EIA/2024

JDW Group

PRPJECT: INSTALLATION OF DISTILLERY PLANT
OF
M/S JDW SUGAR MILLS

Located at Mouza Pir Ahmedabad, Kot Sabzal, National Highway, Sadiqabad, Rahim Yar Khan.

Client

Mr. Maqsood Ahmad Malhi ***(Company Secretary)***

Consultants

ECOGREEN
Environmental Lawyers, Engineers & Consultants

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EXECUTIVE SUMMARY

Title of Project: Installation of Distillery Plant of M/s JDW Sugar Mills Limited.

Location of Project: Mouza Pir Ahmedabad, Kot Sabzal, National Highway, Sadiqabad, Rahim Yar Khan.

PROJECT PROPONENT	PROJECT CONSULTANT
Mr. Maqsood Ahmad Malhi (Company Secretary) JDW Sugar Mills Limited, 17-Abid Majeed Road, Lahore Contact No. +92-4236677020 Email: **maqsoodmalhi@jdw-group.com**	**Ecogreen Company (Pvt.) Ltd.** Plot No.2-A, Mini Commercial Area, Canal View Society, Lahore Contact No. +92- 042-32355915 Cell No: 0323-4169623 www.ecogreen.com.pk

This executive summary of Environmental Impact Assessment (EIA) Report presents a brief account of foreseeable environmental and social impacts likely to emanate from the project namely ***Installation of Distillery plant of M/s JDW Sugar Mill Limited***, Mouza Pir Ahmedabad, Kot Sabzal, National Highway, Sadiqabad, Rahim Yar Khan.. The main goal of the said project is to install a distillery plant to produce ethanol from the molasses (a by-product of sugar cane processing) by the process of fermentation and distillation. Industrial grade ethanol/ ENA Grade Ethanol/ Fuel Grade Ethanol will be produced which is cheap and environment friendly. This ethanol will be supplied locally as well as export in the international market. Ethanol is basically used in different industries like Pharmaceutical, Chemical, Cosmetic, Detergent and Solvent Industries.

The report describes the various actual and potential environmental impacts pertaining to both phases of the project, i.e. construction phase and the operation phase with reference to their extent and magnitude. Environmental Impact Assessment (EIA) study of the project has been conducted in accordance with the **Punjab Environmental Protection (Amendment) Act 2012** and **The Punjab Environmental Protection (Review of Initial Environmental Examination/ Environmental Impact Assessment) Regulations, 2022**.

Screening

The said project falls in **Schedule II *Category B (3) of the Regulations i.e."Sugar Mills and Distilleries"***. It requires an EIA Study. Thus, an EIA Study has been conducted and report is being prepared for submission of application in EPA Punjab to obtain Environmental Approval/NOC.

Project Objectives

The main objective of the project are;

- To supply surplus amount of ethanol in both local and international market.
- To benefit all allied industries like Pharmaceutical, Chemical, Cosmetic, Detergent and Solvent Industries. Foreign revenue generation shall enhance GDP of the country.
- Improving the socioeconomic conditions of the persons directly linked to the project.
- Creation of new job opportunities and promoting income prospects for those engaged in transportation of raw materials and other construction sector activities can be counted as some secondary or indirect objectives of the project.

Site Alternatives

The proposed site has been selected for the project because 2 Sugar mills of JDW group are located nearby to proposed project site. The transportation of raw material (molasses) will be easy and have to cover short distance. That will not only reduce the transportation cost but also lessen the carbon foot print and make project environmental sustainable as well.

Salient Features of the project are

Project Name	Installation of Distillery Plant of M/s JDW Sugar Mills Limited.
Location	Mouza Pir Ahmedabad, Kot Sabzal, National Highway, Sadiqabad, Rahim Yar Khan.
Coordinates of Project	28°11'37"North and 69°51'20"East
Proponent Name	Mr. Maqsood Ahmad Malhi
Project Cost	Approx. PKR 12.0 Billion
Environmental Budget	Approx. PKR 3.4 Billion
Total Area	50 Acres
Products	Industrial Grade Ethanol/ENA Grade Ethanol/Fuel Grade Ethanol
Production Capacity	230,000 Liters/Day
Manpower	During Construction 300 During operation 250
No. of Boilers	1 of capacity 35tons/hr
Fuel of Boilers	Bagasse/ Biogas Initially bagasse will be used as fuel for boiler but after startup of distillery operation. Biogas will be produced and used as fuel for boiler.
Water Source	Irrigation canal

	Main irrigation canal is Ahmed Wah from three minor branches i.e Sabzal minor , Kharie minor and Muhib shah minor at a distance of 2.5-3.0km from the proposed project location.
Source of Power	WAPDA/ Self Generation/ Standby Generator of 1MW.
Water requirement	3,000 Tons/day Process Water = 2,400 tons/day Domestic water =600 tons/day
RO plant	40-60 tons/day
Period of Construction	Approx. 01 Year
Waste water	3,000-3,200 ton/day
Wastewater treatment	Primary treatment- Anaerobic treatment in bio-digesters having capacity of 98,000 tons form which 3,000 tons/day primary treated waste water after that shifted to the Constructed Wetland at a distance of approximately 25km from proposed project site.
Solid waste	Mud of 2-3 Ton/day
Solid waste Management	Mud used as fertilizers and sold to farmers

Project Description.

In this said project, molasses will be used as raw material for production of ethanol that are by product of sugar mills. The molasses contain 45-48 % of total sugar, which is converted in to ethanol by fermentation process. First molasses is diluted by adding water and adjust the total dissolved solids up to 7-8%, then yeast is added in diluted molasses solution and fermentation process takes place. As process goes up glucose is converted in to ethyl alcohol and carbon dioxide. After sufficient conversion of glucose in to ethyl alcohol this solution is then passed through distillation columns. Based on the temperature difference ethyl alcohol will separated from solution and condense into liquid form. The wastewater from distillery column called spent wash will be treated through primary and secondary treatment process. Details of the project and waste water treatment are given in **Chapter 5** of this report.

The major impacts and recommended mitigation measures

Environmental impact evaluation actually grows out of scoping and baseline study of the project. In principle, EIA assigns various quantified values to different levels of all the impacts affecting the project. This step is generally considered as the most technical in nature and therefore is the most difficult and controversial part of the EIA. Impacts anticipated during construction and operational phase may include noise, air emissions, water conservation and pollution, soil contamination (physical), community, workers' safety and employment conflicts (socio-economic). The brief description of the impacts and their mitigation measures during construction and operational phase are given below in tabulated from and discussed in detailed in **Chapter 8** of this EIA report.

IMPACT	MITIGATION MEASURE	
	CONSTRUCTION PHASE	OPERATION PHASE
Solid waste generation	• Provide solid waste handling facilities such as waste bins and skips in all sections of the factory • Ensure that solid waste generated is regularly disposed off appropriately • Waste will be managed by as per municipal practices. • Non-biodegradable and recyclable matter, such as containers, wastes, used materials, waste packaging materials, will be sold to local contractors for recycling or reuse purpose.	• Proper solid waste handling will be done. • Sludge (slurry) will be sold; disposed off through contractors; farmers for usage as bio-fertilizer.
Wastewater generation	• No water will be disposed off into sewer lines without proper treatment. • Domestic wastewater will be treated in the septic tank before final disposal.	• Waste water from distillery will be sent to primary (anaerobic treatment) where organic matters will be converted through anaerobic treatment into biogas. • Biogas will be utilized as an alternative fuel for steam generation in boilers.

Air pollution	• Management needs to regularly carry out checks of all machinery and carry out regular servicing and maintenance of it in order to keep the environmental impact on account of their emissions to its minimum level. • For reducing fugitive dust, regular water sprinkling on roads will be done. • All trucks proposed to be used for transportation will be covered with tarpaulin, maintained and optimally loaded. • Moreover, the garden development and tree plantation activities of proponent during operational phase would ensure minimal impact of fugitive dust emissions.	• CO_2 during fermentation will be produced and sent to CO_2 Recovery plant, compressed and sent to beverage industry • Biogas produced in anaerobic treatment (Digesters) during spent wash treatment will be transferred to the boiler for steam generation. • Boiler is equipped with cyclones to mitigate its anticipated effects to the environment. • Proper ventilation plan, good housekeeping, and regular monitoring for preventive maintenance are the control measures which will check air pollution. • Air masks, helmets and safety uniforms will be provided to the workers and proper check will be made to check its compliance in the premises. • No anticipated air pollution will occur as the plant will be equipped with best pollution control technologies.

Proposed Monitoring

During construction, ambient air quality for dust level in particular, vehicle and equipment exhaust, noise level, solid waste management and soil contamination, community and workers' safety (visual) need to be monitored on regular basis.

During operation, ambient air quality for dust level in particular, noise level, solid waste management and soil contamination, and community & workers safety need to be monitored as per guidelines of EPA. Monitoring Plan has been included in **Chapter 09**.

Conclusion

The EIA report contains a description of the proposed project, environmental baseline, associated anticipated environmental impacts arise due to proposed project activities and suggested mitigation measure to reduce (if not eliminate) the impacts so that these can be within acceptable limits. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan for both construction and operational phase has also been included in this study. It is further concluded that *all potential environmental concerns associated with the proposed project have been adequately addressed, and no further study is required in this context. So, the project may be acquired environmental approval for this proposed project.*

Recommendations

The intensity and severity of impacts occurred due to Installation of Distillery plant varies with a change in the nature and magnitude of the project as well as depends upon the baseline environmental conditions of the area. The mitigation measures will require constant information flow and consultation with the stakeholders to ensure the least adverse social-economic impact to outweigh the "no project development" scenario.

- The adverse environmental impacts can be reduced significantly by adopting best management and monitoring practices as well as by implementation EMP with true spirit.
- Proper PPEs including aprons, rubber gloves, marks, ear plugs and shoes should be provided to workers.
- No compromise on public health and environment should be allowed.
- Waste minimization practices should be introduced to workers by conducting lectures on the spot to aware the workers about the long term benefits of the same in lieu of the surrounding environment.
- A proper tree plantation plan should also be developed in order to make the process environment friendly.
- Small domestic waste storage bins should be placed at different locations for proper collection and disposal of solid waste.
- It is recommended that the Proponent should obtain an Environmental Approval (NOC) from the Punjab-EPA before proceeding further.

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1 INTRODUCTION

1.1 Purpose of the Report

For any development project to be initiated in the province of Punjab, it is mandatory to obtain Environmental Approval from EPA Punjab under **Section-12** of the ***Punjab Environmental Protection (Amendment) Act, 2012*** by filing an Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) before EPA Punjab, as may be defined in *the* ***Punjab Environmental Protection*** (***Review of Initial Environmental Examination/Environmental Impact Assessment) Regulations, 2022***.This Report presents the Environmental Impact Assessment (EIA) Study for Installation of Distillery Plant of M/s JDW Sugar Mills Limited. For this purpose, the proponent engaged environmental consultants; **Ecogreen Company (Private) Limited** to conduct EIA Study of aforesaid project. The purpose of this study is to identify the environmental baseline i.e. physical, biological and socio-economic/cultural conditions and assess all possible impacts arising during the construction and operation phase of project and to find out appropriate measures for their mitigation, to either eliminate those impacts or to bring them to acceptable level and formulation of Environmental Management Plan (EMP) for implementation of the project in environment friendly manner.

This EIA Report is prepared by critical examining environmental factors which might be affected due to said project implementation. This report provides the basis for a determination of degree of environmental impacts of project. This report provides relevant information, as required under the officially approved format, to help the decision makers i.e. EPA Punjab in deciding the instant application for grant of Environmental Approval/NOC.

1.2 Identification of the Project & Proponent

The details of proponent of aforesaid project are given below:

Table 1: Details of Proponent

Details of Proponent	
Name & Address	**Mr. Maqsood Ahmad Malhi** (Company Secretary)
Address	JDW Group, 17-Abid Majeed Road, Lahore
Contact No.	+92-4236677020
Email	maqsoodmalhi@jdw-group.com

1.3 Consultant's Details

The proponent of said project engaged **M/s Ecogreen Company (Pvt) Limited** to carry out the EIA Study of aforesaid project in accordance with EPA guidelines. For this purpose, the details of experts working on this assignment are given below in Table-2.

Table 2: Consultant Details

Consultant Details	
Consultant	**Ecogreen Company (pvt) Limited**
Address	Plot # 2, Mini Commercial Market, Canal View Society, Lahore
Contact No.	042-32355915
Focal Person	
Name	Dr. Ambreen Lateef
Designation	Lead Environment Professional
Contact No.	0323-4169623

To prepare an EIA Report of the respective project the company engaged the following experts. The details of the experts are given below in **Table-3**.

Table 3: List of Experts

Sr. #	Name	Qualification
Team Leader		
i.	**Dr. Ambreen Lateef**	Ph.D Environmental Sciences
Environmental Scientist		
ii.	Ms. Kiran Irshad	M.Phil. Environmental Sciences
iii.	Ms. Nimra Saqib	M.Phil. Environmental Sciences
Environmental Engineer		
iv.	Engr. Faiza Hanif	B.Sc. Environmental Engineering
v.	Engr. Sheraz Akhtar	B.Sc. Environmental Engineering
vi.	Engr. Taha Hussain	B.Sc. Environmental Engineering

1.4 Brief description of Nature Size & Project Location

The aforesaid project under study is titled as ñ***Installation of Distillery Plant of M/s JDW Sugar Mills Limited.***ò having production capacity of 230,000 L/D. The project is located in Sadiqabad, District Rahim Yar Khan, Punjab Province near to boundary line of Sindh Province as shown in the Figure 1. Having coordinates of site are; **28°11'37"N and 69°51'20"E.** The location of the aforesaid project is:

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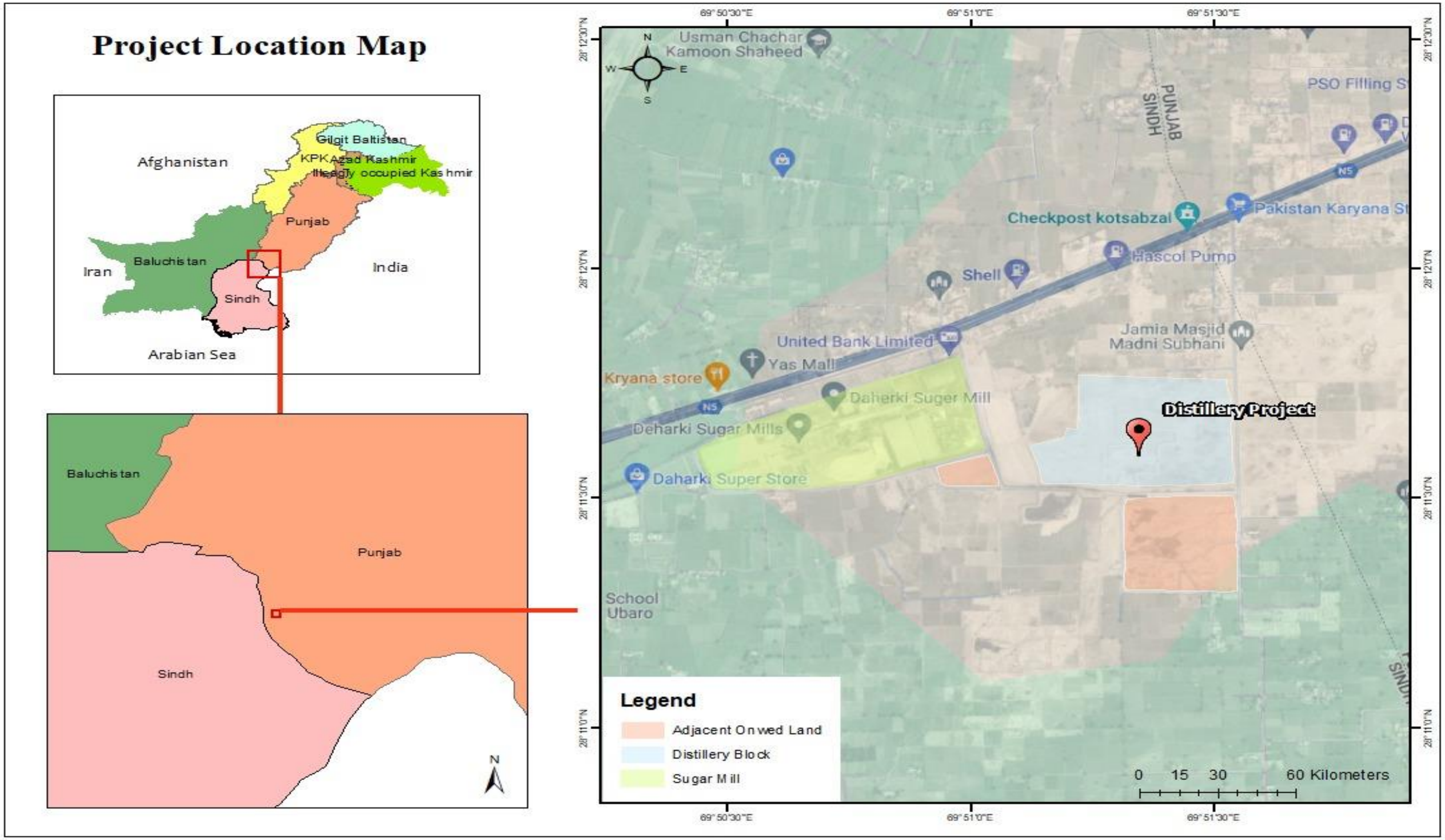

Figure 1: Location Map of the Proposed Project

Figure 2: Proposed Project Area

2 SCREENING

For the prediction and mitigation of impacts associated with project implementation at an early stage of project development, it is pre-requisite under the environmental laws to undertake Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Study as the case may be. Based on its nature, size and related impacts, the project under consideration has been categorized for EIA Study as stated in ***Regulation 03 of Statutory Notification (S.R.O No. O1/EPA/EIA/MISC/21/4214).*** As per the statutory notification of The Punjab Environmental Protection (Review of Initial Environmental Examination and Environment Impact Assessment) Regulations, 2022 made under Section 12 of Punjab Environmental Protection Act, 1997 (Amended 2012), which is reproduced as under;

ñ No proponent of a project shall commence
the Government Agency designated by Federal Environmental Protection Agency or Provincial Environmental Protection Agencies, as the case may be or where the project is likely to cause an adverse environmental effect an Environmental Impact Assessment (EIA) and has obtained
from the Government Agency approval in res

The aforesaid project i.e., ***"Distillery plant"*** falls under Schedule II i.e., Project requiring EIA**, Category B (3);** ***Manufacturing and Processing -Sugar Mills and Distilleries.***

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

3 SCOPING

3.1 Spatial and temporal boundaries of Environmental Assessment

The said project is proposed and located in Sadiqabad, Rahim Yar Khan and will be installed by adopting proper mitigation measures to avoid disturbance to local environment. No environmental sensitive area is present within area of influence that could be impacted due to current project installation.

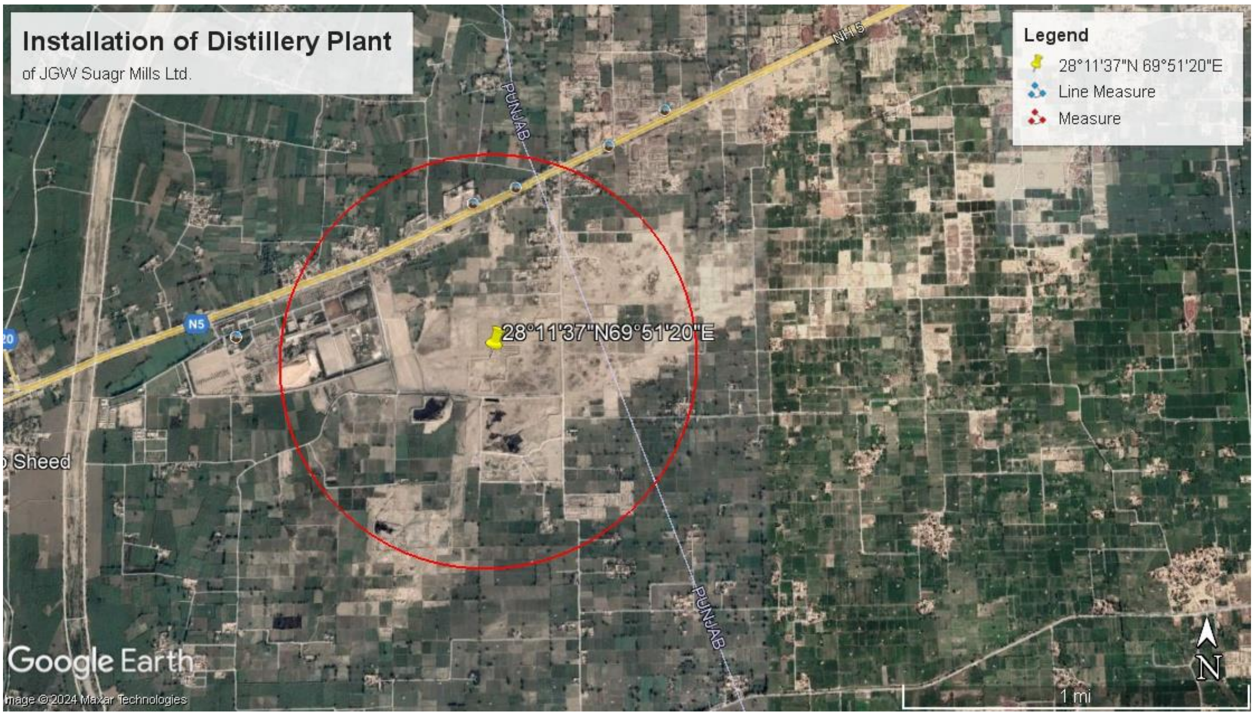

Figure 3: Area of Influence of Proposed Project site

3.2 Important issues and concerns raised during consultation

During consultation it was observed that maximum of people was in favor of project and following issues and concerns were raised. In chapter 10 Stakeholder Consultation it is mentioned in detail. During survey following concerns of the local community, Government Departments and Environmental Practitioners and experts were noted:

- Locals should be preferred for the job opportunities.
- Wastewater should be treated and dispose off properly.
- Solid waste should be managed effectively by adopting the standard practices of the area.
- Cleanliness of the area should be ensured.
- An effective EMMP should be designed and enforced with true spirit.

- Health of the workers should be ensured.
- Plantation should be carried out at extensive scale.
- Noisy activities should be confined.
- Indigenous tress around the facility should be planted to control air pollution.
- Tree cutting should be avoided to the extent possible.

3.3 Significant impacts and factors to be determined

Main impacts and factors to be determined are

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

4 CONSIDERATION OF ALTERNATIVES

4.1 Site Alternative, Their Selection And Rejection Criteria

For the said project, three different sites were considered in district Rahim Yar Khan. These sites were assessed by considering the environmental, social and economic impacts of the proposed project. This process helps in identifying the most suitable site that minimizes negative impacts and maximizes benefits. The selected site is suitable for installation of Distillery plant due to the following reasons:

- This selected site is located near to Deharki Sugar Mills (Private) Limited and JDW Sugar Mills Limited Unit-II, from where molasses will be easily transported to distillery plant for ethanol production.
- The site is owned by JDW Sugar Mills Limited and there is no dispute associate with the landownership
- The site is located at a suitable distance from community.
- The site is accessible through main roads and infrastructure of that area is fully developed.

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

4.2 Design/technology alternatives, their selection and rejection criteria

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

4.3 Environmental Alternatives, their selection and rejection criteria

After completion of construction, proper landscaping will be done. Solid waste and wastewater will be handled properly in environment friendly manner. Moreover, the proponent is very concerned and conscious about the quality and equally about the environmental protection and resource conservation. Proper tree plantation will be done at designated green areas after completion of construction. Latest and energy efficient machinery will be installed.

4.4 Economic Alternatives, their selection and rejection criteria

- ✓ ETP of adequate capacity will be installed to treat wastewater.
- ✓ Constructed wetland will be established that will become a source of greenery in desert area and helps in reduction of temperature of the area and also act as noise barrier.
- ✓ These wetland enhance the rains in that area and reclaim the area.
- ✓ Building design will be such that maximum use of day light and LED lights will be installed to minimize electricity consumption.
- ✓ Currently selected technology and design is economically efficient.

