may add to the scenic / aesthetic beauty of the area around.	

(8)**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.

8.1 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:

8.1.1 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.

8.1.2 The Responsible Authority

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

8.1.3 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 forms are annexed.

8.2 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 Asphalt Plant. Stakeholders participation performer's and socioeconomic questionnaire were get filled by the inhabitants to evaluate the project socioeconomic impact.

(9)

CONCLUSION & RECOMMENDATIONS

9.1 Conclusions

- The EIA study reveals that the project is economically viable, socially acceptable and environment friendly.
- On completion of the project Musaddaq Enterprises. (Asphalt Plant) will provide fine quality bitumen to local and general public / industries.
- It will generate additional jobs during construction and operation phases.
- Project is environmental friendly and pollution free.
- The proponent has committed to implement the project in the environment friendly manner.
- Project proponent has ensured to install the Septic Tank to treat the domestic waste water prior to discharge into drain or use for irrigation purposes.
- Project proponent has ensured to adopt the proper solid waste management system.
- Proponent has ensured to adopt all the necessary measures to control any impact if resulting from the project.
- Project proponent has ensured to provide the safe drinking water to all workers and staff as well as in the plant.
- Proponent of Asphalt Plant intends to register the project with local government.
- Project proponent has prepared and implemented very comprehensive Emergency Preparedness and Response Standard Operating Procedures.

9.2 Recommendations

- In view of the comprehensive screening process and findings of the present study there is no need of conducting further investigations.
- Tree plantation inside and near the project is recommended.
- Septic Tank will be installed for primary treatment of waste water.

- Proper Solid Waste Management System should be followed according to direction of the Local Government.
- The untreated wastewater should not be reused for irrigating the vegetation, lawns and green belts.
- High Standard of Bio-Security and safety should be enforced during operation phase.
- Safety of the workers should be top priority for the management.
- Asphalt Plant will continue to assist the local communities as a corporate / social responsibility.

The present EIA report is enough to meet the administrative and legal framework. Therefore, the Environmental Approval may be accorded for the present project.

LIST OF GLOSSARY

<i>Mitigation</i>	<i>The action of Lessing in severity or intensity</i>
<i>Evaluated</i>	<i>Estimated or determine the nature, value, quality, ability, extent</i>
<i>Legislation</i>	<i>Law entitled by a legislative body</i>
<i>Discrepancies</i>	<i>A difference between conflicting facts, claims or opinion</i>
<i>Aspects</i>	<i>A distinct feature or element in a problem</i>
<i>Compliance</i>	<i>Acting according to certain accepted standards</i>
<i>Flora</i>	<i>All the plants life in a specific region</i>
<i>Fauna</i>	<i>All the animal life in a specific region</i>
<i>Demarcated</i>	<i>Separate clearly, as if a boundaries</i>
<i>Screening</i>	<i>The display of a motion picture</i>
<i>Substitutions</i>	<i>An event in which one thing is substituted for another</i>
<i>Regulation</i>	<i>An authoritative rule</i>
<i>Stakeholder</i>	<i>A person or organization with a interest</i>
<i>Vulnerable</i>	<i>Susceptible to attack</i>
<i>Annunciation</i>	<i>A formal public statement</i>

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