5 DESCRIPTION OF THE PROJECT

5.1 General

This section covers the project comprehensively. It holds salient features including; location, project site layout, objectives, process employed, cost and magnitude of operation, etc.

5.2 Project Objective

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

- To produce ethanol from molasses that meet increasing demand of market.
- To provide additional income and gainful employment to local people.
- Socio-economic up-lift of JDW Sugar Mills Limited and the local community through direct job placements and indirect business opportunities.
- To provide Products for export to other countries hence gaining the foreign exchange for the country.
- For creation of new job opportunities and promoting income prospects for those engaged in the allied activities associated with operation of project is considered as indirect objectives of the project.

5.3 ALTERNATIVES

5.3.1 Site Alternatives

No site alternative was considered because the proposed project is under the ownership of proponent.

5.3.2 Technology Alternative

5.3.2.1 Industrial method of preparation of ethanol

There are three methods to get ethanol, industrially. All these methods utilize raw materials which can be obtained from petroleum, natural gas, coal and biomass. The methods are outlined below.

1. By hydration of alkenes.
2. By fermentation of carbohydrates.

1. By Hydration of Alkenes

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Alkenes can be obtained by the cracking of petroleum can be easily converted into alcohols by hydration in the following two ways.

a. By the direct addition of water.

Alkenes can be converted into alcohols by direct addition of water in the presence of the phosphoric acid which acts as the catalyst.

b. By the indirect method of hydration.

Alkenes are directly hydrated at high temperature and pressure to form alcohols. This reaction is carried out in presence of acid like H3PO4.

$$\underbrace{C = C}_{Alkene} + H_2O \xrightarrow{Pressure\ H_3PO_4} \underbrace{CH_2OH}_{Alcohol}$$

Hydration of unsymmetrical alkenes follow Markovinkov's rule. Alkenes can also be hydrated indirectly in presence of Conc. H_2SO_4.

$$\underbrace{CH_2 = CH_2}_{ethene} + H_2SO_4 \rightarrow \underbrace{CH_3 - CH_2 - HSO_4}_{Ethyl\ hydrogen\ sulphate} \xrightarrow{H_2O} + \underbrace{CH_3 - CH_2 - OH}_{ethanol} + H_2SO_4$$

c. Fermentation

Fermentation is defined as the slow process of decomposition of large and complex organic molecules into simpler ones by the action of different enzymes. It is a complex biochemical process which is regarded as one of the oldest methods of manufacture of alcohol.
By this method ethyl, alcohol can be manufactured using two types of raw material molasses and starch.

a. From Molasses.

Molasses is dark colored mother liquor obtained after crystallization of sugar. It contains carbohydrates like sucrose, glucose, fructose etc. in significant quantity. Molasses is first hydrolyzed with water to form the dilute solution which is then mixed with yeast, a unicellular fungus containing enzymes like zymase, invertase, diastase etc). The different steps involved in this process are.

$$\underbrace{C_{12}H_{22}O_{11}}_{Sucrose} + H_2O \xrightarrow{invertase} \underbrace{C_6H_{12}O_6}_{Glucose} + \underbrace{C_6H_{12}O_6}_{Fructose}$$

$$\underbrace{C_6H_{12}O_6}_{Glucose} \xrightarrow{Zymase} \underbrace{2C_2H_5OH}_{Ethanol} + 2CO_2$$

The alcohol obtained from molasses is called "wash" which contains the low percentage of ethyl alcohol (15- 30%). When impure ethyl alcohol is subjected to fractional distillation, pure alcohol is obtained containing the purity of about 90-97%. This alcohol is called 'rectified spirit'.

b. from starch.

Ethyl alcohol also is manufactured from starch containing food grains like millet, rice, wheat, maize, buckwheat etc. In this method, food grains are cooked at first to release starch granules. The solution is diluted with water and the resulting solution is called 'mash'.

'Mash' is mixed with malt which is geminated barely containing a unicellular plant, yeast. Yeast contains different enzymes required for fermentation.

The fermented liquor obtained by this method is called 'wash' which is subjected to fractional distillation to obtained pure alcohol having the purity of about 90-97% and is called 'rectified spirit'.

$$\underbrace{2(C_6H_{10}O_5)_n}_{Starch} + nH_2O \xrightarrow{diastase} \underbrace{nC_{12}H_{22}O_{11}}_{Maltose}$$

$$\underbrace{C_{12}H_{22}O_{11}}_{Maltose} + H_2O \xrightarrow{Maltose} \underbrace{2C_6H_{12}O_6}_{Glucose}$$

$$\underbrace{C_6H_{12}O_6}_{Glucose} \xrightarrow{Zymase} \underbrace{2C_2H_5OH}_{Ethanol} + 2CO_2$$

The above mentioned processes are efficient and effective in many ways but the proposed plant works under the fermentation process using molasses as a raw material. As Noon Sugar Mills Ltd.

is a sugar manufacturing industry thus, molasses is produced as a by-product in a larger manner. Apart from wasting they are utilizing it in the other way for the production of ethanol and generating capital from it. The process is feasible as they are recovering Carbon dioxide from the process along with the spent wash produced is being used in the biogas production to be used for steam generation in the boiler. This process seems to be cost effective and efficient in the view of the proponent as other methods are expensive and their energy consumption is high and have environmental concerns.

5.4 Project Background/Introduction

JDW Group is the progressive industrial house of the country. Sugar manufacturing is the core business of the Group and is also renowned for support of innovative farming techniques which augment the core business. The Group takes immense pride in social responsibility activities (social mobilization, women enterprise development, support to technical and primary education, micro credit for the poor, infrastructure development, livestock development etc.) all aimed at ameliorating social and economic conditions of the poor people in rural areas.

The Sugar Division comprises of four sugar mills Units, JDW Unit-I, JDW Unit-II & JDW Unit-III in the districts of Rahim Yar Khan (Punjab) and Ghotki (Sindh) respectively, apart from three Units JDW Sugar Mills also owns Deharki Sugar Mills (Pvt.) Limited - “DSML”(“the Subsidiary Company”) of JDW Sugar Mills Limited (Holding Company). DSML is located in District Ghotki, Sindh.

JDW Sugar Mills Limited is also owned and operating two High-Pressure, Bagasse Based Cogeneration Plant of 26.8 MW each located at JDW Sugar Mills Unit-III, Ghotki (Sindh) and at JDW Sugar Mills Limited Unit-II, Sadiqabad (Punjab) and is supplying **affordable and renewable electricity to the National Grid**.

JDW is also managing Sugarcane Corporate Farms over the area of 24,000 Acres in the Provinces of Punjab & Sindh. By using knowledge, experience together with modern tools and machinery and distinctive agronomic strategies, JDW has been able to build highly efficient and eco-friendly farms with higher yields. Company’s unique farming techniques have also led to the capacity building of existing farmers thereby resulting in improved and reliable cane supply to JDW.

5.5 Project Location and Layout

The proposed site for the Installation of Distillery Plant of JDW Sugar Mills Limited is located at Mouza Pir Ahmedabad, Kot Sabzal, National Highway, Sadiqabad, Rahim Yar Khan.. The coordinates of site are; ***Latitude 28°11'37"N*** *and* ***Longitude 69°51'20" East*** given in below Figure 4**.** The layout map of project is attached as Annexure III.

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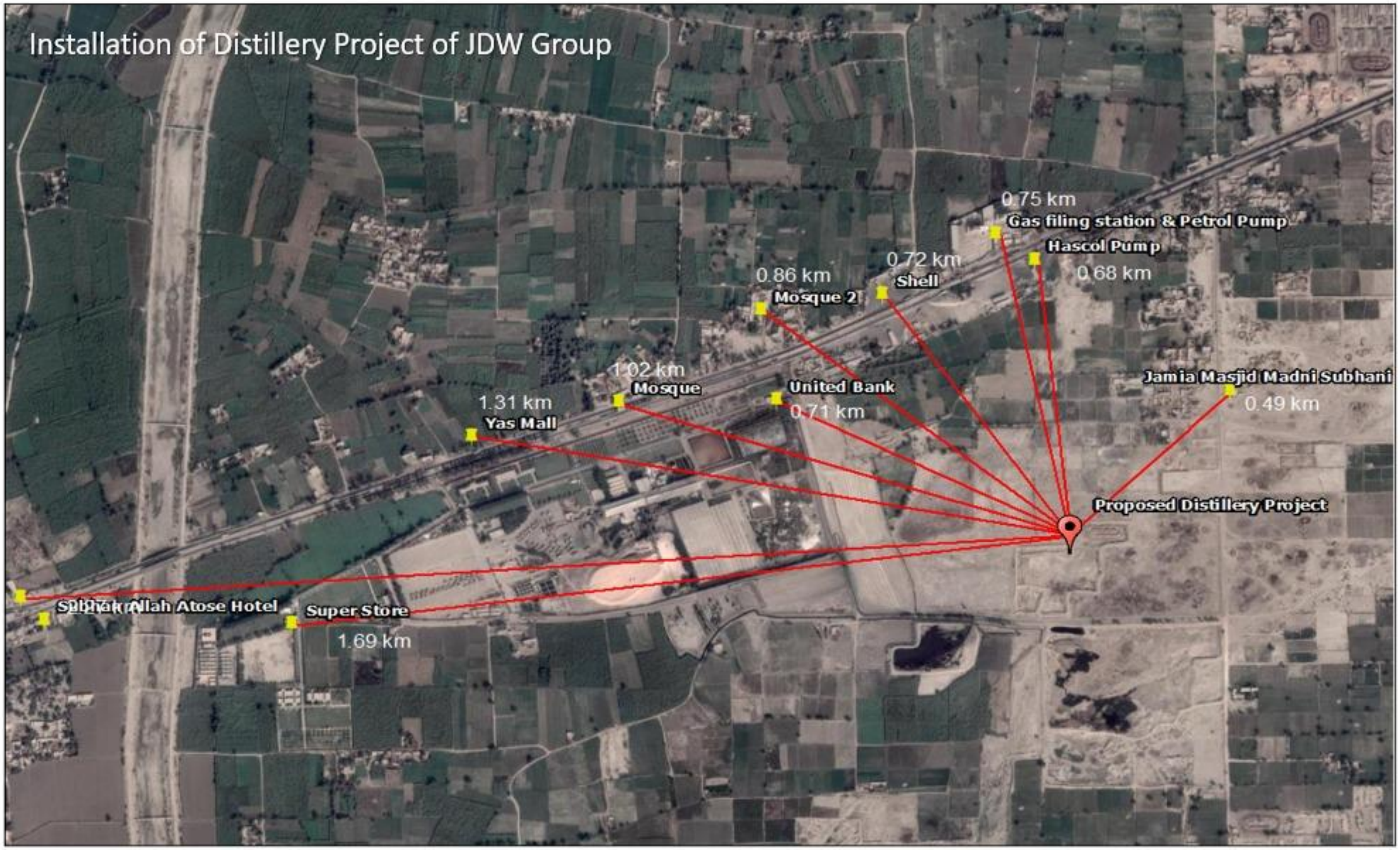

Figure 4: Google Map showing distance of various Receptors from Proposed projectSite

5.6 Land Use on the Site

The land use on proposed project is open plot. The pictorial evidence of the proposed project location is shown in Figure 5.

Figure 5: Land Use on the Proposed Project Site

5.7 Road Access

The site is accessible through N5-National Highway at distance of 0.66km. The road access map of project is attached below:

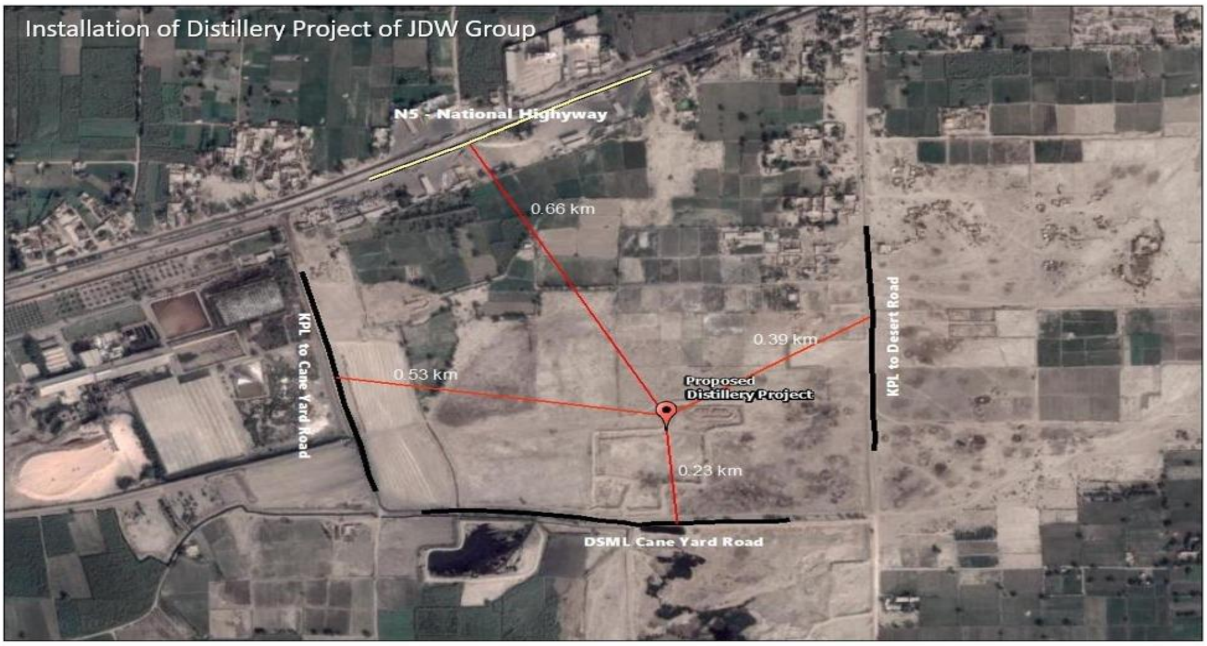

Figure 6: Road Access Map of Proposed Site

5.8 Vegetation Features

Landscaping/ Tree plantation is present in surroundings of project area. During operation phase, green belts will be developed and it will serve as a useful green buffer.

Figure 7 : Tree Plantation around Project Site

5.9 Cost and Magnitude of Operation

The estimated cost of aforesaid project is **approximately PKR 12.0 Billion.** Purchase of raw material, operation and maintenance of production machinery are the costly activities involved in the operation phase of said project. Equipment safety will be assured if these operations are carefully managed. The cost breakup of the project is given in **Table 4**. However, budget will be allocated for purchase and maintenance of standardized PPEs for workers and for waste management and environmental enhancement. Despite these costs, this project was found to be financially feasible. Magnitude of operations includes:

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

The allocated environmental budget is **PKR 3.4 Billion approx.** The allocated environmental budget will be spent on landscape/green zone management, solid waste management, wastewater treatment plant and its maintenance along with Environmental monitoring. The proponent will plant indigenous and ornamental plants to increase the aesthetic value of the area. Thus, the project is also a source of employment for locals and would help in economic development activities of the area.

Table 4 : Cost breakup of the Project

Description	Total Estimated Cost	Estimated EP Cost	Remarks
	Rs.	Rs.	
Land & Civil Works			
Land	708,505,688	375,000,000	Cost of 750 Acre Land for Waste Water Disposal
Building & Civil Structure	685,000,000	585,000,000	Cost of Waste Water Disposal Pipeline
	1,393,505,688	**960,000,000**	
Plant and Machinery			
Plant & Machinery	7,534,879,740	2,276,372,196	Bio Gas Plant (Primary Effluent Treatment Plant)
	7,534,879,740	**2,276,372,196**	
Others			
Finance Cost - Pre Operating	2,243,835,616	-	
Pre-Operating Expenses	180,278,955	-	
Others	297,500,000	-	
Vehicles and Office Equipments	50,000,000	-	
Miscellanous/Contingencies	300,000,000	100,000,000	Plantation, Sprinklers, Other Costs & Equipment
	3,071,614,571	**100,000,000**	
Total	**12,000,000,000**	**3,336,372,196**	

5.10 Schedule of Implementation

The proponent intended to complete the construction in a period of a year.

Table 5: Schedule of Implementation

Sr. #	Activities	6 Months			6 Months		
		2M	2M	2M	2M	2M	2M
1.	Detailed Designing						
2.	Mobilization of Contractors						
3.	Demolition of existing hall						
4.	Preparation of site						
5.	Civil Works						
6.	Installation of facilities						

5.11 Project Description

The proponent has planned to install the distillery plant for production of alcohol having total area of 50 acres with production capacity of 230,000 L/D. The layout map is attached herewith as Annex- III.

5.11.1 Raw Material and Chemical

The molasses is the raw material that produced as by product sugar processing and following chemicals are required for distillation process;

1. Molasses (MT)
2. Sulphuric acid (Kg)
3. Diammonium Phosphate (DAP) (Kg)
4. Antifoam (Kg)
5. Calgon (Kg)
6. Anti Foam
7. Anti-scalent for distillation
8. Sodium fluoride (Kg)
9. Phosphoric acid (Kg)
10. Yeast (Kg)
11. Caustic Soda (Kg)
12. Soda Ash (Kg)

5.11.2 Final Product

Industrial Grade Ethanol/ENA Grade Ethanol/Fuel Grade Ethanol

5.11.3 Process Description

The said project is installation of Distillery Plant for production of Ethanol from molasses. The main steps involved in the process are following and process flow chart is given in below **Figure 8**.

1. Molasses Storage and Handling
2. Molasses Dilution
3. Pre fermentation
4. Fermentation
5. Distillation Process
6. Final Product Storage

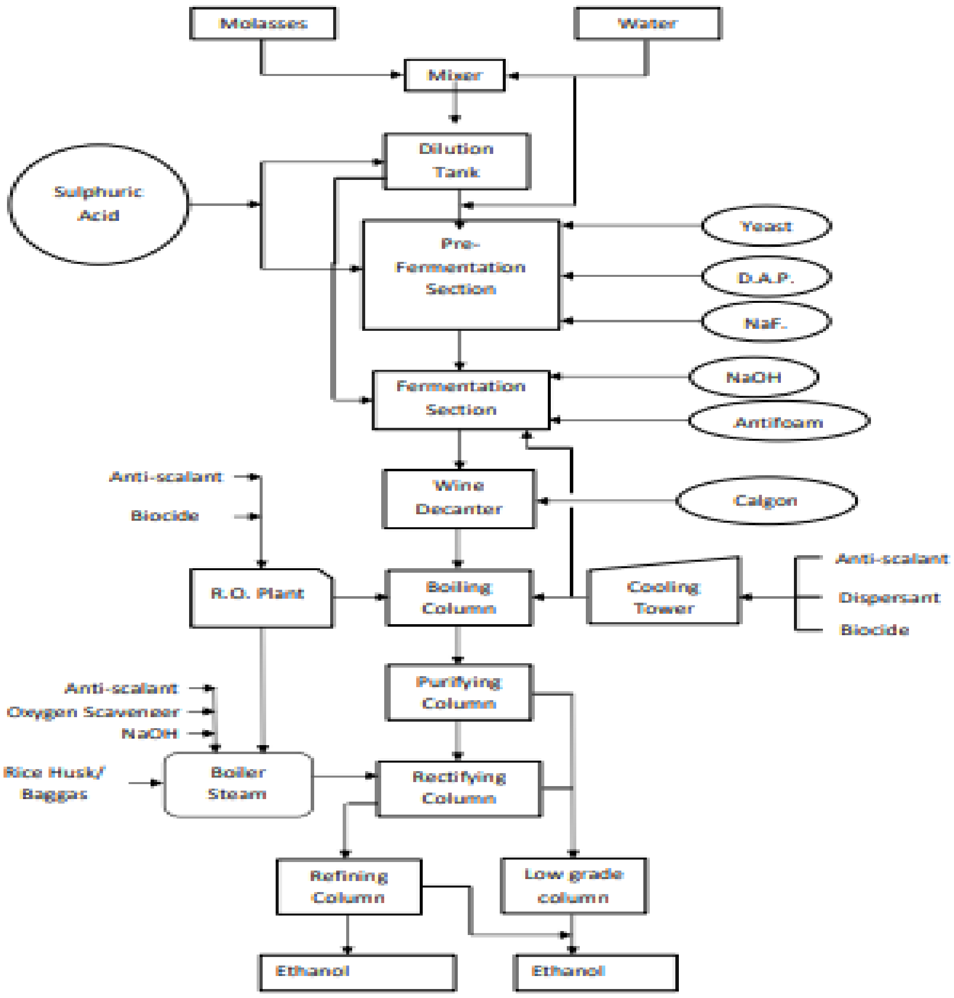

Figure 8: Process Flow Chart

5.11.3.1 Molasses Storage and Handling

The molasses will be taken from Deharki Sugar mills and JDW Sugar unit –I & II and stored in the molasses tanks (total 3) having capacity of 20,000 tons each. In this step, arrangement should be made for temperature monitoring and pumps for circulation in case abnormal rise of temperature will occurred. Forecasting Emergency arrangement in case of fire or internal burning of molasses.

5.11.3.2 Molasses Dilution

Molasses is a thick viscous by product of the sugar industry which is acidic in nature, rich in salt and contain sugar which could not be crystallized. Molasses from bulk storage transferred will be to molasses receiving tank and diluted with process water. In which molasses brix reduced to 30 to 33 from 90 that is required for Refermentation/fermentation process.

5.11.3.3 Pre-fermentation Process:

In this step, yeast culture will be developed and then added to fermentation for alcohol production. Pre- fermentation is an exothermic reaction in which temperature will be controlled by cooling water circulating in cooler.

5.11.3.4 Fermentation Process

The pre fermented media is shifted to fermentation section during plant start up. In this step, diluted molasses 67% of 30 Brix and 33% prefermenter added , fermenter filled within 14 to 16hrs and left for reaction and reaction completed in 40hrs , ethanol produced 7.5 to 9.0 % depend upon molasses sugar , feed brix and transferred to distillation for purification.

5.11.3.5 Distillation:

In this step produced ethanol from fermentation and purified in distillation with the help of steam and vacuum by multistage distillation column from C-510,511,520,530,540,560,561,550. The ethanol vapors are condensed and cooled to room temperature.

5.11.3.6 Final Storage

The ethanol separated, cooled in cooler and then stored daily storage tanks placed in receiver room and having the capcity of 216 Tons of two tanks and 13 Tons of two storage tanks in after daily storage tanks the ethanol will shift to final storage tanks having the capacity of of 4400 Tons each tank three tanks and one tank of 1200 tons and one tank of 400 Tons will be in in Ethanol Main storage area.

5.11.4 List of Machinery

The list of machines is in below Table.

Table 6: List of Machines

FERMENTATION HOUSE						
Sr.#	**Item**	**Description**	**Particulars**	**Quantity**	**Make**	**Remarks**
1	--	Molasses Storage Tanks	Capacity=20000 tons eac	2 Nos.		
2		Molasses Supply Pumps	Capacity=150 Ton / hr	4 Nos.	Local	
3	--	Molasses Supply Pumps	Capacity=70-80 Ton / hr	6 Nos.	Local	
4	P-306 A/B	Dilution Pumps	Capacity= 80 m^3/ hr	2 Nos.		
5	R-411-13	Pre Fermenters Tanks	Capacity= 350m^3	3 Nos.		
6	P-411-13	Circulation Pumps	Capacity= 250 m^3/ hr	3 Nos.	Imported /Local	Sterling Gmbh/Ksb Pakistan
7	E-411-13	Heat Exchangers	Plate Type	3 Nos.		NKR, Pakistan
8	R-421-428 ,430	Fermentation Tanks (S.S	Capacity= 800 m^3	9Nos.		
9	P-421-428	Circulation Pumps	Capacity= 550 m^3/ hr	8 Nos.	Imported/ Local	Sterling Gmbh/Ksb Pakistan
10	E-421-428	Heat Exchangers	Plate Type	8 Nos.		NKR, Pakistan
DISTILLATION HOUSE						
11	C-500	Vacuum scrubber.	Packing column.	1 Nos.	Local	
15	C-510	Stripping column.	SS TRAYS	1 Nos.	Local	
16	C-511	Degassing column.	SS TRAYS	1 Nos.	Local	
17	C-520	Concentration column.	SS TRAYS	1 Nos.	Local	
18	C-521	Lutter column.	SS TRAYS	1 Nos.	Local	
19	C-530	Purifying column.	SS TRAYS	1 Nos.	Local	
20	C-540	Rectifying column.	SS & COPPER TRAYS	1 Nos.	Local	
21	C-550	Refining column.	SS & COPPER TRAYS	1 Nos.	Local	
22	C-560	Low grade alcohol concentration column.	SS TRAYS	1 Nos.	Local	
23	C-561	Lightening recycled alcohol	SS TRAYS	1 Nos.	Local	
1	--	Steam Boiler (Water t type) fitted with accessories e.g. Oil bur Gas Burner, Air Heate Economizer etc.	Capacity= 35 Ton / Working Pressure 45 bar	1 Nos.	Local	
2	--	Feed Water Tank	Capacity = 500 Ton	1 Nos.	Local	

3	**--**	Feed Water pump	Capacity= P# 01: 60 Ton P# 02: 60 Ton/hr	2 Nos.	Local	
4	**--**	Condensate Tank	Capacity = 400 Ton	1 Nos.	Local	
5	**--**	Water Lift Pumps	Capacity= 50 Ton / hr	2 Nos.	Local	
6	**--**	I.D. Fan	Capacity= 2200 m^3/min	1 Nos.		
7	**--**	F.D. Fan		1 Nos.		
POWER HOUSE						
1	**--**	Shinko Steam Turbine Toyodenki Generator (T.G.)	Capacity = 4500 KW, 45	1 Set	Japan	
COOLING TOWERS						
Sr.No.	**Item**	**Description**	**Particulars**	**Quantity**	**Make**	
1	**--**	Cooling Tower comple fitted with Grids & Louvers	Capacity= 1400 m^3 / hr	1 Nos.	Adk Enterprises Lahore, Pakistan	
2	**--**	Injection Pumps (Cooling tower # 01)	Capacity= 800 m^3 / hr	3 Nos.	KSB PUMPS (PAK.)	
3	**--**	Cooling Tower comple fitted with Grids & Lou	Capacity= 2100 m^3 / hr	1Nos.	Adk Enterprises Lahore, Pakistan	
4	**--**	Injection Pumps (Cooling tower # 02 & (	Capacity= 800 m^3 / hr	4 Nos.	KSB PUM (PAK.)	
5	**--**	Cooling tower fans motors		5 Nos.		
WASTE WATER TREATMENT PLANT (Capacity=85000 $Nm^{3/}$ day Biogas)						
1	**--**	Digesters	14000 Tons	7 Nos.	LOCAL	
2	**--**	Feeding Pumps	Capacity= 150m^3 / hr	10 Nos.	KSB PUMPS (PAK.)	
3	**--**	Transfer Pumps (S wash) coupled with Mo	Capacity= 150 m^3 / hr	3 Nos.	KSB PUMPS (PAK.)	
4	**--**	Bio Gas Blower	Blower # 1,2,3: 3000 m^3 /	3 Nos.	Rebuschi, ITAL	
5	**--**	Shifting Pump to Wet L	Capacity 200 Tons/Hr	3 Nos.	KSB PUMPS (PAK.)	

5.12. Supplies

Following supplies will be required for Distillation process.

5.12.1 Water Requirement

The water requirement mainly for the proposed project is for domestic as well as process water. The total quantity of domestic water consumption can be calculated by multiplying per capita average water consumption to total number of employees. By taking the average water consumption70 lpcd, the daily water requirement for 300 persons will be 21m^3/day. Whereas the process water requirement for the unit is 2400 ton/day and 600tons for domestic purpose. This water requirement will be fulfilled by ground water from irrigation canal.

5.12.2 Power Requirement

Power requirement of the project will be fulfilled through In-house Power Generation plant of 4.5MW capacity and also has a standby generator of 1MW capacity. The fuel of boiler is bagasse and biogas produced from waste water treatment plant produces electricity using bio-fuel that not only fulfill the demand of instant unit but also reduce energy load on national grid.

5.12.3 Manpower

During construction phase, 300 workers will be hired including local, skilled and technical staff as well. During operational phase, 250 worker will be hired that include both permanent staff and daily wagers.

5.12.4 Personnel Protective Equipment

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

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

5.13 Management Plans

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

5.13.1 Wastewater Treatment Plant

During processing wastewater generated at rate of 3,000-3,200 tons/day and will be treated through Effluent Treatment Plant (ETP), primary treatment facility (anaerobic treatment, bio-digesters) where organic matters will be converted through anaerobic treatment. In primary treatment, biogas will be produced that will be used as an alternative fuel for steam generation in boilers. After treatment in primary treatment, this liquid waste will be sent to **proposed constructed wetland** for further treatment.

Constructed wetlands systems (CWs) are fully human-made wetlands for wastewater treatment, which apply various technological designs, using natural wetland processes, associated with wetland hydrology, soils, microbes and plants. Thus, CWs are engineered systems that have been designed and constructed to utilize the natural processes involving wetland vegetation, soils, and their associated microbial assemblages to assist in treating wastewater[1].

The proposed constructed wetland is surface water flow type and will be plan to be established at a distance of 20-25 km from the proposed distillery plant. The location of the proposed wetland and distance from proposed distillery plant is given in **Figure 8 & 9**. The wetland will be comprised over an area of 750 Acres. The plants of different species like conofors and sufeda will be plant. The waste water after treatment from ETP will be transferred to wetland by a Pump (capacity 200 tons/h) through closed channels. The layout of wetland is attached as Annexure IV.

[1]https://www.ipccnggip.iges.or.jp/public/wetlands/pdf/Wetlands_separate_files/WS_Chp6_Constructed_Wetlands.pdf

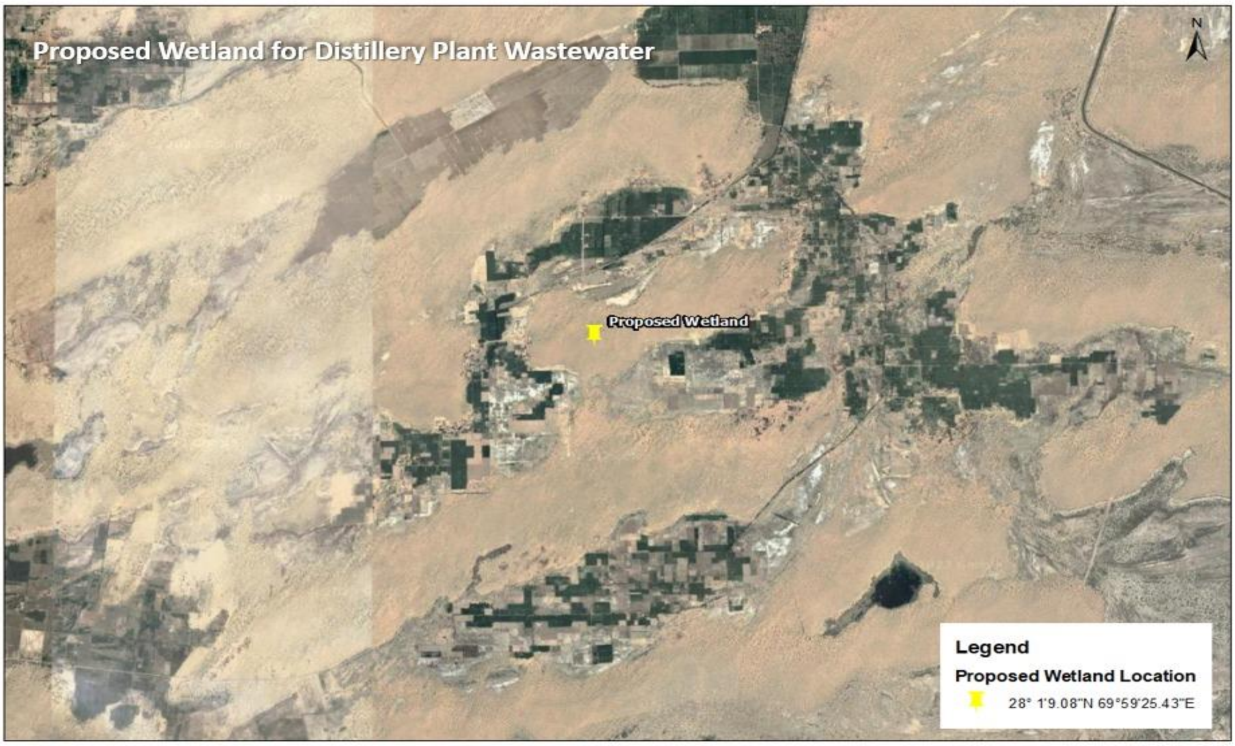

Figure 9: Google Earth Map of proposed Wetland

Figure 10: Distance of proposed wetland from Proposed Distillery Plant

Advantages of Wetland

- Wetlands support rich biodiversity, providing habitats for various species. By incorporating wetlands into water management strategies.
- Wetlands play a crucial role in regulating local climate by mitigating the impacts of extreme weather events and contributing to carbon sequestration. They enhance the resilience of desert ecosystems to climate change.

5.13.2 Air Emissions

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

During operation phase, air emissions will chiefly arise from boiler along with solvent vapor, odor, PM, dust and lint from floor cleaning and from the generators. Cyclones will be installed with Boiler to mitigate its anticipated effects to the environment. Biogas will used as fuel for boilers. The CO_2 gas will be sent to CO_2 Plant, where it will compressed and sent to beverage industry. Air masks, helmets and safety uniforms will be provided to the workers and proper check will be made to check its compliance in the premises. Hence, by adopting proper mitigation measures, air emissions have been controlled.

5.13.3. Solid Waste

Waste generated during construction would include mostly construction material (mainly steel and wood), empty cement bags, excavated earth and general packaging waste. Reusable construction material will be recovered from the waste as much as possible

The solid wastes produced during operational phase will be mud. The mud will be used as fertilizer and sold to contractor. The disposal of non-biodegradable and recyclable matter, such as containers, waste papers, used materials, waste packaging materials, will be carried out as per area practices.

6 DESCRIPTION OF THE ENVIRONMENT

6.1 General

This section describes the baseline conditions, which shows the clear-cut picture of existing environmental resources; physical, ecological, and socio-economic environment of the Project area. Information on these aspects has been derived from field visits to the project area as well as information obtained through visits to the Government departments and other relevant agencies.

The primary data was collected by surveying the project area and its nearby vicinity. The secondary data regarding physical parameters (topography, geology, seismology, hydrology and climatology) was obtained by visiting relevant departments and their official websites. The biological parameters (flora and fauna) were also studied in the project area. The vegetation of project area was studied by preparing a floristic list based on visual observation. The species were recorded with reference to their historical existence in the project area.

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

6.2 BASELINE PHYSICAL ENVIRONMENT

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

6.2.1 Topography and Geography

The district lies between *27°40'-29°16' North latitude and 60°45'-70°01' East longitude*. The riverain area of the district lies close to eastern bank of river Indus and Punjab. Rahim Yar Khan District is bounded on the north by Muzaffargarh District, on the east by Bahawalpur District, on the south by Jaisalmer district (India) and Ghotki District of Sindh province, and on the west by Rajanpur District. The topography of project area is flat. The site selected for project ***"Installation of Distillery Plant of M/s JDW Sugar Mills Limited"*** is located at Mouza Pir Ahmedabad, Kot Sabzal, National Highway, Sadiqabad, Rahim Yar Khan.. The coordinates of the site are; **Latitude 28°11'37"N and Longitude 69°51'20"E.**

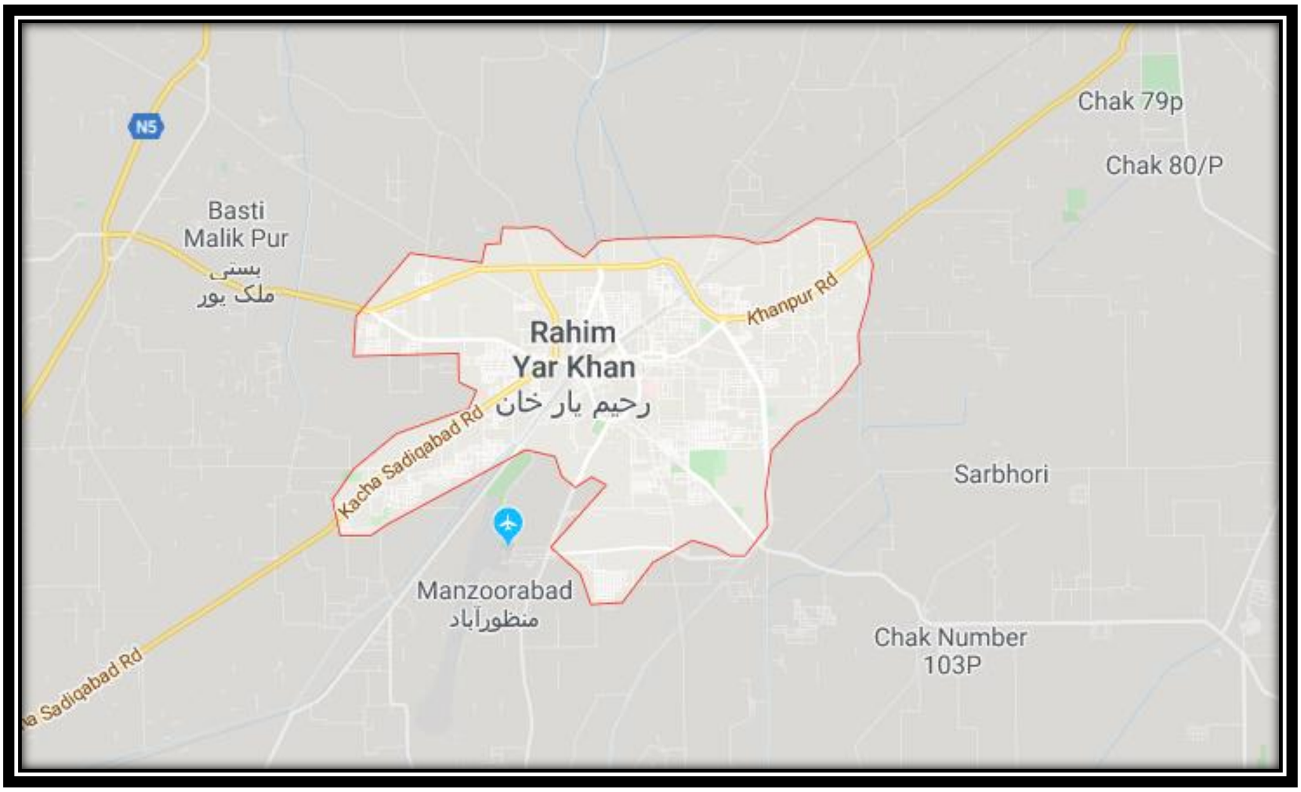

Figure 11: Map of Rahim Yar Khan District

This district is divided into three main physical features: (a) Riverside area, b) canal-irrigated area, and (c) desert area which is called Cholistan. The Riverside area of the district lies close on the southern side of the Indus River mainly falling in the river bed. The canal-irrigated area lies on the south and is separated by main Minchan Bund. The approximate height of the irrigated area is *150 to 200 meters (490 to 655 ft)* above sea level. The third part of the area, called Cholistan, lies in the south of the irrigated tract up to the Indo-Pak border. The surface of the desert consists of a succession of sand dunes rising at places to a height of 150 meters (492 ft) and covered with the vegetation peculiar to sandy tracts.[2]

6.2.2 Demography

At the time of the *2017* census, the district had a population of 4,807,762, of which 2,461,780 were males and 2,345,413 females. Rural population is 3,776,779 while the urban population is 1,030,983. The literacy rate was 46.62%.[3]

[2] https://en.wikipedia.org/wiki/Rahim_Yar_Khan_District
[3] https://historypak.com/rahim-yar-khan/

6.2.3 Seismicity

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

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

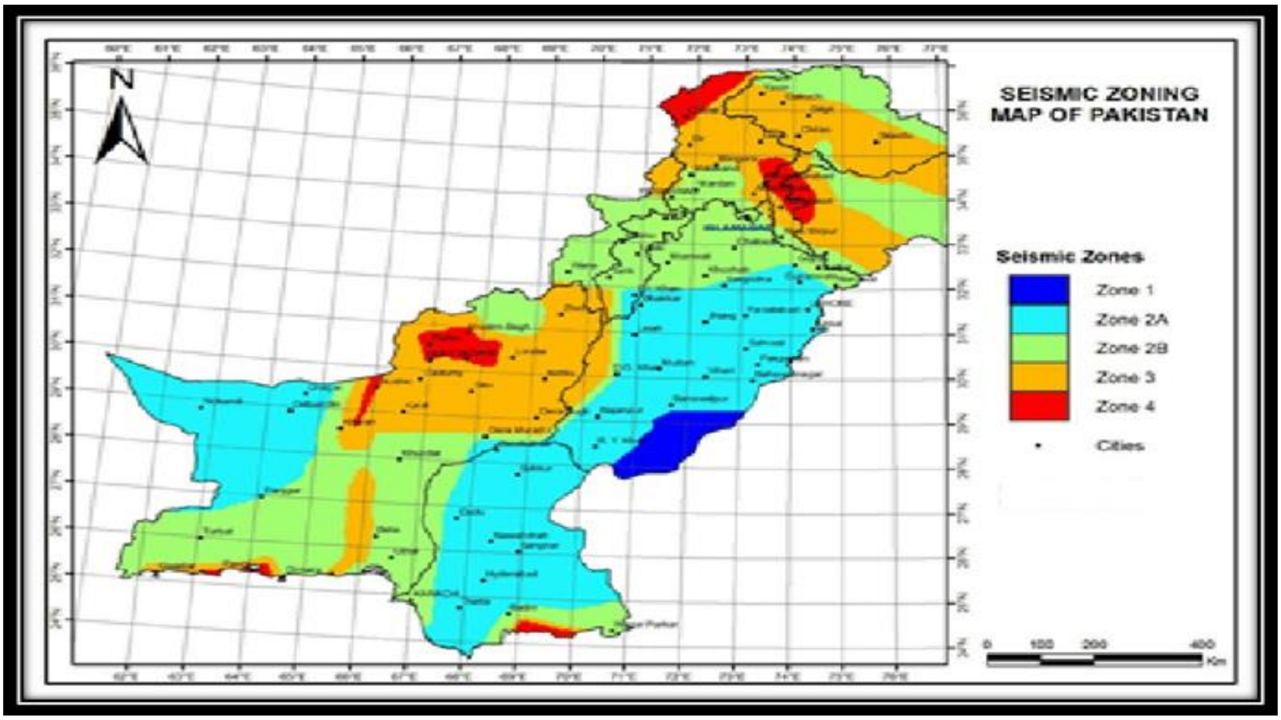

Figure 12: Seismic Zoning of Pakistan

6.2.4 Climate

The climate here is "desert." During the year, there is virtually no rainfall in Rahimyar Khan. As per the Köppen-Geiger classification, the prevailing weather conditions in this region are categorized under BWh. In Rahimyar Khan, the average annual temperature is 26.9 °C | 80.4 °F. Precipitation here is about 174 mm / 6.9 inch per year. Rahim Yar Khan is in the northern hemisphere. Summer begins at the end of June and ends in September. The hottest month is June, where average highs routinely exceed 40°C (104.0 °F). The wettest month is July, with heavy rainfalls and evening thunderstorms with the possibility of cloudbursts. The coolest month is January with dense fog. The city's highest maximum temperature was 48.3°C (118.9 °F) recorded on May 30, 1944 and 48°C (118°F) was recorded on June 9, 2007. The lowest temperature recorded in Rahim Yar Khan is –1°C, recorded on 13 January 2020.

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	12.3	15.4	20.6	26.5	31.1	33.9	31.5	30.7	29.7	25.5	18.9	13.7
Min. Temperature (°C)	5.3	8.4	13.6	18.8	23.4	27.3	26.9	26.3	24.3	18	10.7	6
Max. Temperature (°C)	19.3	22.4	27.7	34.2	38.9	40.6	36.2	35.1	35.1	33	27.1	21.4
Avg. Temperature (°F)	54.1	59.7	69.1	79.7	88.0	93.0	88.7	87.3	85.5	77.9	66.0	56.7
Min. Temperature (°F)	41.5	47.1	56.5	65.8	74.1	81.1	80.4	79.3	75.7	64.4	51.3	42.8
Max. Temperature (°F)	66.7	72.3	81.9	93.6	102.0	105.1	97.2	95.2	95.2	91.4	80.8	70.5
Precipitation / Rainfall (mm)	24	24	37	17	20	36	189	159	73	12	4	12

Figure 13: Temperature and Rate of Precipitation

6.2.5 Surface Water Quality

No surface water body/reservoir is located within 2 km of study area. No impact is being envisaged due to installation of above-said project.

6.3 BASELINE BIOLOGICAL ENVIRONMENT

The biological environment consists of the flora and fauna present at the study as well as project area. There are no endangered or IUCN Red list species reported from the area. The detail of each parameter is given below.

6.3.1 Flora and Fauna

The flora of the district characterizes two major ecological divisions, northern and southern. The botanical life found in the northern half is like that of the rest of the irrigated tracts at central Punjab.

The arid land, referred to as the Cholistan desert, has a lot of wild life including Wild cats, the Chinkara deer, jackals, foxes, badgers, porcupines, squirrels, gerbils, wild rats, poisonous snakes, hog deer etc.

6.4 BASELINE SOCIO-ECONOMIC ENVIRONMENT

This section provides collective information about the existing socio-economic and environmental condition of the project area within the Area of Influence (AOI). The different types of socio-economic aspects were covered such as demographic profile, occupation, education and health facilities. This data helped in identifying major interventions for the development of Environmental Management Plan (EMP). The study also helped to assess the positive or adverse impacts on local community.

This topic provides an overview of the baseline information relating to the socio-economic environment of the project area and the AOI. The socio-economic study gives information about the demographic profile, occupation, education and health facilities in the project area.

6.4.1 Healthcare Facility

Healthcare services are provided to the citizens by hospital. Moreover, there are a number of private clinlic near Project site.

Figure 14: Nearby Healthcare Facilities

6.4.2 Educational Facilities

Following schools are present in project area vicinity; as shown in Figure 15 below;

Figure 15: Nearby schools of Proposed Project Location

6.4.3 Road Access

Project site is accessible through N5-National Highway Road at the distance of 0.66km as shown below in figure 15:

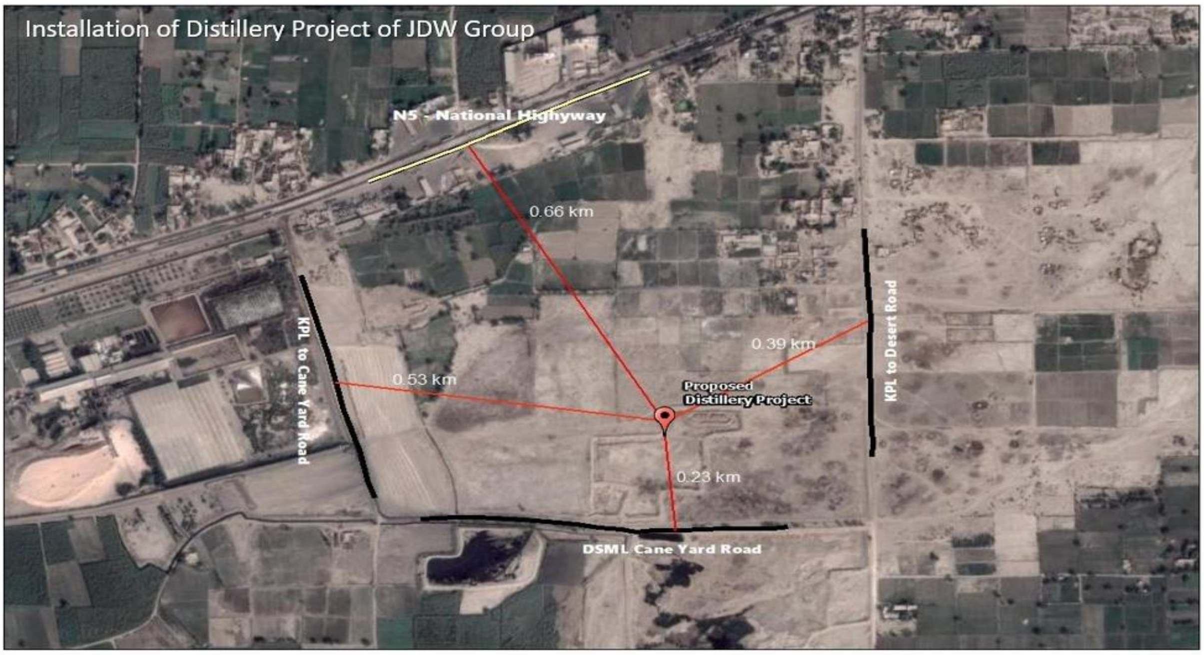

Figure 16: Nearby Road of proposed Project

6.5 LAB REPORTS OF ENVIRONMENTAL ANALYSIS

Solution Environmental & Analytical Laboratory (SEAL) was engaged to carry out environmental monitoring of ambient air quality, ground water quality and noise level in the project area. Laboratory analysis reports of ambient air quality, ambient noise and surface water analysis results are annexed at Annex-V of this EIA Report and the detail information related to the testing results is given below:

6.5.1 Sampling Sites

The sampling was carried out at the project site which is identified to collect samples of water, noise and air for testing according to the testing guidelines of Punjab-EPA.

Table 7: Sampling Sites Details

Sr#	Particulars	Details
1	Parameters of Monitoring	Ambient Noise, Ambient Air and Ground Water Quality
2	Sampling Sites	01 (One)

6.5.2 Ambient Air Quality

In order to determine the air quality of the project area, environmental monitoring was carried out by SEAL being EPA certified Laboratory and having the requisite air sampling device and expertise for collection of samples. The primary air pollutants to be monitored are; Carbon Monoxide (CO), Oxides of Nitrogen (NOx), Sulphur Dioxide (SO_2), Particulate Matter (PM) and Ozone (O_3).

To determine the air quality of the area ambient air monitoring was done on spot (spot sampling) and the results obtained are given below in **Table-8.**

Table 8: Ambient Air Monitoring

S. No	Parameters	Method/ Equipment Used	Unit	Results	PEQS
1.	**Carbon Monoxide (CO)**	40 CFR Part 50, App C (US-EPA)	mg/m^3	2.85 mg/m^3	5 mg/m^3 (8 hours)
2.	**Sulfur Dioxide (SO_2)**	EQSA-0197-114 (US-EPA)	$\mu g/m^3$	46.1 $\mu g/m^3$	120 $\mu g/m^3$
3.	**Oxides of Nitrogen as NO3 & NO2**	40 CFR Part 50, App F (US-EPA)	$\mu g/m^3$	35.05 $\mu g/m^3$	40 $\mu g/m^3$
4.	**Particulate Matter $PM_{2.5}$**	40 CFR Part 50, App J (US-EPA)	$\mu g/m^3$	27.8 $\mu g/m^3$	35 $\mu g/m^3$
5.	**Particulate Matter PM_{10}**	40 CFR Part 50, App J (US-EPA)	$\mu g/m^3$	110.1 $\mu g/m^3$	150 $\mu g/m^3$

6.5.3 Noise

Noise level monitoring or measurement is a process to measure the magnitude of Noise in industries. Prolonged exposure to loud noises (75 dB over eight hours a day for years) can lead to hearing loss. Therefore, noise level should fall under the prescribed Punjab Environmental Quality Standards (PEQS). Noise level measurements had been carried out within the selected site. This analysis showed that values are much below the limit prescribed under the Punjab Environmental Quality Standards (PEQS).

Table 9: Noise Monitoring Results

Measurement Point	Limit values (PEQS)	Noise level in dB(A) Leq	Remarks
Mid-point of Site – Day Time	75dB(A) (Day Time)	53.2 dB(A)	Within Prescribed Limits
Mid-point of Site – Night Time	65dB(A) (Day Time)	45.7 dB(A)	Within Prescribed Limits

6.5.4 Water Resource

Ground water is the principal source of municipal water supply in RYK. Ground water samples were collected from project site. Water samples were tested for physio-chemical parameters (Temperature, pH, TDS, EC, Color, Odour and Taste). The ground water was being used in the study area for domestic purposes. To check the quality of the water in the area ground water was collected and analyzed by ESPAK. Water quality monitoring results of project area are given below in **Table-10.**

Table 10: Groundwater Monitoring Results

	Parameters	Method	Unit	Result	PEQS
1.	**pH**	APHA 4500-H^+ B	mg/l	8.1	6.5-8.5
2.	**Total Dissolved Solids (TDS)**	APHA 2540 C	mg/l	424	1000

3.	**Chloride**	4500-APHA Cl-B	mg/l	65.99	250
4.	**Fluoride**	APHA 4500-F- D	mg/l	0.43	1.5
5.	**Taste**	APHA 2120 B	Object/unobj.	Unobject.	Unobject un
6.	**Odor**	APHA 2120 B	Object/unobj.	Unobject.	Unobject un
7.	**Colour**	APHA 2120 B	TCU	0.79	15
8.	**Nitrates (as NO3-)**	APHA 4500-NO3- E B	mg/l	0.3	50
9.	**Nitrite (as No2-)**	APHA 4500-NO2- E B	mg/l	0.01	3
10.	**Lead**	APHA-Pb B	mg/l	BDL	0.05
11.	**Total Hardness as CaCO3**	APHA 2340 C	mg/l	170.0	500
12.	**Turbidity**	APHA 2130 B	NTU	BDL	5
13.	**Zinc**	APHA 3500-Zn B	mg/l	BDL	5
14.	**Aluminum**	APHA 3111 D	mg/l	BDL	0.2
15.	**Chormium**	APHA 3500-Cr B	mg/l	BDL	0.050
16.	**Cadmium**	APHA 3500-Cd D	mg/l	BDL	0.01
17.	**Copper**	APHA 3500-Cu D	mg/l	BDL	2
18.	**Boron**	APHA 4500-B C	mg/l	0.031	0.300
19.	**Barium**	APHA 3111 B	mg/l	0.045	0.700
20.	**Antimony**	APHA 3114 C	mg/l	0.002	0.020

21.	**Arsenic**	APHA 3114 C	mg/l	0.012	0.050
22.	**Cyanide**	APHA 4500-CN'D	mg/l	BDL	0.05
23.	**Mercury**	APHA 3112	mg/l	BDL	0.001
24.	**Nickel(Ni)**	APHA 3111 B	mg/l	BDL	0.020
25.	**Residual Chlorine**	APHA 4500-Cl2	mg/l	0.08	0.2-0.5
26.	**Total Coliform**	APHA 9222 B	Number/100ml	0	0/100 ml
27.	**Thermo Coliform**	APHA 9222 B	Number/100ml	0	0/100 ml
28.	**E.coli**	APHA 9222 C	Number/100ml	0	0/100 ml

PEQS = Punjab Environmental Quality Standards
BDL (Below Detection Limit)
APHA = American Public Health Association

6.6 SAUITABILITY OF THE SITE

As the site is surrounded by various other industrial activities and no relocation is required for establishment of current project. The site do no fall in environmental sensitive area and all commodities are at a suitable distance from project site as they will not impacted by the construction activities even locals will get more benefits and job opportunities. No replacement, relocation and rehabilitation are required for the development of above-said project.

7 IMPACT ASSESSMENT

7.1 General

This section discusses the potential environmental impact due to Installation of Distillery Plant of M/s JDW Sugar Mills Limited.. The impacts may include; soil contamination, water resources depletion, biological resources disturbance and socio-economic impacts and, where applicable, identifies mitigation measures that will reduce significantly, if not eliminate, its adverse impact. The assessment carried out in this Section is based on potential impacts on overall environmental receptors within the project area.

7.2 Methodologies for Impact Identification

This section discusses the project's potential environmental impact of above-mentioned unit. The adverse impact may occur on; the area's geomorphology, soil, water resources, air resource, biological resources and socio-economic condition and where applicable, identifies mitigation measures that will reduce significantly, if not eliminate, its adverse impact. The assessment carried out in the sub-sections below is based on potential impacts on overall environmental receptors within the project area. Impacts are evaluated on the basis of magnitude, immediacy and sustainability.
The said project will not pose any adverse impact or threat on any component of the environment. The impact assessment criteria are given below along with their impacts:

Table 11: Impact Significance Criteria

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

Table 12: Impact Matrix Checklist for Designing Phase

Environmental Sensitivities	Intensity of Impact						Impact Nature		Impact Significance				
	Low Intensity	Moderate Intensity	High Intensity	Local	National	Regional	Beneficial	Adverse	Insignificant	No Impact	Short Term	Moderate	Long Term
Physical Parameters													
Topography													
Land Acquisitions													
Seismicity													
Biological Parameters													
Land Environment													
Flora													
Fauna													
Social Parameters													
Local Economy													
Social Impacts													

Table 13: Impact Matrix Checklist for Demolition Phase

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

Table 14: Impact Matrix Checklist for Construction Phase

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

Table 15: Impact Matrix Checklist for Operational Phase

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

7.3 Identification of Monitoring Requirements

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

7.4 Methodology for Impact Evaluation

These tools have been used to identify the significance and magnitude of the impact as well as the nature, reversibility and extent:

- An Impact Screening Checklist
- Project Impact Evaluation Matrix

Following is given a brief description of assessment tools:

a. Impact Screening Checklist

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

Table 16: Characteristics of Impacts

Sr#	Environmental Componen	Impact Characteristics												
		Duration		Location		Frequency		Extent		Significance			Reversibility	
		Long	Short	Direct	Indirect	Cont.	Intermittent	Wide	Local	Large	Moderate	Minor	Rev.	Irrev.
Beneficial Impacts														
1	Employment Opportunity	◙		◙		◙			◙		◙		◙	
2	Export of finished goods	◙		◙		◙			◙		◙		◙	
3	Appreciation in Land Value	◙			◙	◙			◙			◙		◙
4	Tree Plantation	◙		◙		◙			◙		◙		◙	
Adverse Impacts														
1	Air Pollution		●	●			●		●			●	●	
2	Wastewater		●	●		●			●			●		●
3	Solid Waste and By-Product	●		●		●			●		●			●
4	Health and Safety		●		●		●		●			●		●
5	Chemical Hazards		●		●	●			●		●			●
6	Physical Hazards		●	●			●		●			●		●
7	Security Risks		●		●		●		●		●		●	

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b. Project Impact Evaluation Matrix

The Project Impact Evaluation Matrix was developed by placing different environmental parameters that are likely to be affected by the proposed project actions, grouped into categories i.e., physical, ecological, socio-economic environment and hazards. For assessment of associated impact risk assessment methodology was used. Moreover, the risk assessment was done on the basis of project phases (planning & designing, construction and operation). A Project Impact Evaluation Matrix is attached as **Table 17** below:

Table 17: Impact Evaluation Matrix

Environmental Parameters	Impact Assessment during Differ Phases	
	Construction	Operational
Planning and Designing		
i. Location	+2p	+2p
ii. Design	+1p	+1p
A: Physical		
1. Land Resources		
i. Soil Erosion and Contamination	-2t	-2t
ii. Transportation	-1t	-1t
iii. Solid Waste and By-Products	-2t	-1p
2. Air Resources		
i. Noise Pollution	-1t	-1t
ii. Air Pollution	-1t	-1t
iii. Dust Emissions	-1t	-1t
3. Water Resources		
i. Ground Water	-1p	-1p
ii. Wastewater	-1p	-1p
B : Ecological		
Flora		
i. Tree Cutting	-1t	+1p
Fauna		
ii. Terrestrial Fauna	NA	NA
C: Socio-Economic		
i. Employment Opportunities	+1t	+3p
ii. Land Value Appreciation	+1t	+2t
iii. Economic Uplift of Study Area	+1p	+3p
D: Hazards		
i. Physical Hazards	-1t	-1p
iii. Health and Safety	-1t	-1p
Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Applicable; t= Temporary; p= Permanent; app= Applicable; 0= Negligible		

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8 SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

8.1 General

This Chapter identifies the potential impacts (positive and adverse) on the physical, biological and socio-economic environment of project area due to the Installation of Distillery Plant of M/s JDW Sugar Mills Limited. It also identifies measures that will help to mitigate the adverse environmental and social impacts as well as it will enhance positive impacts of aforesaid project. Impacts are assessed by analyzing their magnitude and sensitivity, which is a legal requirement as discussed in **Chapter 07**

8.2 Impact and Mitigation Management

Purpose of mitigation is to evade, reduce or balance the expected antagonistic effects in suitable way and to integrate these for devising environmental management strategy or plan. At every stage of project, mitigation plan for all the adverse impacts should be predicted to find out the best alternative. The objectives of mitigation are to:

- Invent of best substitution, better alternatives and ways to reduce the adverse environmental and social impacts in immediate surroundings.
- To improve the environmental and societal payback of project.
- To prevaricate, remedy/reduce and pro-vocative impacts.
- To certify that remaining negative influences are kept within permissible limits.

In this part of the EIA Report, a number of complications including; cleanliness, environmental health and safety, societal and environmental managing and inspection, industrial vulnerability, tools and apparatuses and during operational activities, influx of workers and procurement of land have been deeply elaborated.

8.3 Approaches for Mitigation Measures

Following approaches may be used to mitigate the impacts of the project:

Table 18: Approaches for Mitigation Measures

Avoid: Change of route or site details, to avoid damage important ecological or archaeolog features.
Replace: Regenerate similar habitat of equivalent ecological value in different location.

Reduce: Filters, cyclones, noise barriers, dust, enclosures, visual screening, wildlife corric and changed time of activities to reduce the impact.
Restore: Site restoration at the end of the operational activities.
Compensate: Relocation of displaced communities, facilities for the affected communit financial compensation for the affected individuals, etc.

8.4 Expected Positive Impacts

Following is the expected outcome for construction of above stated project:

a) Increase in Employment Opportunities

Due to construction of aforesaid project, the employment opportunity will be slightly enhanced. During construction phase, 80 workers will be hired from local community include; skilled and un-skilled workers. During operational phase, approximately 200 persons will be required. It will include hiring of technical and non-technical staff. Locals will also have the opportunity to diversify their income by being employed. Hence, there will be an increased employment opportunity for the local people which will have a positive impact on the socio-economic status of the area.

b) Tree Plantation

At the end of said project, trees will be planted in the designated green areas to enhance the aesthetic beauty of the area.

c) Adverse Impacts and Mitigation Measures

This section identifies the potentially significant and in-significant adverse environmental and social impacts anticipated during the operation phase of said unit. Appropriate mitigation and management measures, where applicable, have also been suggested to reduce the severity of anticipated impact up to the extent possible.

8.5 Impacts and Mitigations due to Project Location

During planning and designing phase most of the associated impacts will be associated with the selection of appropriate location and design that would have minimal impact on the environment and society. It will include:

i. Impacts of Location

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

Nature of Impact

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

Mitigation Measures

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

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

It is envisaged that no mitigation measures will required as the said project had been constructed in industrial area and no adverse impacts on its surroundings due to significant distances from all sensitive receptors.

8.6 Impacts and Mitigations due to Design

The design phase of aforesaid project optimized the use of best available technology in order to prevent or minimize potentially significant environmental impacts associated with the project as well as to ensure high level business and environmental performances. In pre-construction/design phase, a management system was provided at design level for the reduction of impacts. Design of said project will adhere to all standards, technical and legal requirements in order to avoid adverse impacts on the socio-environment and human health. Efficient infrastructure will be developed. Procurement of construction materials from approved dealers will be ensured. The technology adopted for the Distillery plant is state of the art technology. The process will be fully closed. This technology is adopted because of the following reasons:

- The process will take place in a fully closed system which will ensure zero emissions from the proposed plant.
- The proposed emergency system will be semi-automatic and it will control through computerized systems which will be connected with smoke alarms.
- Through the selected system high quality of product will be produced.
- The generated wastewater will be treated before final disposal through Wastewater Treatment and it can be reused in nearby agricultural lands.

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

Nature of Impact

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

Mitigation

No additional mitigation measure will be required as state of art technology is being adopted for distillery plant. For the treatment of the generated wastewater, effluent treatment plant will be installed. This generated wastewater will be treated and dispose off.

8.6 Impacts and Mitigation during Construction Phase

Project construction phase will be 01 year whose activities will effect land environment, water, air, noise level, soil quality, socio-economic trend of area, etc. These impacts had been controlled effectively by adopting best management practices.

By the implementation of said project, a positive impact on the socio-economic culture for the people has been observed. The chance for local employment, fabrication, brick masonry, painting and machinery erection works had been increased.

The construction phase of aforesaid project will include activities associated with the site leveling, construction of civil structures, architectural works and building services. The construction phase would bring in immediate but short term changes on various components of environment near the project site. This section explains how aforesaid project will affect different environmental aspects and its mitigation measures to manage the impact. The impacts during construction phase will be temporary and localized. Even though, the measures proposed to minimize such impacts.

i. Impacts of Dust and Exhaust Emissions

Air quality is expected to deteriorate locally mainly due to fugitive dust emission and exhaust gaseous emission from vehicular movement. This will cause short-term but moderate impacts on local environment. Soil erosion may occur in small area and they will be prone to wind erosion. Air pollutants such as; NOx, SOx and CO emissions may be generated from the working of construction machinery on-site which includes; hauling vehicles, loaders, trucks, mixers, etc. This machinery will generate smoke and other potential pollutants in air. This impact is considered to be negative of minor magnitude. The effect due to construction is however, of temporary nature and will have no permanent impact on environment.

Nature of Impact

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

Mitigation

- Dust control measures are need to be taken to control the same; as the area is located in semi-arid zone having dry soil conditions and it is vulnerable to spread during high winds. Following mitigation measures will be adopted to mitigate the anticipated impact:
- Ensure that trucks carrying the raw-material should be covered by tarpaulin to reduce fugitive dust emissions.
- Water spraying/sprinkling should be done on regular basis.
- Ensure that all equipment and vehicles, used during the construction phase, are properly tuned and maintained in good working condition, in order to minimize the exhaust emissions and it will be regulated by concerned authority.
- Ensure that high quality fuel having low sulfur contents will be used in the vehicles engaged in the construction activity.
- Ensure that dust emission generated due to vehicular movement is minimized by restricted speed limit and vehicular movement impacts which will be minimized through good traffic management at site.

- Ensure that dust emission during the construction phase will be minimized by implementing best management practices.

ii. Soil Erosion and Contamination

During constructional activities the chances of soil erosion and contamination may be increased. Soil erosion from construction activities will deteriorate the soil quality. There are low chances of land contamination due to release/spill of lubricants, oil and other materials during the construction period. Erosion may also result from movement of heavy vehicle such as; bulldozers, excavators, trucks and pick-ups. The impact will be short term, localized and can be controlled through immediate appropriate management and mitigation measures. This impact is considered negative of minor magnitude. Hence, the impact is in-significant.

Nature of Impact

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

Mitigations

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

- During construction phase no tree removal is involved however, tree plantation will be done after completion of construction at designated green areas.
- Native and fast growing trees will be planted in the designated green areas.
- Spill prevention and response plan for storage, usage and transfer of fuel should be prepared (if used on site) and implemented.
- Workers should be trained on spill prevention and response plan.
- Maintenance and washing of vehicles as well as equipment will be carried out at designated areas within the facility.
- Any hard surface or tarpaulin should be spread on area to prevent soil contamination.
- Regular inspections should be carried out to detect leakages in construction vehicles and equipment.
- Machinery involved should be maintained properly to avoid leakages.

iii. Socioeconomic Impacts

In project area, no significant changes are envisaged in traditional life style and occupation of local people residing in the nearby communities. The local people are rather benefited due to the provision of job opportunities. No impact is envisaged due to influx of workers as local will be preferred and hired for working. Moreover, health and safety related issues may arise during the construction activities. These impacts are in-significant can be further reduced significantly by adopting best management practices.

Nature of Impact

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

Mitigation Measures

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

- Good relations with local communities will be promoted by encouraging Contractor to provide opportunities for skilled and un-skilled employment to the locals as well as on-job training.
- The contractor should prefer hiring local labor from adjacent community
- The contractor will keep the copy of National Identity Card (CNIC) of his employees and will warn the workers not to involve in any anti-social activities
- At the time of hiring the Contractor has to ensure that workers should be of good repute.
- First aid kits will be available at site.
- Training of workers should be carried out for operating various constructional machinery, safety procedures should be adopted, environmental awareness should be carried out, equip all workers with safety boots, helmets, gloves, protective masks and monitoring of their proper and sustained usage will be carried out. In case of accidents, contractor will provide free medical treatment to the community.
- The Contractor will be responsible for sensitivity towards the local customs and traditions.

8.7 Impacts & Mitigation during Operational Phase

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

i. Impact on Ecology

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

Nature of Impact

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

Mitigation Measures

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

ii. Impact on Air Environment

During operation phase, air emissions will chiefly arise from boiler along with solvent vapor, odor, PM, dust and lint from floor cleaning and from the generators.

Nature of Impact

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

Mitigation Measures

Following mitigation measures will be adopted:

- For dust suppression regular sprinkling of water will be carried out.
- Vehicles used for transportation of raw material as well as finished product and the utility vehicles will be regularly serviced and maintained in order to keep the environmental impact on account of their exhaust emissions to its minimum level.
- Cyclones are installed to control emissions from the boilers for steam generation.
- Generator will be placed in closed space to reduce air emission.
- Biogas will be used as fuel for boiler.
- CO_2 gas will be compressed in CO_2 plant and sold to beverage industry.
- Native tree would be planted along the boundary of project area to keep environment healthy. For removal one tree, 3-5 trees will be planted.

iii. Noise Environment

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

Nature of Impact

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

Mitigation Measures

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

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

iv. Solid Waste Management

The solid waste generated from the process is mainly mud. The ash will be generated from boiler. While recyclable waste sold out to contractor and domestic waste will be handles as per area practices.

Nature of Impact

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

Mitigation

Following mitigations should be adopted to manage generated solid waste:

- Press mud will be sold to farmers to use as bio-fertilizer or cow feed.
- Ash generated during combustion in boiler will be sold to brick manufacturers or will be mixed with mud cakes and used in fields.

- The recyclable waste including plastic, packaging material sold out to contractor.
- Waste bins will be placed in the facility at the strategic position for the collection of solid waste.
- The installed bins will be covered in order to reduce the chances of the disease vector production.
- Regular training will be given to the workers dealing with the waste management it will include; identification, segregation and management of waste.
-

v. Water consumption and wastewater production

Water requirement will be fulfilled by taking water from irrigation canal. Process Water requirement will be approx.3000 tons/day. Domestic and process wastewater will be treated through Effluent Treatment Plant before disposal.

Nature of Impact

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

Mitigation

Following mitigations should be adopted to manage generated wastewater:

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

vi. Occupational Health and Safety

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

- Fermentation
- Slips, trips and falls on ground
- Unguarded machinery

- Hazards associated with the fire and explosion
- Noise and vibration
- Electrical burns and electric shock

Nature of Impact

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

Mitigation

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

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

vii. Security Risks

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

Nature of Impact

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

Mitigation Measures

Following mitigation measures will be adopted:

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

viii. Emergency Response

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

Nature of Impact

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

Mitigation

Following mitigation measure will be adopted:

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

ix. Socioeconomic Impact

It is envisaged that adverse impacts associated with the said project includes; local community will be disturbed due to increase in the traffic load (i.e., vehicles carrying raw material and final products), wastewater management, soil pollution, etc. The intensity of impacts occurred due to the establishment of aforesaid project will be quite low. The commencement of aforesaid project will have a beneficial impact on the surrounding community such as; increase in employment opportunity, increase in wages of the local area employees, increase in revenue generation, provision of social welfare funds of employees and appreciation of land value. Moreover, the said project is located within designated and approved Industrial Estate and residential areas are at safe distance from project site.

Nature of Impact

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

Mitigation Measure

No mitigation measures will be required.

x. Health & Safety of Workers

Improper handling of machinery and unskilled labor may cause various health issues such as; work place incident and physical hazards, etc. To ensure the safety of workers these impacts need to be managed effectively.

Nature of Impact

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

Mitigation

Following mitigations should be adopted to improve the health and safety:

- Regular inspection and maintenance of the plant will be carried out to eliminate the risk and associated hazards of any unfortunate incident.
- Workers will be trained on the regular basis regarding personal safety, disaster management physical and chemical hazards.
- Operators operating the plant should be fully trained and equipped.
- Training regarding HSE should be given on the regular basis.
- Workers will be given PPEs such as; helmets, mask, ear-plugs/muffs, safety boots, etc.
- It should be strictly enforced to wear PPEs while working.
- Incidents should be reported directly to the concerned authority.
- Floor surfaces shall be maintained and cleaned on regular basis.
- Floor should be kept clean and free of oil spills, other slippery fluids or materials and obstructions.
- The effective use of hearing-protection devices shall be ensured.
- Protective measures and emergency rescue procedures should be followed strictly.

- Only authorized persons shall be allowed in the processing and industrial premises.
- Unloading of the raw-material and loads of the final products should be controlled, supervised, slow and smooth.

8.8 Potential Environmental Enhancement Measures

The said project will be result in following benefits:

- Direct and indirect employment opportunities,
- Gains in the local and national economy,
- Industrial development in region
- Tree plantation

Tree plantation along boundary of project will act as environmental enhancement measure. Indigenous and ornamental tree species will be grown on all open spaces and along boundary of project.

The environmental budget allocated for tree plantation, management & disposal of solid waste and wastewater and Environmental monitoring is approximately **PKR 3.4 Billion** approx.

9 ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM

9.1 General

This EIA Report provides the Environmental Management and Monitoring Plan (EMMP) for implementation of aforesaid project in order to keep anticipated environmental and social impacts in check by adopting suggested mitigation measures and monitoring of the certain parameters moreover, to ensure the compliance of EMMP. As per the environmental legislation in Pakistan, the EMMP for the operations phase, along with other documents, is to be submitted in EPA, Punjab to obtain confirmation for compliance and Environmental Approval/NOC for project execution. Even after implementation of the suggested mitigation measures, the impact may remain significant and require regular environmental monitoring. This section also underlines the monitoring framework for operation phase to check compliance of EMMP and to take timely actions for correction in case any negligence & accidence of significant criteria, requirements or goals is found.

9.2 Objectives of Environmental Management Program

The primary objectives of the EMP are to:

- Facilitate the implementation of the mitigation measures identified in this EIA Study.
- Define the responsibilities of the project proponent and contractor and provide a means of effective communication of environmental issues between them.
- Identify monitoring parameters in order to 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.

9.3 Components of EMMP

Components of EMP are as follows

- Management plan
- Monitoring Plan
- Communication and documentation
- Institutional capacity
- Environmental training

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9.4 Proposed Mitigation actions

It lists all the mitigation measures identified in the EIA and the associated environmental or social aspect in line during construction and operational phase with the administrative framework involving all the responsible implementing authorities who are required to take the planned actions/measures and monitor it accordingly. It enhances project benefits by reducing its impacts and making it environment friendly.

Table 19: Environmental Management Plan

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

Movement a fueling vehicles	Physical Aesthetical	Soil &W Contamination to Fuel Leaka &Spillage, Emissions, No &Vibration	Moderate/ at the sit	• Periodic maintenance and inspection vehicles will be done • Vehicles with leaks will be operated after maintenance. • Vehicles should not be washed or serviced in the field.	Contractor	Proponent
Transportati of construct material	Bio-physical	Dust and Particul Emissions, Noise Generation Safety and Health Effects	Moderate/ Adjacent area	• Excessive use of horns will be avoide • PPE's will be provided to workers • Covering of trucks carrying transport material • Night time driving of project vehicles will be limited where possible • Low speed limit will be maintained o the section of the access road that is adjacent to the community and site. • The fence surrounding the site will be put in on during the construction to prevent access to the construction site	Contractor	Proponent
Ecological Resource	Physical, aesthetical biological	Flora & Fauna	Moderate/ adjacent area	• More tree plantation will be done at designated green areas.	Project Manager	Project Manager
OPERATION PHASE						
Wastewater management	Physical/ social	Degradation of water quality	Moderate/local	• Wastewater generated from process activities will be treated through ETP and then transferred to constructed wetlands.	Environment officer	Proponent
Air quality management	Physical	Dust and PM	Moderate/adjacent areas	• Cyclones are installed at boilers to control air emissions • Biogas will be used as fuel in boilers	Environment officer	Proponent

				• CO2 will be compressed and sold to beverage industry. • Control measures have taken to contr the matriculate matter. • Regular monitoring of ambient air an maintenance of machinery should be done on regular interval.		
Noise generation	Physical, soc biological	Psychological hearing problems	Moderate/local	▪ There will be ban on the use of horn i the area. ▪ Proponent has planned a proper plantation plan which will also act as barrier for noise.	Environment officer	Proponent
Solid Waste Generation	Physical, Biological, Social	Soil Contaminatic effecting GW Quality, vectors productio odor, Health, Welfare	Severe/ local and global	• Mud will be sold to local farmers and used as fertilizer. • The solid waste from the project shou not be allowed to pile up. • Solid waste should be disposed off properly as per local practice • Recyclable waste should be dispose c through certified contractor •	Environment officer	Proponent
Health and Safety	Biological	Injury may happen while handling machine	Severe	• Personal Protective equipments (PPE i.e. surgical masks, gloves and sanitiz will be provided to the workers • Warning signs will be placed in local language. • Fire drills training has been carried to avoid hazards • Proper maintenance of machines has been carried out • First aid kits and other necessary	HSE Manager	Proponent

				equipment will be kept available at si • Dange larve eradication has been don • COVID-19 SOP's must be implemen		

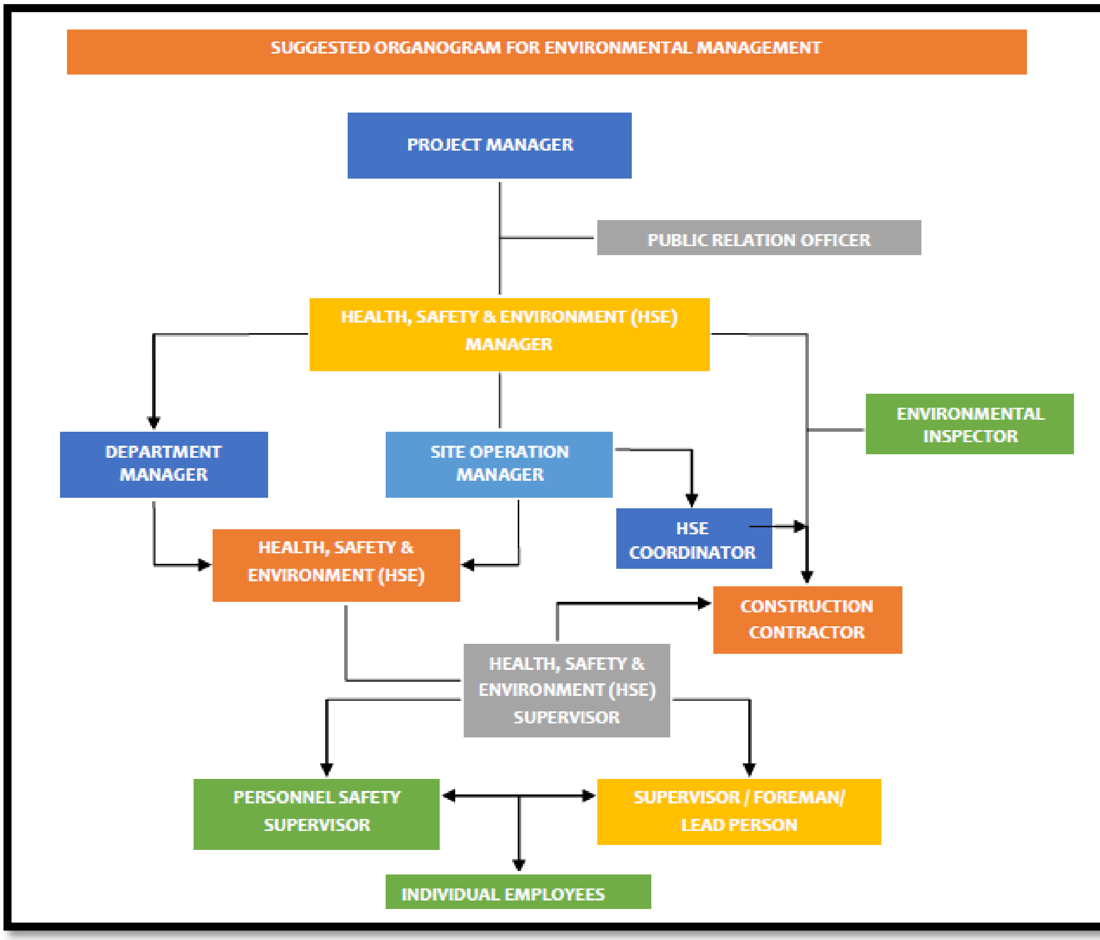
9.5 Schedule for Implementation of Environmental Budget

The allocated environmental budget is **PKR 3.4 Billion approx.** The allocated environmental budget will be spent on landscape/green zone management, Environmental Monitoring, solid waste management and wastewater management. The proponent will plant indigenous and ornamental plants to increase the aesthetic value of the area. Thus, the project is also a source of employment for locals and would help in economic development activities of the area.

9.6 Environmental Management Team along with their roles and responsibilities

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

Table 20: Proposed Hierarchy of Monitoring team



9.7 Proposed Monitoring program

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

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

Following environmental record should be maintained:

- Periodic inspection reports of the site
- Incident record of all moderate and major incidents and accidents. The record will include:
  - ✓ Location or limit of the accident
  - ✓ Estimated quantity or the amount of injury
  - ✓ Nature of injury or loss (temporary or permanent)
  - ✓ Restoration measures
  - ✓ Photographs
- Description of any damage to vegetation, water resource, or community asset.
- Corrective measures taken, if any
- Waste Tracking Register that will hold records of waste generated during the construction period. This will include quantities of waste disposed, recycled, or reused.
- Records of water consumption with use wise breakdown
- Survey reports, in particular, the following:
  - ✓ Vehicle and equipment noise.
  - ✓ Ambient noise survey reports.
  - ✓ Ambient level of PM
  - ✓ Vendor data—all vendors disturbed by the project and compensation paid Public infrastructure: Record of all damages and repair work undertaken.
  - ✓ Employment

- ✓ Total number of unskilled, semi-skilled, and skilled jobs offered during Construction.
- ✓ Name and domicile of the employed staff.
- ✓ Project and Community Interface
- ✓ Record of community complains and the measures taken to address them.
- ✓ Number of meetings held in various communities and data of persons who attended.

9.8 Proposed EMP reporting and reviewing procedures

During construction, EMP reporting and reviewing will be done by the contractor/HSE department. Following steps will be taken during reporting and reviewing of EMP.

1. **Data recording and maintenance:** All forms that will be used for monitoring will be numbered and a tracking system will be developed for each. In this manner, it will be ensured that all forms are returned to the office, be filled, unused or discarded.
2. **Storage of information:** A database will be prepared for collecting the information during the project. The database may include information on training programs, non-compliance, corrective actions and results of monitoring. It will also contain photographic records of project site.
3. **Site Monitoring:** Quarterly Monitoring will be done by monitoring team as per SMART Rules and will be reviewed by concerned. The parameters that will be measured are given below.

Sampling	Parameters
Ambient Air Quality	SO2, NO, O3, NO2, CO, PM2.5, PM10
Drinking Water	TDS, pH, Color, Taste, Odor, Tota Hardness as CaCO3, Turbidity.
Noise Level	Area Mid-Point

Afterward, monitoring reports will be submitted in EPA as per condition of Environmental Approval of construction phase.

Furthermore, recorded data will be reviewed by supervisory so that it can be further improved if required.

9.9 Environmental Training

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

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

Table 21: Training Schedule

Target Audience	Trainers	Contents	Schedule
Selected Management Staff	Subject Expert	Key finding of mitigation measure	After every five months
All Personnel	HSE Officer	Mitigation measures especially firefighting, safety, health and environment (emissions & discharges) etc.	Monthly
Technical Staff	HSE Officer	Waste disposal, vehicle movement restriction and other mitigation measures	After every three month
Other Staff	HSE Officer	Waste disposal, resource conservation and other mitigation workers	Monthly

10 PUBLIC CONSULTATION AND PUBLIC DISCLOSURE

10.1 General

Public consultation refers to the process by which the concerns of various stakeholders and local community who have a plausible stake in the environmental management & associated impacts of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. According to the Review of IEE and EIA Review Regulations, 2022 public consultation is mandatory for any socio-environmental study for the commencement of any project.

Impact assessment survey and public consultation sessions held with different stakeholder groups that may be impacted by this project commencement were carried out. The consultation process was carried out in accordance with the guidelines laid by EPA, Punjab. The objectives of this process were to:

- Share information with stakeholders on proposed project establishment.
- Access the impacts on the physical, biological and socio-economic environment.
- Understand stakeholder concerns regarding various aspects of the project commencement.
- Note valuable suggestions of local stakeholders to improve the proposed project design.
- Understand the perceptions, assessment of social impacts and concerns of the affected people/communities of the project area.
- Find out the awareness level and situation of acceptability to identify any issues for the implementation of the proposed project.
- Invite people to express their views about the positive/negative impacts on their lifestyles and environment.
- Disclose information about contact offices/officers for any complaints/queries.

It is envisaged, there will be no social impact being foreseen due to the commencement of aforesaid project at aforesaid location. This EIA Report includes all the comments, which were taken into account during the social survey and preparing the definitive development concept for the installation and operation of proposed project. Public consultation questionnaires and consultation with Govt official are attached as **Annex-VI** of this EIA Report.

10.2 Consultation with Government officials

Consultation regarding Installation of Distillery Plant was carried out with Government official. Concerns of locals, Environmental Practitioners & experts and Government EPA departments were discussed and asked to consider them while construction of above-said project. Locals will be preferred for employment after providing proper training. Mitigations measures mentioned in EMP will be truly implemented.

10.3 The responsible authority

Overall responsibility for implementation of EMP will be 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 conditions.

Table 22: Consultations with Govt Officials

Sr. No	Name and Contact number	Designation and Department	Concerns/Remarks
1.	**Muhammad Ammas** **0308-1891805**	Sub Divisional Officer Irrigation Department	This project should be implemented however, guidelines of Government should be adhered as per law and policy in true spirit. The project be implemented under joint supervision of this department.

2	**Malik Muhammad Farooq** **0308-6537639**	Director Labour welfare Labour and Human Resource Department	The instant project of distillery plant as per laws and policy of Government is appreciable as the same will add and create employment opportunity for local are residents. However, the labour laws are to be implemented in letter n sprit in a bit to ensure health and safety of employed welfare is to safe guard their economic instants. It will also add to economic well-being of area.

10.4 Consultation with Affected and wider community

In addition, to the use of direct methods to evince the response of the various stakeholders in targeted population residing in study area was ascertained by conducting a sample survey, through specially formatted questionnaires (attached in the Annex-VI of this EIA Report). Questions posed to the public were related to creation of possible impacts, adverse impacts and beneficial impacts, including; employment opportunities, income generation activities, change in living standards and provision of the basic amenity.

Personal views of the respondents on the establishment of above-mentioned unit by JDW Sugar Mills Limited, possible disturbance to the residents near the AOI and infringement of their privacy were also recorded. The various rounds of public meetings and consultations were arranged in project and study area. The objectives of consultation with the affected persons are given in the table below:

- Disclose the proponent plan for the construction/operation of said facility.
- To share information on the design and specifications of project works.
- To analyze the expected impact on the socio-economic environment.
- To understand their concerns regarding various aspects of project commencement.

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10.5 Views, Concerns and Suggestions of Various Stakeholders

The major socio-economic concerns and problems of the affected persons of various communities have been given in tabulated form below (**Table 23**) along with their main concerns and remarks. Community showed a lot of concerns; a few are being mentioned here:

- Removal of shrubs and trees should be avoided to the extent possible in the case of clearance green zones should be established within the facility.
- Indigenous tress around the facility should be planted to control air pollution and as the compensation of removed trees.
- The project will become the source of income for local to earn their livelihood easily and honorably, so locals should be preferred.
- The area will inhabit and will be used for the beneficial purposes.
- For the solid waste management and waste disposal, proper disposal techniques should be adopted.
- Water spraying/sprinkling should be done on the regular basis for dust suppression.
- Employment opportunities will be generated and locals should be hired on the priority basis.
- The air pollution is one of the major impact from which Punjab is being affected at the large scale. So, ambient air quality should be monitored regularly and air pollution expected to generate from the operation should be mitigated beforehand.
- Good relations with the local communities will be promoted by encouraging Contractor to provide opportunities for skilled and unskilled employment to the locals as well as on-job training.
- Noise generated activities should be carried out during day hours.

The views and the concerns of the local communities, direct and indirect stakeholders has been complied and are presented in the tabular form below:

Table 23: Views and Concerns of Stakeholders

Sr.	Respondents	CNIC/Contact No.	Concerns
i.	**M. Jameel**	0304-5489560	During the survey in the study area following concerns of the local community were noted: □ Locals should be preferred for the job opportunities. □ Wastewater should be treated prior to final disposal. □ Noisy activities should be confined. □ Solid waste should be managed effectively b adopting the standard practices of the area. □ Cleanliness of the area should be ensured. □ An effective EMMP should be designed and enforced with true spirit. □ Health of the workers should be ensured. □ Plantation should be carried out at extensive scale. □Workers should be hired from local communi □ Indigenous tress around the facility should be planted to control air pollution.
ii. ii	**Abdul Razzaq**	0304-6867747	
iii.	**Jama Khan**	0315-1676276	
iv.	**Naveed Ahmed**	0301-6581191	
v.	**Abdul Hameed**	0304-1823211	
vi.	**M. Farooq**	0305-6826774	
vii	**M. Aslam**	0303-7664283	
viii	**Khursheed Ahmed**	0305-6798792	
ix.	**M. Nawab**	0325-3128515	
x.	**Rafaqat Irshad**	31304-7978874-5	During the survey in the study area following concerns of the local community were noted:
xi.	**Jamil Ahmed**	31304-2061233-5	

xii	**Haji Hazoor Uddin**	31304-5883166-7	☐ Locals should be preferred for the job opportunities. ☐ Wastewater should be treated prior to final disposal. ☐ Noisy activities should be confined. ☐ Solid waste should be managed effectively b adopting the standard practices of the area. ☐ Cleanliness of the area should be ensured. ☐ An effective EMMP should be designed and enforced with true spirit. ☐ Health of the workers should be ensured. ☐ Plantation should be carried out at extensive scale. ☐Workers should be hired from local communi ☐ Indigenous tress around the facility should be planted to control air pollution. s
xiii	**Riaz Ahmed**	31304-1398841-1	
xiv	**Ejaz Ali**	45404-0380414-5	
xv	**Khawand Bakht**	31304-8653311-1	
xvi	**Syed Esan Shab**	31304-5940961-7	
xvi	**M. Amjad**	31304-8715233-1	
xvii	**Sadam Hussain**	31304-8205906-7	
xix	**Nazir Ahmed**	31304-1822488-1	
xx	**M. Amir**	31304-1899421-7	

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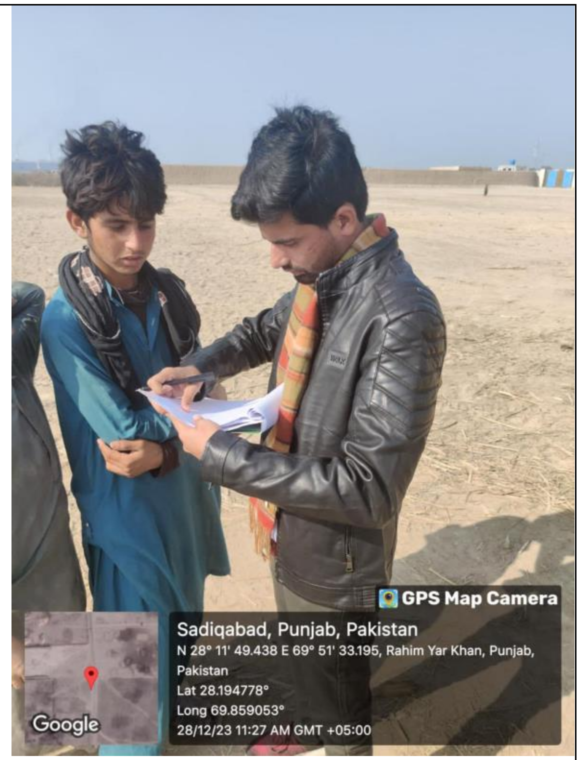
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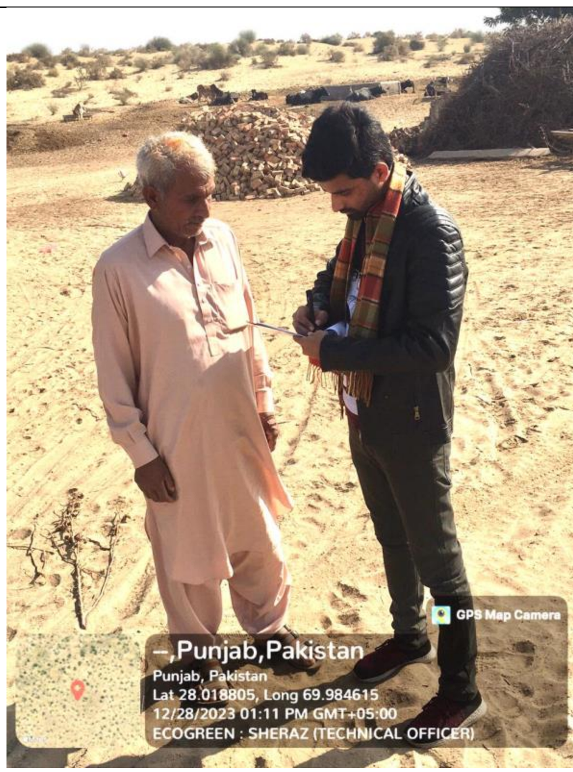
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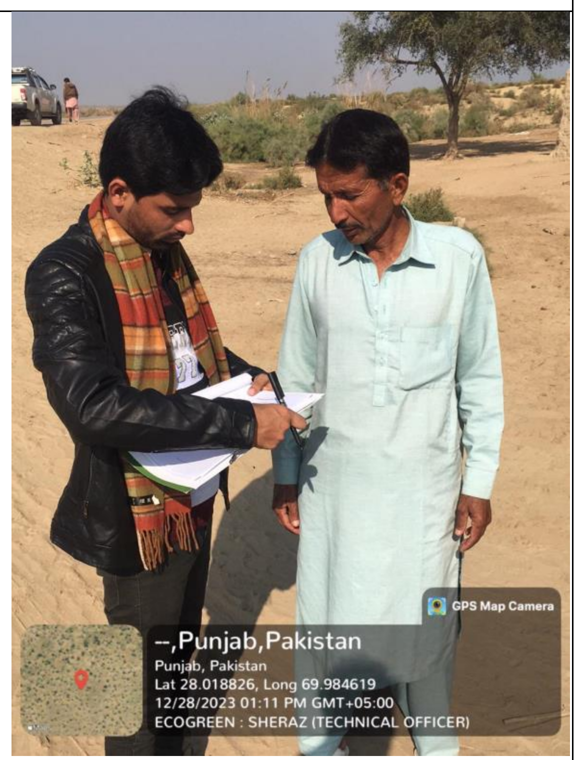
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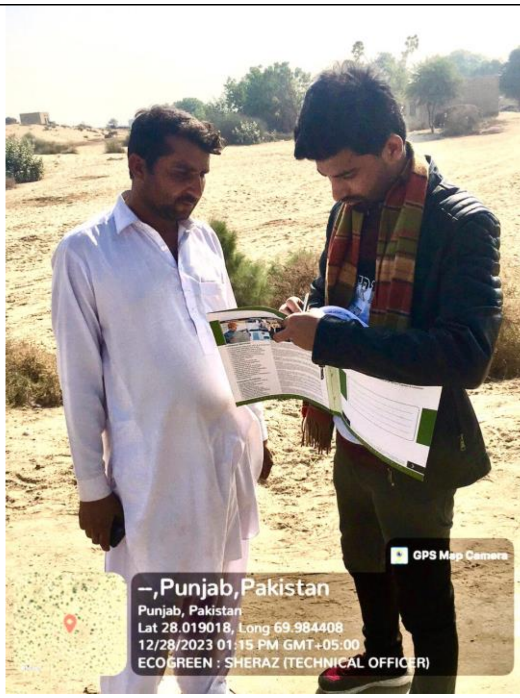

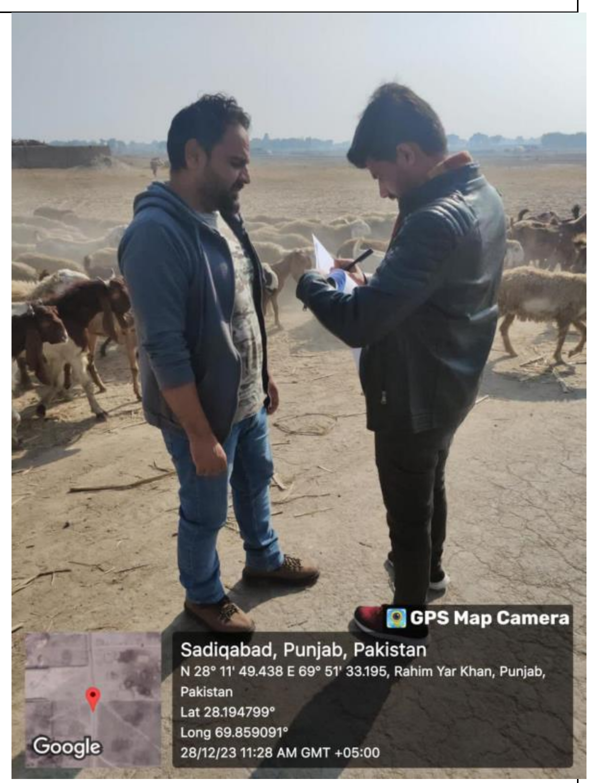

Figure 17: Consultation with Local People of Area

LIST OF ANNEXURES

Proponent CNIC

ANNEX-I

حکومت پاکستان

قومی شناختی کارڈ

34501-1986185-3

[illegible] : [illegible] علی

[illegible] علی [illegible]

تاریخ پیدائش : 06/05/1976

عثمان یوسف مبین

دستخط حامل کارڈ

دستخط رجسٹرار جنرل

شناختی نمبر : 34501-1986185-3 خاندان نمبر : 51N25R

موجودہ پتہ : مکان نمبر 88-B، محلہ پاسکو ہاؤسنگ سوسائٹی کینال روڈ، لاہور

مستقل پتہ : [illegible] والہ، ڈاکخانہ [illegible]، تحصیل و ضلع نارووال

تاریخ اجراء : 01/07/2015 تاریخ تنسیخ : 01/07/2025

گمشدہ کارڈ ملنے پر قریبی لیٹر بکس میں ڈال دیں

ANNEX-II

Allotment Letter/ Property Document

تحصیل صادق آباد ضلع رحیم یار خان سال 2019-20 کتاب نمبر ورق نمبر 60 / 1

١	٢	٣ (الف)	٣ (ج)	٣ (د)	٣ (ہ)	٣ (و)	٤	٥	٦	٧	٨	٩	١٠
نمبر کھیوٹ مالک	نمبر کھتونی کاشتکار	کوائف مالک: نام مالک معہ نام والد / خاوند قوم اور سکونت	نوعیت حقوق مالک راہن مرتہن	مشترکہ کھاتہ میں مخصوص حصہ	مخصوص رقبہ مطابق حصہ	زرعی پاس بک نمبر	نام کاشتکار معہ احوال	نمبر خسرہ معہ نام اگر کوئی ہو	رقبہ و قسم زمین کھیوٹ وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	وسائل آبپاشی معہ نام چاہ اراجباہ وغیرہ	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	مطالبہ معہ تفصیلات مالیہ وجبوب	کیفیت معہ 1- نام نمبردار (اگر کوئی ہو) 2- شرح مالیہ زمین
11	13	جے ڈی ڈبلیو شوگر ملز لمیٹڈ	مالک	76160/76160	14-0-0		باقی بدستور	قطعات 2	سالم کھاتہ 14-0-0 چودہ کنال				بحوالہ انتقال نمبر 790 آڑرہن منفصلہ مورخہ 31/01/2011 کھاتہ بذرقبہ تعدادی 14-0-0 93/140 بقدر 9-6-0 بجانب فیصل بنک بحق زبیر الحسن ولد غلام حسین بعوض مبلغ 6960000 تک اڑرہن ہو چکا ہے
		٣(ب) قومی شناختی کارڈ نمبر		حصہ مستقل 1/1	رقبہ مستقل 14-0-0								
		میزان		1/1	14-0-0								
							میزان کھیوٹ	قطعات 2	14-0-0 چودہ کنال	قسم زمین نہری 14-0-0			

نقل مطابق اصل ہے نام درخواست کنندہ محمد اسلم ولد غلام شبیر

فرد برائے ذاتی ریکارڈ قوم جندیر

شناختی کارڈ نمبر 3130377031087

نام اجراء کنندہ

تاریخ فرد پرنٹنگ 12/01/2024 12:01:39

تاریخ فرد اجراء 12/01/2024 12:23:15

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اراضی ریکارڈ سنٹر صادق آباد

فرد فیس 1,550

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سکین کریں

حال یرا احمد آباد　طرف/پتی عدد　تحصیل صادق آباد　ضلع رحیم یار خان　سال 2019-20　کتاب نمبر　ورق نمبر 60 / 2

۱	۲	۳ (الف)	۳ (ب)	۳ (ج)	۳ (د)	۳ (ہ)	۴	۵	۶	۷	۸	۹	۱۰
نمبر کھیوٹ	نمبر کھتونی کاشتکار	کوائف مالک: نام مالک معہ نام والد/خاوند قوم اور سکونت	نوعیت حقوق مالک راہن مرتہن	مشترکہ کھاتہ میں مخصوص حصہ	مخصوص رقبہ مطابق حصہ	زرعی پاس بک نمبر	نام کاشتکار معہ احوال	نمبر خسرہ معہ نام اگر کوئی ہو	رقبہ وقسم زمین کھیت وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	وسائل آبپاشی معہ نام چاہ/راجباہ وغیرہ	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	مطالبہ معہ تفصیلات مالیہ و حبوب	کیفیت معہ 1 - نام نمبردار (اگر کوئی ہو) 2 - شرح مالیہ زمین
3	3 تا 4	جے ذی ڈبلیو شوگر ملز لمیٹڈ	مالک	677552/866864	124-11-0		باقی بدستور	قطعات 32	سالم کھاتہ 159-7-0 ایک سوانسٹھ کنال سات مرلہ				بحوالہ انتقال نمبر 805 اگر رہن منفسلہ مورخہ 26/02/2011 کھاتہ بقدر رقبہ تعدادی 159-7-0 399/3187 بقدر 19-19-0 بحق زرعی ترقیاتی بینک بحق محمد اکرم ولد کبر بعوض مبلغ 0 تک آزر رہن ہو چکا ہے نمبر انتقال 674 قسم انتقال مخول اراضی نمبر انتقال 676 قسم انتقال مخول اجرا فرد برائے ضمانت مورخہ 01/04/2023
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		باقی بدستور		696/3187									
		میزان		2491/3187	124-11-0								
							میزان کھیوٹ	قطعات	159-7-0	قسم زمین			

ہم درخواست کنندہ: محمد اسلم ولد غلام شبیر　قوم جٹ ذیر　شناختی کارڈ نمبر 3130377031087　برائے ذاتی ریکارڈ　مطابق اصل ہے

نام اجراء کنندہ: غلام فاطمہ دختر ہدایت اللہ
تاریخ فرد پرنٹنگ: 12/01/2024 13:01:39
تاریخ فرد اجراء: 12/01/2024 12:23:15

کمپیوٹرائزڈ نقل۔ دستخط کی ضرورت نہ ہے۔
اراضی ریکارڈ سنٹر صادق آباد
فرد فیس 1,550
ٹوکن نمبر 18

فرد آئی ڈی 0-00-00-034-00-00-00-0021085350
تاریخ ٹوکن اجراء 12/01/2024 11:56:35

[illegible] | طرف / پتی [illegible] | تحصیل صادق آباد | ضلع رحیم یار خان | سال 2019-20 | کتاب نمبر | ورق نمبر 60 / 63

۱	۲	۳ (الف)	۳ (ج)	۳ (د)	۳ (ہ)	۳ (و)	۴	۵	۶	۷	۸	۹	۱۰
نمبر کھیوٹ مالک	نمبر کھتونی کاشتکار	کوائف مالک: نام مالک معہ نام والد / خاوند قوم اور سکونت	نوعیت حقوق مالک راہن مرتہن	مشترکہ کھاتہ میں مخصوص حصہ	مخصوص رقبہ مطابق حصہ	زرعی پاس بک نمبر	نام کاشتکار معہ احوال	نمبر خسرہ معہ نام اگر کوئی ہو	رقبہ وقسم زمین کھیوٹ وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	وسائل آبپاشی معہ نام چاہ راجباہ وغیرہ	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	مطالبہ معہ تفصیلات مالیہ و حبوب	کیفیت معہ 1 - نام نمبردار (اگر کوئی ہو) 2 - شرح مالیہ زمین
186 مذکور	281 تا 282 مذکور									0-10-0 غیر ممکن رقبہ 1-6-0 کل نہری 7-6-0 نہری 734-9-0			

فرد آئی ڈی 0-00-00-034-00-00-00-0021085350

کمپیوٹرائزڈ نقل۔ دستخط کی ضرورت نہیں ہے۔
اراضی ریکارڈ سنٹر صادق آباد

فرد فیس 1,550

ٹوکن نمبر 18

تاریخ ٹوکن اجراء 12/01/2024 11:56:35

نام درخواست کنندہ غلام فاطمہ دختر ہدایت اللہ

تاریخ فرد پرنٹنگ 12/01/2024 13:01:39

تاریخ فرد اجراء 12/01/2024 12:23:15

نقل مطابق اصل ہے۔ نام درخواست کنندہ محمد اسلم ولد غلام قمبر

شناختی کارڈ نمبر 313037703108?

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سکین کریں۔

موضع ویراحمد آباد | طرف/پتی مدرد | تحصیل صادق آباد | ضلع رحیم یار خان | سال 2019-20 | کتاب نمبر | ورق نمبر 60 / 54

۱	۲	۳ (الف)	۳ (ب)	۳ (ج)	۳ (د)	۳ (ہ)	۴	۵	۶	۷	۸	۹	۱۰
نمبر کھیوٹ	نمبر کھتونی کاشتکار	کوائف مالک۔					نام کاشتکار معہ احوال	نمبر خسرہ معہ نام اگر کوئی ہو	رقبہ وقسم زمین کھیوٹ وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	وسائل آبپاشی معہ نام چاہ اراجباہ وغیرہ	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	مطالبہ معہ تفصیلات مالیہ وجبوب	کیفیت معہ 1- نام نمبردار (اگر کوئی ہو) 2- شرح مالیہ زمین
		نام مالک معہ نام والد/خاوند قوم اور سکونت	نوعیت حقوق مالک راہن مرتہن	مشترکہ کھاتہ میں مخصوص حصہ	مخصوص رقبہ مطابق حصہ	زرعی پاس بک نمبر							

نمبر کھیوٹ	مربع نمبر	خسرہ نمبران	خسرہ ویلیویشن	پیمائش	جگہ
11	453/14	4, 8	1,400,730	فی ایکڑ	آف روڈ
121	452/15	20, 24, 25	1,400,730	فی ایکڑ	آف روڈ
121	453/11	16, 17, 18, 19, 22, 23, 24, 25	1,400,730	فی ایکڑ	آف روڈ
121	453/12	1, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 2, 20, 21, 22, 23, 24, 25, 3, 4, 5, 6, 7, 8, 9	1,400,730	فی ایکڑ	آف روڈ
121	453/15	16, 17الف	1,400,730	فی ایکڑ	آف روڈ
121	453/16	1ج, 20, 21, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24, 4, 5, 6, 7, 8, 9	1,400,730	فی ایکڑ	آف روڈ
121	453/8	25الف	1,400,730	فی ایکڑ	آف روڈ
121	454/13	1, 10, 11, 12, 13, 18, 19, 2, 20, 21, 22, 23, 3	1,400,730	فی ایکڑ	آف روڈ
122	452/16	25	1,400,730	فی ایکڑ	آف روڈ
122	453/13	5, 6, 7	1,400,730	فی ایکڑ	آف روڈ

رمطابق اصل ہے نام درخواست کنندہ محمد اسلم ولد غلام شبیر

برائے ذاتی ریکارڈ قوم جنڈیر

شناختی کارڈ نمبر 3130377031087

نام اجراء کنندہ غلام فاطمہ دختر ہدایت اللہ

تاریخ فرد پرنٹ 12/01/2024 13:01:39

تاریخ فرد اجراء 12/01/2024 12:23:15

کمپیوٹرائزڈ نقل۔ دستخط کی ضرورت نہ ہے۔

اراضی ریکارڈ سنٹر صادق آباد

فرد فیس 1,550

ٹوکن نمبر 18

فرد آئی ڈی 0-00-00-034-00-00-00-0021085350

تاریخ ٹوکن اجراء 12/01/2024 11:56:35

موضع یزمان آباد　　　　طرف / پتی　　عدد　　　　تحصیل　صادق آباد　　　　ضلع　رحیم یار خان　　　　سال　2019-20　کتاب نمبر　　ورق نمبر　60 / 55

۱	۲	۳ (الف)	۳ (ب)	۳ (ج)	۳ (د)	۳ (ہ)	۳ (و)	۴	۵	۶	۷	۸	۹	۱۰
نمبر کھیوٹ مالک	نمبر کھتونی کاشتکار	کوائف مالک: نام مالک معہ نام والد / خاوند قوم اور سکونت	نوعیت حقوق مالک و ابن مرتہن	مشترکہ کھاتہ میں مخصوص حصہ	مخصوص رقبہ مطابق حصہ	زرعی پاس بک نمبر		نام کاشتکار معہ احوال	نمبر خسرہ معہ نام اگر کوئی ہو	رقبہ وقسم زمین کھیت وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	وسائل آبپاشی معہ نام چاہ / راجباہ وغیرہ	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	مطالبہ معہ تفصیلات مالیہ و حبوب	کیفیت معہ 1 - نام نمبردار (اگر کوئی ہو) 2 - شرح مالیہ زمین

نمبر کھیوٹ	مربع نمبر	خسرہ نمبرات	خسرہ ویلیویشن	پیمائش	جگہ
122	453/14	19	1,400,730	فی ایکڑ	آف روڈ
122	453/15	14	1,400,730	فی ایکڑ	آف روڈ
122	472/4	19, 21, 22	1,400,730	فی ایکڑ	آف روڈ
122	473/1	1, 10, 11, 12, 2, 3, 9	1,400,730	فی ایکڑ	آف روڈ
129	453/16	1الف, 2, 3	1,400,730	فی ایکڑ	آف روڈ
129	471/5	11	1,400,730	فی ایکڑ	آف روڈ
141	453/16	16 الف	1,400,730	فی ایکڑ	آف روڈ
141	454/13	14, 15, 16, 17, 24, 25, 4, 5, 6, 7, 8, 9	1,400,730	فی ایکڑ	آف روڈ
141	454/16	25	1,400,730	فی ایکڑ	آف روڈ
143	453/13	19الف, 23, 24, 25, 3, 9, 11, 12, 14, 15, 16, 17, 18	1,400,730	فی ایکڑ	آف روڈ
143	453/14	2	1,400,730	فی ایکڑ	آف روڈ

نقل مطابق اصل ہے　　نام درخواست کنندہ　محمد اسلم ولد غلام شبیر

فرد برائے ذاتی ریکارڈ　　قوم　جٹ

شناختی کارڈ نمبر　3130377031087

نام اجراء کنندہ　غلام فاطمہ دختر ہدایت اللہ

تاریخ فرد پرنٹنگ　12/01/2024 13:01:39

تاریخ فرد اجراء　12/01/2024 12:23:15

کمپیوٹرائزڈ نقل۔ دستخط کی ضرورت نہ ہے۔

اراضی ریکارڈ سنٹر　صادق آباد

فرد فیس　1,550

ٹوکن نمبر　18　　تاریخ ٹوکن اجراء　12/01/2024 11:56:35

فرد آئی ڈی　0-00-00-034-00-00-00-0021085350

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نقل رجسٹر حقداران زمین (مکمل میعادی)

سکین کریں۔

موضع: پیر احمد آباد | طرف/پتی: ندارد | تحصیل: صادق آباد | ضلع: رحیم یار خان | سال: 2019-20 | کتاب نمبر | ورق نمبر: 60 / 56

۱	۲	۳ (الف)	۳ (ب)	۳ (ج)	۳ (د)	۳ (ہ)	۳ (و)	۴	۵	۶	۷	۸	۹	۱۰
نمبر کھیوٹ	نمبر کھتونی کاشتکار	کوائف مالک: نام مالک معہ نام والد/خاوند قوم اور سکونت	نوعیت حقوق مالک راہن مرتہن	مشترکہ کھاتہ میں مخصوص حصہ	مخصوص رقبہ مطابق حصہ	زرعی پاس بک نمبر		نام کاشتکار معہ احوال	نمبر خسرہ معہ نام اگر کوئی ہو	رقبہ و قسم زمین کھیوٹ وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	وسائل آبپاشی معہ نام چاہ/اجاڑہ وغیرہ	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	مطالبہ معہ تفصیلات مالیہ و حبوب	کیفیت معہ 1- نام نمبردار (اگر کوئی ہو) 2- شرح مالیہ زمین

نمبر کھیوٹ	مربع نمبر	خسرہ نمبران	خسرہ ویلیویشن	پیمائش	بگہ
143	473/1	20	1,400,730	فی ایکڑ	آف روڈ
15	453/11	6الف، 7الف، 8الف، 9، 15، 14، 13، 12	1,400,730	فی ایکڑ	آف روڈ
15	453/15	10, 11, 12, 13, 15, 19, 4, 6, 9	1,400,730	فی ایکڑ	آف روڈ
15	472/4	15	1,400,730	فی ایکڑ	آف روڈ
15	472/8	10الف	1,400,730	فی ایکڑ	آف روڈ
186	472/12	15الف، 16، 17، 18، 19، 20، 21، 22، 23، 24، 25	1,400,730	فی ایکڑ	آف روڈ
186	472/12	11الف، 12، 13الف، 14الف	2,661,380	فی ایکڑ	مین روڈ
186	472/4	13, 14	1,400,730	فی ایکڑ	آف روڈ
186	472/4	13	2,661,380	فی ایکڑ	مین روڈ
186	472/8	15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25	1,400,730	فی ایکڑ	آف روڈ
186	472/8	12ب، 13، 13الف، 14، 12	2,661,380	فی ایکڑ	مین روڈ

نقل مطابق اصل ہے۔ نام درخواست کنندہ: محمد اسلم ولد غلام شبیر

برائے ذاتی ریکارڈ۔ قوم: چنڑ

شناختی کارڈ نمبر: 3130377031087

نام اجراء کنندہ: غلام فاطمہ دختر ہدایت اللہ

تاریخ فرد پرنٹنگ: 12/01/2024 13:01:39

تاریخ فرد اجراء: 12/01/2024 12:23:15

کمپیوٹرائزڈ نقل۔ دستخط کی ضرورت نہ ہے۔

اراضی ریکارڈ سنٹر صادق آباد

فرد آئی ڈی: 0-00-00-034-00-00-00-0021085350

فرد فیس: 1,550

ٹوکن نمبر: 18

تاریخ ٹوکن اجراء: 12/01/2024 11:56:35

موضع پیر احمد آباد ‏ طرف لرتی عدد ‏ تحصیل صادق آباد ‏ ضلع رحیم یار خان ‏ سال 2019-20 ‏ کتاب نمبر ورق نمبر 60 / 57

۱	۲	۳ (الف)	۳ (ب)	۳ (ج)	۳ (د)	۳ (ہ)	۴	۵	۶	۷	۸	۹	۱۰
نمبر کھیوٹ مالک	نمبر کھتونی کاشتکار	کوائف مالک: نام مالک معہ نام والد/خاوند قوم اور سکونت	نوعیت حقوق مالک راہن مرتہن	مشترکہ کھاتہ میں مخصوص حصہ	مخصوص رقبہ مطابق حصہ	زرعی پاس بک نمبر	نام کاشتکار معہ احوال	نمبر خسرہ معہ نام اگر کوئی ہو	رقبہ و قسم زمین کھیت وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	وسائل آبپاشی معہ نام چاہ/راجباہ وغیرہ	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	مطالبہ معہ تفصیلات مالیہ و محصول	کیفیت معہ 1 - نام نمبردار (اگر کوئی ہو) 2 - شرح مالیہ زمین

نمبر کھیوٹ	مربع نمبر	خسرہ نمبران	خسرہ ویلیویشن	پیمائش	ٹیکس
186	473/10	1, 15, 18, 19, 2, 20, 21, 22, 23, 3, 4, 5	1,400,730	فی ایکڑ	آف روڈ
186	473/13	21الف	1,400,730	فی ایکڑ	آف روڈ
186	473/2	15, 16, 17, 21, 24, 25	1,400,730	فی ایکڑ	آف روڈ
186	473/3	12, 13, 14, 15, 3, 4, 5, 6, 7, 8	1,400,730	فی ایکڑ	آف روڈ
186	473/5	1, 10, 13, 14, 15, 16, 17, 18, 2, 22, 23, 24, 25, 3, 4, 5, 6, 7, 8, 9	1,400,730	فی ایکڑ	آف روڈ
186	473/6	1, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 2, 20, 21, 22, 23, 24, 25, 3, 4, 5, 6, 7, 8, 9	1,400,730	فی ایکڑ	آف روڈ
186	473/7	1, 10, 11, 12, 2, 9	1,400,730	فی ایکڑ	آف روڈ
186	473/9	1, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 2, 20, 21, 22, 23, 24, 25, 3, 4, 5, 6, 7, 8, 9	1,400,730	فی ایکڑ	آف روڈ
19	453/15	18الف, 19الف, 21, 22, 23	1,400,730	فی ایکڑ	آف روڈ

نقل مطابق اصل ہے ‏ بمطابق درخواست کنندہ ‏ محمد اسلم ولد غلام قنبر

فرد برائے ذاتی ریکارڈ ‏ قوم جٹ

شناختی کارڈ نمبر 3130377031087

نام اجراء کنندہ ‏ غلام فاطمہ دختر ہدایت اللہ

تاریخ فرد پرنٹنگ 12/01/2024 13 01.39

تاریخ فرد اجراء 12/01/2024 12:23:15

کمپیوٹرائزڈ نقل۔ دستخط کی ضرورت نہ ہے۔

اراضی ریکارڈ سنٹر صادق آباد

فرد فیس 1,550

فرد آئی ڈی 0-00-00-034-00-00-00-0021065350

ٹوکن نمبر 12/01/2024 11:56:35

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موضع ویراحمد آباد — طرف/پتی مدرو — تحصیل صادق آباد — ضلع رحیم یار خان — سال 2019-20 — کتاب نمبر — ورق نمبر 60 / 58

۱	۲	۳ (الف)	۳ (ج)	۳ (د)	۳ (ہ)	۳ (و)	۴	۵	۶	۷	۸	۹	۱۰
نمبر کھیوٹ مالک	نمبر کھتونی کاشتکار	کوائف مالک: نام مالک معہ نام والد/خاوند قوم اور سکونت	نوعیت حقوق مالک راہن مرتہن	مشترکہ کھاتہ میں مخصوص حصہ	مخصوص رقبہ مطابق حصہ	زرعی پاس بک نمبر	نام کاشتکار معہ احوال	نمبر خسرہ معہ نام اگر کوئی ہو	رقبہ وقسم زمین کھیوٹ وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	وسائل آبپاشی معہ نام چاہ/ اجاہ وغیرہ	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	مطالبہ معہ تفصیلات مالیہ وجبوب	کیفیت معہ 1- نام نمبردار (اگر کوئی ہو) 2- شرح مالیہ زمین

نمبر کھیوٹ	مربع نمبر	خسرہ نمبران	خسرہ ویلیوایشن	پیمائش	جگہ
19	453/16	1	1,400,730	فی ایکڑ	آف روڈ
193	453/14	14, 15, 6, 7	1,400,730	فی ایکڑ	آف روڈ
193	473/2	8غربی, 9, 10, 11, 12, 13, 18, 19, 20	1,400,730	فی ایکڑ	آف روڈ
209	453/14	5	1,400,730	فی ایکڑ	آف روڈ
209	472/11	21ج	1,400,730	فی ایکڑ	آف روڈ
209	472/12	10	1,400,730	فی ایکڑ	آف روڈ
209	472/12	1	2,661,380	فی ایکڑ	مین روڈ
209	472/8	11الف, 6, 7	1,400,730	فی ایکڑ	آف روڈ
209	473/1	21, 22, 23	1,400,730	فی ایکڑ	آف روڈ
209	473/2	8شمالی, 1, 14, 2, 3, 4, 5, 6, 7	1,400,730	فی ایکڑ	آف روڈ
209	473/5	19الف, 21	1,400,730	فی ایکڑ	آف روڈ

مطابق ہے — نام درخواست کنندہ: محمد اسلم ولد غلام شبیر — قوم: جٹ — شناختی کارڈ نمبر: 3130377031087

نام اجراء کنندہ: غلام فاطمہ دختر ہدایت اللہ

تاریخ فرد پرنٹنگ: 12/01/2024 13:01:39

تاریخ فرد اجراء: 12/01/2024 12:23:15

کمپیوٹرائزڈ نقل۔ دستخط کی ضرورت نہ ہے۔

اراضی ریکارڈ سنٹر صادق آباد

فرد فیس: 1,550

ٹوکن نمبر: 18

فرد آئی ڈی: 0-00-00-034-00-00-00-0021085350

تاریخ ٹوکن اجراء: 12/01/2024 11:56:35

موضع ... | طرف/پتی ... | تحصیل صادق آباد | ضلع رحیم یار خان | سال 2019-20 | کتاب نمبر | ورق نمبر 60 / 59

۱	۲	۳ (الف)	۳ (ج)	۳ (د)	۳ (ہ)	۳ (و)	۴	۵	۶	۷	۸	۹	۱۰
نمبر کھیوٹ مالک	نمبر کھتونی کاشتکار	کوائف مالک: نام مالک معہ نام والد/خاوند قوم اور سکونت	نوعیت حقوق مالک راہن مرتہن	مشترکہ کھاتہ میں مخصوص حصہ	مخصوص رقبہ مطابق حصہ	زرعی پاس بک نمبر	نام کاشتکار معہ احوال	نمبر خسرہ معہ نام اگر کوئی ہو	رقبہ و قسم زمین کھیت وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	وسائل آبپاشی معہ نام چاہ/اجباہ وغیرہ	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	مطالبہ معہ تفصیلات مالیہ و محبوب	کیفیت معہ 1 - نام نمبردار (اگر کوئی ہو) 2 - شرح مالیہ زمین

نمبر کھیوٹ	مربع نمبر	خسرہ نمبران	خسرہ ویلیویشن	پیمائش	جگہ
23	453/14	16, 17, 24, 25	1,400,730	فی ایکڑ	آف روڈ
23	453/15	15الف, 5الف, 6الف	1,400,730	فی ایکڑ	آف روڈ
23	473/2	22, 23	1,400,730	فی ایکڑ	آف روڈ
23	473/3	1, 10, 11, 2, 9	1,400,730	فی ایکڑ	آف روڈ
27	453/15	8الف	1,400,730	فی ایکڑ	آف روڈ
27	473/1	15ب	1,400,730	فی ایکڑ	آف روڈ
27	473/5	22الف	1,400,730	فی ایکڑ	آف روڈ
3	453/10	25	1,400,730	فی ایکڑ	آف روڈ
3	453/11	4, 5, 6, 7, 8	1,400,730	فی ایکڑ	آف روڈ
3	453/14	13, 18, 20, 21, 22, 23, 8الف, 24ب	1,400,730	فی ایکڑ	آف روڈ
3	453/15	1, 16, 17, 18, 2, 3, 5, 7, 8	1,400,730	فی ایکڑ	آف روڈ

نقل مطابق اصل ہے۔ بنام درخواست کنندہ: محمد اسلم ولد غلام شبیر

فرد برائے ذاتی ریکارڈ | قوم: چنڑ | شناختی کارڈ نمبر: 3130377031087

نام اجراء کنندہ: غلام فاطمہ دختر ہدایت اللہ

تاریخ فرد پرنٹنگ: 12/01/2024 13:01:39

تاریخ فرد اجراء: 12/01/2024 12:23:15

کمپیوٹرائزڈ نقل۔ دستخط کی ضرورت نہ ہے۔

اراضی ریکارڈ سنٹر صادق آباد

فرد فیس: 1,550

ٹوکن نمبر: 18

فرد آئی ڈی: 0-00-00-034-00-00-00-0021085350

تاریخ ٹوکن اجراء: 12/01/2024 11:56:35

موضع پیر محمد آباد — طرف لزیٹ ۱۸۵ — تحصیل صادق آباد — ضلع رحیم یار خان — سال 2019-20 — کتاب نمبر — ورق نمبر 60 / 60

۱۰	۹	۸	۷	۶	۵	۴	۳ (و)	۳ (د)	۳ (ر)	۳ (ج)	۳ (الف)	۲	۱
کیفیت معہ 1 - نام نمبردار (اگر کوئی ہو) 2 - شرح مالیہ زمین	مطالبہ معہ تفصیلات مالیہ و محبوب	لگان جو کاشتکار ادا کرتا ہے شرح اور مطالبہ	وسائل آبپاشی معہ نام چاہ اجارہ وغیرہ	رقبہ و قسم زمین کھیوٹ وار اور میزان کھتونی کاشتکار و کھیوٹ مالک	نمبر خسرہ معہ نام اگر کوئی ہو	نام کاشتکار معہ احوال	کوائف مالک: زرعی پاس بک نمبر	مخصوص رقبہ مطابق حصہ	مشترکہ کھاتہ میں مخصوص حصہ	نوعیت حقوق مالک راہن مرتہن	نام مالک معہ نام والد / خاوند قوم اور سکونت	نمبر کھتونی کاشتکار	نمبر کھیوٹ

نمبر کھیوٹ	مربع نمبر	خسرہ نمبران	خسرہ ویلیوایشن	پیمائش	جگہ
3	472/11	10الف، 11، 8ج	2,661,380	فی ایکڑ	مین روڈ
3	472/7	25	1,400,730	فی ایکڑ	آف روڈ
3	472/7	24الف	2,661,380	فی ایکڑ	مین روڈ
3	472/8	3ج، 5، 10	1,400,730	فی ایکڑ	آف روڈ
3	473/5	11	1,400,730	فی ایکڑ	آف روڈ
6	453/14	2الف	1,400,730	فی ایکڑ	آف روڈ

میزان کل رقبہ منتقلہ 782-4-231 سات سو بیاسی کنال چار مرلہ دو سو اکتیس فٹ

کل کھیوٹ خسرہ ویلیوایشن 139,084,949.00

Land Record Management … Arazi Record Center Service Center

مطابق اصل ہے — باہم تصدیق کنندہ — محمد اسلم ولد غلام شبیر — قوم جٹ — برائے فائل ریکارڈ — شناختی کارڈ نمبر 3130377031087

نام اجراء کنندہ — تاریخ و وقت تصدیق 12/01/2024 13:01:39 — تاریخ فرد اجراء 12/01/2024 12:23:15

کمپیوٹرائزڈ نقل۔ دستخط کی ضرورت نہ ہے۔ — اراضی ریکارڈ سنٹر صادق آباد

فرد آئی ڈی 0-00-00-034-00-00-00-0021085350

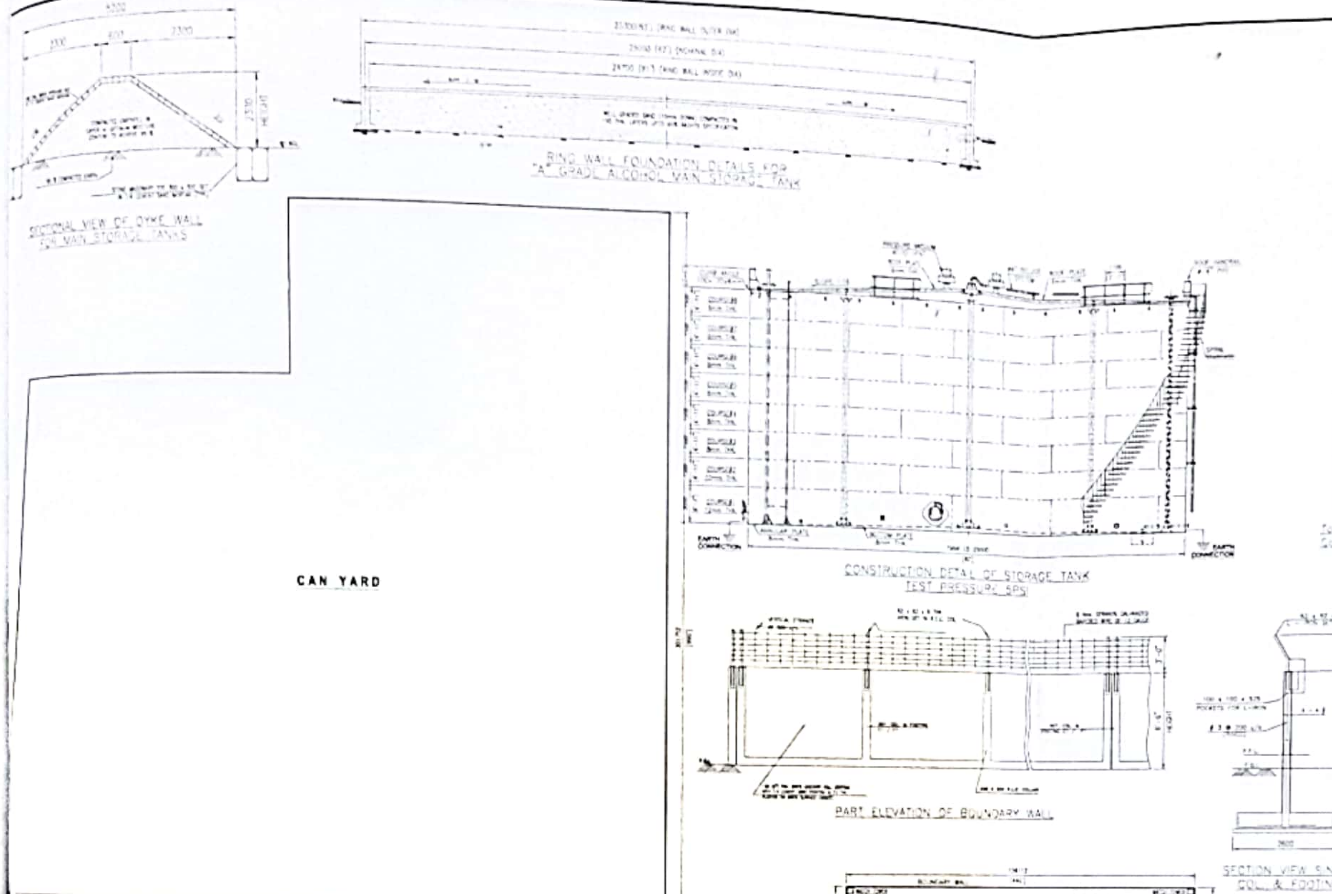
فرد فیس 1,550

ٹوکن نمبر 18

تاریخ ٹوکن اجراء 12/01/2024 11:56:35

Site Layout Plan

ANNEX-III



TANK SCHEDULE FOR MAIN STORAGE TANKS (OP)

S.NO	TANK#	TANK DESCRIPTION	NATURE OF CHEMICAL	DIA x HT (M) (FT)	TOTAL CAPACITY (LTRS)	TOTAL CAPACITY US GALLONS	WORKING CAPACITY AFTER 5% LOSS (LTRS)	ABOVE GROUND OR UNDER GROUND	VENT PROVIDED SIZE
1-2	R-802 A/B	"A" GRADE ALCOHOL 96.2% MAIN STORAGE TANK	DANGEROUS PETROLEUM FLASH POINT 61 F	[illegible]	[illegible]	[illegible]	[illegible]	ABOVE GROUND	[illegible]
3	R-902 A	FUEL GRADE ALCOHOL 99.9% MAIN STORAGE TANK	DANGEROUS PETROLEUM FLASH POINT 61 F	[illegible]	[illegible]	[illegible]	[illegible]	ABOVE GROUND	[illegible]
4	R-804 A	"B" GRADE ALCOHOL 94% MAIN STORAGE TANK	DANGEROUS PETROLEUM FLASH POINT 61 F	[illegible]	[illegible]	[illegible]	[illegible]	ABOVE GROUND	8"
5	R-806 A	DENATURED ALCOHOL 94% MAIN STORAGE TANK	DANGEROUS PETROLEUM FLASH POINT 61 F	[illegible]	[illegible]	[illegible]	[illegible]	ABOVE GROUND	8"
				TOTAL	[illegible]	5,448,808	19,594,688		

TANK SCHEDULE FOR PROCESS TANKS (OP)

S.NO	TANK#	TANK DESCRIPTION	NATURE OF CHEMICAL	DIA x HT (M) (FT)	TOTAL CAPACITY (LTRS)	TOTAL CAPACITY US GALLONS	WORKING CAPACITY AFTER 5% LOSS (LTRS)	ABOVE GROUND OR UNDER GROUND	VENT PROVIDED SIZE
6-7	R-801-A/B	"A" GRADE PROCESS TANK	DANGEROUS PETROLEUM FLASH POINT 61 F	[illegible]	[illegible]	[illegible]	[illegible]	ABOVE GROUND	8"
8-9	R-803-A/B	"B" GRADE PROCESS TANK	DANGEROUS PETROLEUM FLASH POINT 61 F	[illegible]	[illegible]	[illegible]	[illegible]	ABOVE GROUND	[illegible]
10-11	R-911-A/B	FUEL GRADE PROCESS TANKS	DANGEROUS PETROLEUM FLASH POINT 61 F	[illegible]	[illegible]	[illegible]	[illegible]	ABOVE GROUND	8"
				TOTAL	1,346,720	355,728	1,279,384		

TANK SCHEDULE FOR WASTE WATER/SLUDGE TANKS & MOLASSES TANKS (OP)

S.NO	TANK#	TANK DESCRIPTION	NATURE OF CHEMICAL	DIA x HT (M) (FT)	TOTAL CAPACITY (TONS)	TOTAL CAPACITY (LTRS)	WORKING CAPACITY AFTER 5% LOSS (LTRS)	ABOVE GROUND OR UNDER GROUND	VENT PROVIDED SIZE
1-9	D-2010-2090	WASTE WATER / SLUDGE TANKS	WASTE WATER/SLUDGE TANKS FLASH POINT ABOVE 200 F	[illegible]	[illegible]	[illegible]	[illegible]	ABOVE GROUND	8"
1-3	R-300-A TO R-300-D	MOLASSES STORAGE TANKS	MOLASSES STORAGE TANKS FLASH POINT ABOVE 200 F	[illegible]	[illegible]	[illegible]	[illegible]	ABOVE GROUND	8"

Total Area Distillery = 33.52 Acrs (1622349 sq.ft)
Covered Area Distillery= 40 x 100 meter (43059.84 sq.ft)

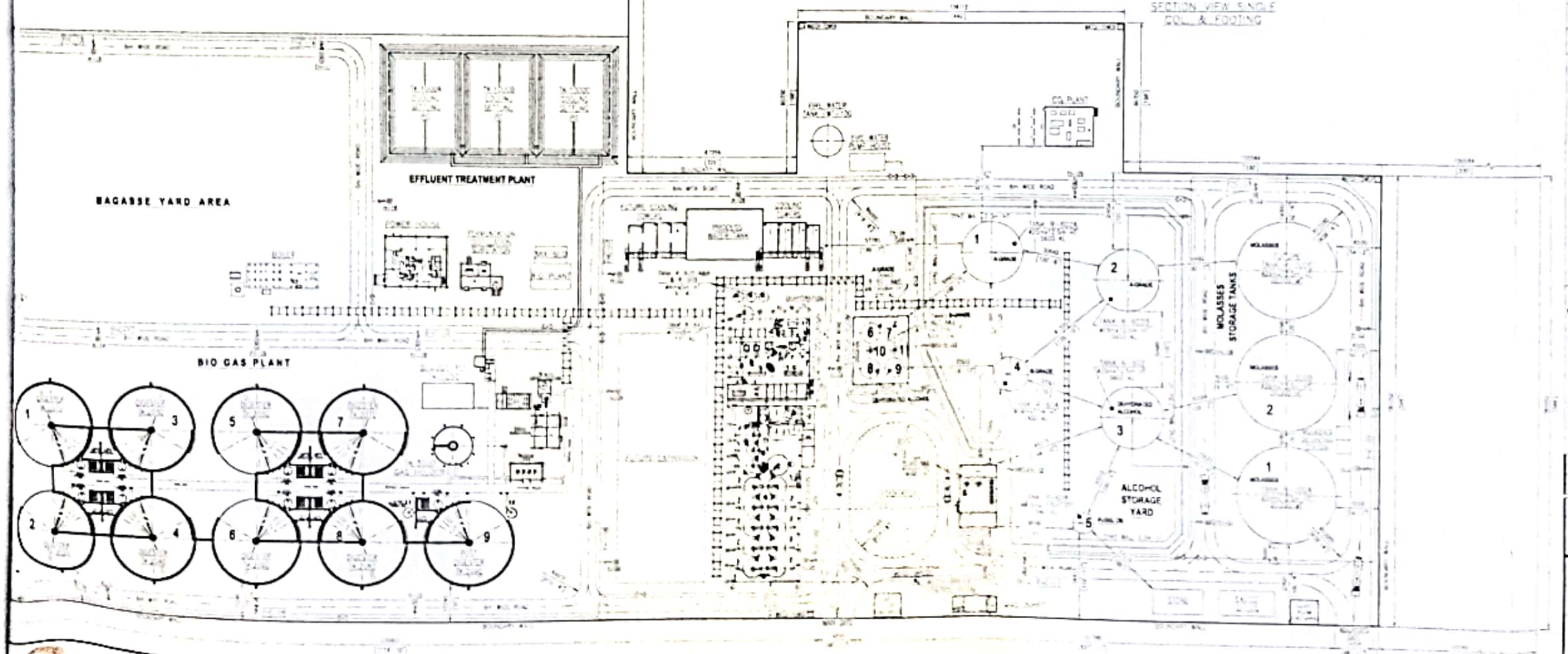
DYKE WALL AREA CAPACITY

DYKE	L x B	AREA	HEIGHT	NET CAPACITY	
	METERS	SQ.M	METERS	[illegible]	Ltrs
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL OF MAIN STORAGE TANKS VOLUME				[illegible]	[illegible]
TOTAL OF MAIN STORAGE TANKS VOLUME+5% MORE				[illegible]	[illegible]

S.NO	SYMBOL	SAFETY EQUIPMENT	QUANTITY
1	[illegible]	FIRE HYDRANT [illegible]	[illegible]
2	[illegible]	FIRE HYDRANT [illegible] MONITOR	[illegible]
3		FIRE EXTINGUISHER CO_2	[illegible]
4		FIRE EXTINGUISHER FOAM TYPE [illegible]	[illegible]
5		FIRE EXTINGUISHER CHEMICAL TYPE [illegible]	[illegible]
6	MFT-1	FOAM TROLLEY [illegible]	1 NO
7	MFT-2	FOAM TROLLEY [illegible]	1 NO
8	[illegible]	SAND BUCKET WITH STANDS [illegible]	[illegible]

NOTES:

[illegible]



CERTIFICATES:

1. CERTIFIED THAT THERE IS NO BASEMENT, FIRST FLOOR WILL BE CONSTRUCTED WITH IN THE PREMISES
2. CERTIFIED THAT THERE IS NO UNDER GROUND TELEPHONE CABLE IS PASSING WITH IN THE AREA OF PROPOSED SITE
3. CERTIFIED THAT ADEQUATE ARRENGEMENTS ARE MADE AGAINST FIRE ACCIDENTS AT THE SITE AS PER P.R [illegible]
4. CERTIFIED THAT NO OTHERS GOODS, OTHER THEN POL SHOULD BE SOLD THROUGH THIS PROPOSED SITE
5. CERTIFIED THAT IS NO NATURAL GAS PIPE LINE IS PASSING WITH THE RADIUS OF THE PROPOSED SITE

COMPUTER REFERENCE DRAWING NUMBER 303-1-GEN-PLT-002-R8

OES OPTIMUM ENGINEERING SERVICES

CLIENT: JDW SUGAR MILLS LIMITED

PROJECT: DISTILLERY PLANT 230,000 LITERS/DAY CAPACITY ENA AT JDW SUGAR MILLS

TITLE: FACILITIES LAYOUT PLAN FOR APPROVAL FROM EXPLOSIVE DEPARTMENT

DRAWING NO: 303-1-GEN-PLT-002 REV 8

SCALE 1:850 SIZE A1 SHEET 1 OF 1

ANNEX-IV

Layout Plan of Wetland

ANNEX-V

Validated Environmental Monitoring Reports

CERTIFIED

SOLUTION ENVIRONMENTAL & ANALYTICAL LABORATORY

CERTIFIED ISO 14001:2015 COMPANY
CERTIFIED ISO 9001:2015 COMPANY
CERTIFIED ISO 45001:2018 COMPANY

AMBIENT AIR MONITORING REPORT

Client Name:	JDW Group (Distillery Project)	Site Location:	Sadiqabad, Punjab, Pakistan
Monitoring Point:	Mid of Project	Monitoring Time:	24 Hour
Starting Date:	28-12-2023	Reporting Date:	05-01-2024
Monitoring By:	SEAL		
		Reference No.:	SEAL/Lab/2024/AA/001

Results: -

Sr. No.	Parameter	Method	Unit	Results	PEQS
1	Particulate Matter (PM_{10})	40 CFR Part 50, App J (US-EPA)	µg/m³	110.1	150
2	Carbon monoxide (CO)	40 CFR Part 50, App. C (US-EPA)	mg/m³	2.85	5
3	Oxides of Nitrogen NOx (NO & NO_2)	40 CFR Part 50, App F (US-EPA)	µg/m³	35.05	120
4	Sulphur dioxide SOx(SO_2)	EQSA-0197-114 (US-EPA)	µg/m³	46.1	120
5	Particulate Matter ($PM_{2.5}$)	40 CFR Part 50, App J (US-EPA)	µg/m³	27.8	35

PEQS: Punjab Environmental Quality Standards

Quality was assured through self-calibration of the instrument.
The measurements were carried out on client request.
The client is responsible lawful usage of reported data in future.

ANALYZED BY	REVIEWED BY	APPROVED BY
[signature]	[signature]	Arshad
Lab Analyst	Assistant Lab Manager	Lab Manager

...FICE: Plot # 12, Water Avenue, Green View Society, Off Kacha Jail Road, ..., Lahore, Pakistan. PHONES: +92-42-35922295-96, FAX: +92-42-35922296
...@seal.com.pk / nihalasghar@gmail.com

KARACHI OFFICE: Office No. M 06-07 In Fort Sultan Opp, Air Port Telephone Exchange, Shahrah-e-Faisal, Karachi, Pakistan.
PHONES:+92-300-9768799 EMAIL: karachi@seal.com.pk

SOLUTION ENVIRONMENTAL & ANALYTICAL LABORATORY

GROUND WATER ANALYSIS REPORT

Client Name:	JDW Group (Distillery Project)	Site Location:	Sadiqabad, Punjab , Pakistan
Sampling Point:	Tap Water		
Sampling Date:	28-12-2023	Nature of Sample:	Ground Water
		Date of Completion:	05-01-2024
Sampling By:	SEAL	Temp. & Humidity	23-27 C^0 & 50-70 %
		Reference No.:	SEAL/Lab/2024/GW/001

Results: -

Sr. No.	Parameter	Method	Unit	Result	PEQS
1	pH	APHA 4500-H^+ B	--	8.1	6.5-8.5
2	Total Dissolved Solids (TDS)	APHA 2540 C	mg/l	424	1000
3	Chloride	4500- APHA Cl^- B	mg/l	65.99	250
4	Fluoride	APHA 4500-F^- D	mg/l	0.43	1.5
5	Taste	APHA 2120 B	Object. /unobj.	Unobject.	Unobject.
6	Odour	APHA 2120 B	Object. /unobj.	Unobject.	Unobject.
7	Colour	APHA 2120 B	TCU	0.79	15
8	Nitrate (as NO_3^-)	APHA 4500-NO^{3-} E	mg/l	0.3	50
9	Nitrite (as NO_2^-)	APHA 4500-NO^{2-} B	mg/l	0.01	3
10	Lead	APHA-Pb B	mg/l	BDL	0.05
11	Total Hardness as $CaCO_3$	APHA 2340 C	mg/l	170.0	500
12	Turbidity	APHA 2130 B	NTU	BDL	5
13	Zinc	APHA 3500-Zn B	mg/l	BDL	5
14	Aluminum	APHA 3111 D	mg/l	BDL	0.2
15	Chromium	APHA 3500-Cr B	mg/l	BDL	0.050
16	Cadmium	APHA 3500-Cd D	mg/l	BDL	0.01
17	Copper	APHA 3500-Cu C	mg/l	BDL	2
18	Boron	APHA 4500-B C	mg/l	0.031	0.300
19	Barium	APHA 3111 B	mg/l	0.045	0.700

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SOLUTION ENVIRONMENTAL & ANALYTICAL LABORATORY

Client Name:	JDW Group (Distillery Project)	Site Location:	Sadiqabad, Punjab, Pakistan
Sampling Point:	Tap Water	Nature of Sample:	Ground Water
Sampling Date:	28-12-2023	Date of Completion:	05-01-2024
		Temp. & Humidity	23-27 C^0 & 50-70 %
Sampling By:	SEAL	Reference No.:	SEAL/Lab/2024/GW/001

Results: -

Sr. No	Parameter	Method	Unit	Result	PEQS
20	Antimony	APHA 3114 C	mg/l	0.002	0.020
21	Arsenic	APHA 3114 C	mg/l	0.012	0.050
22	Cyanide	APHA 4500-CN^- D	mg/l	BDL	0.05
23	Mercury	APHA 3112	mg/l	BDL	0.001
24	Nickel	APHA 3111 B	mg/l	BDL	0.020
25	Residual Chlorine	APHA 4500-Cl_2	mg/l	0.08	0.2 – 0.5
26	Total Coliform	APHA 9222 B	Number/100ml	0	0/100 ml
27	Thermo Coliform	APHA 9222 B	Number/100ml	0	0/100 ml
28	E. coli	APHA 9222 C	Number/100ml	0	0/100 ml

PEQS = Punjab Environmental Quality Standards
BDL (Below Detection Limit)
APHA = American Public Health Association

Note:

- This report should be reproduced as a whole and not in parts.
- The responsibility of the ethical use of the results reported in this report lies with the client.
- Consequently, the laboratory is absolved of its responsibility for any claim that may result through the use by the client or others of the results appearing in this report.
- The left-over samples (if so available) shall be retained for 10 days after the issuance of the report unless otherwise negotiated between the client and the laboratory.
- The report is not valid for any negotiation.

ANALYZED BY	REVIEWED BY	APPROVED BY
Lab Analyst	Assistant Lab Manager	Lab Manager

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CERTIFIED

SOLUTION ENVIRONMENTAL
& ANALYTICAL LABORATORY

CERTIFIED ISO COMPANY
CERTIFIED ISO COMPANY
CERTIFIED ISO COMPANY

NOISE LEVEL MONITORING REPORT

Client Name:	JDW Group (Distillery Project)	Site Location:	Sadiqabad, Punjab , Pakistan
Monitoring Point:	Mid Of Project		
Monitoring Date	28-12-2023	Instrument Used:	Digital Sound Level Meter BSWA-308
Reporting Date:	05-01-2024	Time of Monitoring:	24 Hours
Monitoring By:	Solution Environmental & Analytical Laboratory	Reference No.:	SEAL/LAB/2024/NM/001

Results: -

Sr. No.	Time	Noise dB(A)		PEQS
1	04:00 PM	50.3	Day Time	75
2	05:00 PM	53.3		
3	06:00 PM	58.0		
4	07:00 PM	56.6		
5	08:00 PM	54.3		
6	09:00 PM	51.5		
7	10:00 PM	58.6		
8	11:00 PM	54.2	Night Time	65
9	12:00 AM	50.6		
10	01:00 AM	48.8		
11	02:00 AM	47.4		
12	03:00 AM	45.2		
13	04:00 AM	42.2		

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14	05:00 AM	38.8	Night Time	65
15	06:00 AM	40.4		
16	07:00 AM	53.1	Day Time	75
17	08:00 AM	51.5		
18	09:00 AM	54.6		
19	10:00 AM	56.9		
20	11:00 AM	55.7		
21	12:00 PM	56.7		
22	01:00 PM	56.8		
23	02:00 PM	56.5		
24	03:00 PM	57.8		
Average Noise Level			53.7 dB(A) Leq	

PEQS: Punjab Environmental Quality Standards

Note:

- The average noise levels describe the overall ambient noise levels of the points.
- Selected measurement units were dB (A) otherwise stated.
- Quality was assured through self calibration of the instrument.
- The measurements were carried out on client request.
- The client is responsible lawful usage of reported data in future.
- The report in not valid for any negotiation.

ANALYZED BY	REVIEWED BY	APPROVED BY
Lab Analyst	Assistant Lab Manager	Lab Manager

ANNEX-VI

Socio-Economic Survey Forms

1	Respondent Name	Muhammad Ammas
2	CNIC No./Mobile No.	0308-1891805
3	Designation	Sub Divisional officer
4	Department Name	Irrigation
5	Project Title	Installation of Distillery Plant
6	Project Location	JDW Sugar Mills
7	Comments/Suggestions of Respondents	This project should be implemented however guidlines of Government should be adhered as per Law and policy in vogue. The project be implemented under joint supervision of this Department.

28/12/2023

Respondent: ______

Interviewer: ______

ECOGREEN

1	Respondent Name	DIRECTOR LABOUR WELFARE BAHAWALPUR DIVISION Malik Muhammad Farooq
2	CNIC No./Mobile No.	0308-6537639
3	Designation	Director Labour Welfare Bahawalpur Division.
4	Department Name	Labour & Human Resource Department.
5	Project Title	Installation of Distillery Plant
6	Project Location	JDW Sugar Mills Jamal Din wali Tehsil Sadiqabad District RY Khan.
7	Comments/Suggestions of Respondents	The instant project of enhancement of crushing capacity as per laws and policy of Government is appreciable as the same will add and create employment opportunities for the local area residents. However the labour laws are to be implemented in letter & spirit in a bid to ensure health & safety of employed workforce & to safeguard their economic interests. It will also add to economic well-being of the area.

M.M. Farooq 28/12/2023.

Respondent: DIRECTOR LABOUR WELFARE BAHAWALPUR DIVISION

Interviewer: G Shiraz

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Rafa'at Arshad : Contact #/ CNIC 31304-7778874-5
2. Address RYK
3. Age 38
4. Education Primary
5. Marital Status
   - ✓ Married
   - Single
6. If married, No. of children 03
7. Religion Islam
8. No. of earning members in family 01
9. Total income/ occupation 25,000
10. Is there any family member suffering from some disease?
    01

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    01
12. How many schools and colleges are present in the area?
    01

Project Information

13. Do you know about this project? How were you informed?
    Yes. Father worked in mill.
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes More Sugar Production
15. What do you think would be the positive/ negative effects of the Project?
    Employment
16. What will be the Health and Safety Issue due to this project in your point of view?
    NO
17. Would you like to add anything else?
    No

Interviewed By:

Sign of Person (Interviewed)

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Jamil Ahmed Contact #/ CNIC 31304-2061233-5
2. Address RYK
3. Age 31
4. Education Illiterate
5. Marital Status

✓ Married • Single

6. If married, No. of children 03
7. Religion Islam
8. No. of earning members in family 02
9. Total income/ occupation 28,000
10. Is there any family member suffering from some disease?

No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?

01

12. How many schools and colleges are present in the area?

01

Project Information

13. Do you know about this project? How were you informed?
Yes Cousin working in Mill

14. What do you think about the Project? Do you think it should be applied? Why, why not?

Yes More production of Sugar

15. What do you think would be the positive/ negative effects of the Project?

Employment Factor

16. What will be the Health and Safety Issue due to this project in your point of view?

No

17. Would you like to add anything else?

No

Interviewed By: [signature]

Sign of Person (Interviewed) Jamil

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Haji Hazoor uddin Contact #/ CNIC 31304-5883166-7
2. Address BYK
3. Age 42
4. Education: Illiterate
5. Marital Status
   ✓ Married → Single
6. If married, No. of children 04
7. Religion Islam
8. No. of earning members in family 02
9. Total income/ occupation 33,000
10. Is there any family member suffering from some disease?
    01

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    01
12. How many schools and colleges are present in the area?
    01

Project Information

13. Do you know about this project? How were you informed?
    Yes. locally
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes. Economic benefit
15. What do you think would be the positive/ negative effects of the Project?
    No negative effect
16. What will be the Health and Safety Issue due to this project in your point of view?
    No
17. Would you like to add anything else?
    No

Interviewed By: [signature]

Sign of Person (Interviewed) hazoor uddin

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Riaz Ahmed   Contact #/ CNIC 31303-1398841-1
2. Address RYK
3. Age 36
4. Education Primary
5. Marital Status
   ✓ Married   • Single
6. If married, No. of children 05
7. Religion Islam
8. No. of earning members in family 01
9. Total income/ occupation 29,000
10. Is there any family member suffering from some disease?
    NO

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    01
12. How many schools and colleges are present in the area?
    01

Project Information

13. Do you know about this project? How were you informed?
    No, While Survey
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes. Employment
15. What do you think would be the positive/ negative effects of the Project?
    Enhanced Efficiency
16. What will be the Health and Safety Issue due to this project in your point of view?
    NO
17. Would you like to add anything else?
    NO

Interviewed By: Sign of Person (Interviewed) Riaz

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

45404-0380414-!

1. Name Ejaz ALi
Contact # / CNIC 31304-
2. Address RYK

3. Age 37
4. Education Primary.
5. Marital Status
- Married ✓
- Single
6. If married, No. of children 02
7. Religion Islam
8. No. of earning members in family 01
9. Total income/ occupation 37,000
10. Is there any family member suffering from some disease?

01

Receptors Information

11. How many hospitals/ dispensaries are available in the area?

01

12. How many schools and colleges are present in the area?

01

Project Information

13. Do you know about this project? How were you informed?

Yes. While Survey.

14. What do you think about the Project? Do you think it should be applied? Why, why not?

Yes. More Capacity for Sugar Production

15. What do you think would be the positive/ negative effects of the Project?

No. negative effect

16. What will be the Health and Safety Issue due to this project in your point of view?

NO

17. Would you like to add anything else?

NO

Interviewed By: [signature]

Sign of Person (Interviewed) Ejaz

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name: Khawand Bakhsh Contact #/ CNIC: 31304-8653311-1
2. Address: RYK
3. Age: 38
4. Education: Illiterate
5. Marital Status
   - ✓ Married
   - Single
6. If married, No. of children: 02
7. Religion: Islam
8. No. of earning members in family: 01
9. Total income/ occupation: 22,000
10. Is there any family member suffering from some disease?
    No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    0
12. How many schools and colleges are present in the area?
    01

Project Information

13. Do you know about this project? How were you informed?
    Yes Via close area
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes. Employment Opportunities
15. What do you think would be the positive/ negative effects of the Project?
    Increased capacity of Mill
16. What will be the Health and Safety Issue due to this project in your point of view?
    No
17. Would you like to add anything else?
    No

Interviewed By: [signature]

Sign of Person (Interviewed): [signature]

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Syed Ehsan Shah   Contact #/ CNIC 31304-5230901-7
2. Address RYK
3. Age 47
4. Education Illiterate
5. Marital Status
   ✓ Married   Single
6. If married, No. of children 01
7. Religion Islam
8. No. of earning members in family 01
9. Total income/ occupation 44,000
10. Is there any family member suffering from some disease?
    No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    01
12. How many schools and colleges are present in the area?
    01

Project Information

13. Do you know about this project? How were you informed?
    No While Survey
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes.
15. What do you think would be the positive/ negative effects of the Project?
    Increased efficiency of PDH
16. What will be the Health and Safety Issue due to this project in your point of view?
    No
17. Would you like to add anything else?
    No

Interviewed By: [signature]   Sign of Person (Interviewed) [signature]

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name M. Asjad Contact #/ CNIC 31303-87152384
2. Address RYK
3. Age 25
4. Education Middle.
5. Marital Status
   - Married
   - Y Single
6. If married, No. of children N/A
7. Religion Islam
8. No. of earning members in family 01
9. Total income/ occupation 28,000
10. Is there any family member suffering from some disease?
    NO

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    01
12. How many schools and colleges are present in the area?
    01

Project Information

13. Do you know about this project? How were you informed?
    Yes. While Survey
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes. More Sugar production
15. What do you think would be the positive/ negative effects of the Project?
    Employment of local Labor
16. What will be the Health and Safety Issue due to this project in your point of view?
    NO
17. Would you like to add anything else?
    NO

Interviewed By: [signature]

Sign of Person (Interviewed) [signature]

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Saddam Hussain Contact # CNIC 31304-8225908-

2. Address RYK

3. Age 40

4. Education Illiterate

5. Marital Status

✓ Married • Single

6. If married, No. of children 06

7. Religion Islam

8. No. of earning members in family 02

9. Total income/ occupation 82,000

10. Is there any family member suffering from stone disease?

02

Receptors Information

11. How many hospitals/ dispensaries are available in the area?

01

12. How many schools and colleges are present in the area?

01

Project Information

13. Do you know about this project? How were you informed?

Yes Via friend working in mill

14. What do you think about the Project? Do you think it should be applied? Why, why not?

Yes. development of Mill.

15. What do you think would be the positive/ negative effects of the Project?

Enhanced Capacity of Mill to produce sugar

16. What will be the Health and Safety Issue due to this project in your point of view?

No

17. Would you like to add anything else?

No

Interviewed By: [signature]

Sign of Person (Interviewed) Saddam

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Majid Ahmed Contact #/ CNIC 31304-1823482-1
2. Address RYK
3. Age 45
4. Education Matric
5. Marital Status

✓ Married · Single

6. If married, No. of children 04
7. Religion Islam
8. No. of earning members in family 01
9. Total income/ occupation 35,000
10. Is there any family member suffering from some disease?

NO

Receptors Information

11. How many hospitals/ dispensaries are available in the area?

01

12. How many schools and colleges are present in the area?

01

Project Information

13. Do you know about this project? How were you informed?

Yes. While Survey.

14. What do you think about the Project? Do you think it should be applied? Why, why not?

Yes. Employment.

15. What do you think would be the positive/ negative effects of the Project?

More Sugar Production

16. What will be the Health and Safety Issue due to this project in your point of view?

NO

17. Would you like to add anything else?

NO

Interviewed By:

Sign of Person (Interviewed) Nazir

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Abdul Razaq
2. Address Basti Ghulam Qasim Mahar, Punjab-Pakistan

Contact #/ CNIC 0304-6867747

3. Age 23 Years
4. Education FA (Enrolled)
5. Marital Status

   - Married
   - X Single

6. If married, No. of children -
7. Religion Islam
8. No. of earning members in family 1
9. Total income/ occupation (Farming) Around 40000/-
10. Is there any family member suffering from some disease?

No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?

Around 2

12. How many schools and colleges are present in the area?

Around 5

Project Information

13. Do you know about this project? How were you informed?

Yes, Through my Friend

14. What do you think about the Project? Do you think it should be applied? Why, why not?

Yes; Employment Opportunities

15. What do you think would be the positive/ negative effects of the Project?

May be Positive will be much more than negative

16. What will be the Health and Safety Issue due to this project in your point of view?

During construction, soil dispersion in the air can cause problem.

17. Would you like to add anything else?

No

Interviewed By: [signature]

Sign of Person (Interviewed) عبدالرزاق

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Jama Khan Contact #/ CNIC 0315-1656276
2. Address Chak 181 NP - Punjab - Pakistan
3. Age 38 Years
4. Education Primary
5. Marital Status
   - ✓ Married
   - Single
6. If married, No. of children 1
7. Religion Islam
8. No. of earning members in family 1
9. Total income/ occupation Around 32000/- (Raisig Goats)
10. Is there any family member suffering from some disease?
    No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    Around 2
12. How many schools and colleges are present in the area?
    Around 5

Project Information

13. Do you know about this project? How were you informed?
    No Idea about Project
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    May be Yes
15. What do you think would be the positive/ negative effects of the Project?
    I think positive as more emlogment opportunities will be created.
16. What will be the Health and Safety Issue due to this project in your point of view?
    No Idea
17. Would you like to add anything else?
    No

Interviewed By: [signature]

Sign of Person (Interviewed) [signature]

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Naveed Ahmed   Contact #/ CNIC 0301-6581191
2. Address Chak 181 NP, Punjab- Pakistan
3. Age 36 Years
4. Education Under Matric
5. Marital Status

   ✓ Married   • Single

6. If married, No. of children 2
7. Religion Islam
8. No. of earning members in family 2
9. Total income/ occupation Around 40000/- (Farming)
10. Is there any family member suffering from some disease?

    No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?

    Around 2

12. How many schools and colleges are present in the area?

    Almost 5

Project Information

13. Do you know about this project? How were you informed?

    Yes; Through my Family

14. What do you think about the Project? Do you think it should be applied? Why, why not?

    Yes

15. What do you think would be the positive/ negative effects of the Project?

    Positive

16. What will be the Health and Safety Issue due to this project in your point of view?

    No issue

17. Would you like to add anything else?

    No

Interviewed By: [signature]   Sign of Person (Interviewed) Naveed

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Abdul Hameed
2. Address Dhondi, Punjab - Pakistan

Contact #/ CNIC 03041823211

3. Age 37 Years
4. Education Matric
5. Marital Status
   - ✓ Married
   - Single
6. If married, No. of children 3
7. Religion Islam
8. No. of earning members in family 1
9. Total income/ occupation Around 28000/- (Farming)
10. Is there any family member suffering from some disease?
    No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    Around 2
12. How many schools and colleges are present in the area?
    Almost 5

Project Information

13. Do you know about this project? How were you informed?
    Yes, Through my Friend
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes; More Employment Opportunities
15. What do you think would be the positive/ negative effects of the Project?
    Positive
16. What will be the Health and Safety Issue due to this project in your point of view?
    No Idea
17. Would you like to add anything else?
    No

Interviewed By: [signature]

Sign of Person (Interviewed) [signature: Ab Hameed]

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name M. Farooq
2. Address Basti Ghulam Qasim Mahar, Punjab - Pakistan   Contact #/ CNIC 0305-6826774
3. Age 30 Years
4. Education FA
5. Marital Status

   ✓ • Married   • Single

6. If married, No. of children 1
7. Religion Islam
8. No. of earning members in family 1
9. Total income/ occupation Around 30000/- (Farming)
10. Is there any family member suffering from some disease?

    No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?

    Around 2

12. How many schools and colleges are present in the area?

    Almost 5

Project Information

13. Do you know about this project? How were you informed?

    Yes ; Through my boy

14. What do you think about the Project? Do you think it should be applied? Why, why not?

    May be Yes as Jobs Opportunities will happen

15. What do you think would be the positive/ negative effects of the Project?

    Acc. to my thinking, Positive effects will happen

16. What will be the Health and Safety Issue due to this project in your point of view?

    No issues

17. Would you like to add anything else?

    No.

Interviewed By: [signature]   Sign of Person (Interviewed) [signature]

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name M. Aslam   Contact #/ CNIC 03037664283
2. Address Chok 181 NP, Punjab - Pakistan

3. Age 28 Years
4. Education Matric
5. Marital Status

   - Married   ✓ • Single

6. If married, No. of children -
7. Religion Islam
8. No. of earning members in family 2
9. Total income/ occupation Around 38000/- (Farmig)
10. Is there any family member suffering from some disease?

    No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?

    Around 2

12. How many schools and colleges are present in the area?

    Almost 5

Project Information

13. Do you know about this project? How were you informed?

    Yes ; By Proponent's Representatives

14. What do you think about the Project? Do you think it should be applied? Why, why not?

    May be Yes ; Employment

15. What do you think would be the positive/ negative effects of the Project?

    Positive

16. What will be the Health and Safety Issue due to this project in your point of view?

    No idea

17. Would you like to add anything else?

    No

Interviewed By: [signature]   Sign of Person (Interviewed) [signature]

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name Khursheed Ahmad Contact #/ CNIC 0305-6798792
2. Address Adampur - Punjab - Pakistan
3. Age 34 years
4. Education middle
5. Marital Status
   - ✓ Married
   - Single
6. If married, No. of children 2
7. Religion Islam
8. No. of earning members in family 1
9. Total income/ occupation Around 25000/- (Raising Goats)
10. Is there any family member suffering from some disease?
    No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    2
12. How many schools and colleges are present in the area?
    5

Project Information

13. Do you know about this project? How were you informed?
    Yes ; By Friend
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes, Employment Opportunities
15. What do you think would be the positive/ negative effects of the Project?
    Positive
16. What will be the Health and Safety Issue due to this project in your point of view?
    No idea
17. Would you like to add anything else?
    No

Interviewed By: [signature]

Sign of Person (Interviewed) [signature]

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name M. Nawab Contact #/ CNIC 03253128515
2. Address Adampur - Punjab - Pakistan
3. Age 41 Years
4. Education under middle
5. Marital Status
   - ✓ Married
   - Single
6. If married, No. of children 4
7. Religion Islam
8. No. of earning members in family 2
9. Total income/ occupation Around 40000/- (Farming)
10. Is there any family member suffering from some disease?
    Yes (Diabetes)

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    Around 2
12. How many schools and colleges are present in the area?
    Almost 5

Project Information

13. Do you know about this project? How were you informed?
    Yes ; Through Proponent Representatives
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes ; Employment Opportunities
15. What do you think would be the positive/ negative effects of the Project?
    Positive
16. What will be the Health and Safety Issue due to this project in your point of view?
    No issue
17. Would you like to add anything else?
    NO

Interviewed By: [signature]

Sign of Person (Interviewed) Nawab

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name M. Karam Contact #/ CNIC 0345-7165298
2. Address Dhandi - Punjab - Pakistan
3. Age 32
4. Education Under Matric
5. Marital Status
   - Married ✓ Single
6. If married, No. of children -
7. Religion Islam
8. No. of earning members in family 2
9. Total income/ occupation Around 35000/- (Raising Goats)
10. Is there any family member suffering from some disease?
    No.

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    Around 2
12. How many schools and colleges are present in the area?
    Around 5

Project Information

13. Do you know about this project? How were you informed?
    Yes ; Through my Friend
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes ; Employment Opportunities
15. What do you think would be the positive/ negative effects of the Project?
    Positive
16. What will be the Health and Safety Issue due to this project in your point of view?
    No Issue , I guess
17. Would you like to add anything else?
    No.

Interviewed By: [signature] Sign of Person (Interviewed) [signature]

QUESTIONNAIRE FOR SOCIOECONOMIC SURVEY

Personal Information

1. Name M. Jameel Contact #/ CNIC 0304-5489560
2. Address Kot Sabzal, Punjab - Pakistan
3. Age 31 Years
4. Education Middle
5. Marital Status
   - ✓ Married
   - Single
6. If married, No. of children 1
7. Religion Islam
8. No. of earning members in family 1
9. Total income/ occupation (Raising goats) Around 30000/-
10. Is there any family member suffering from some disease?
    No

Receptors Information

11. How many hospitals/ dispensaries are available in the area?
    Around 2
12. How many schools and colleges are present in the area?
    Around 5

Project Information

13. Do you know about this project? How were you informed?
    No
14. What do you think about the Project? Do you think it should be applied? Why, why not?
    Yes ; Employment Opportunities
15. What do you think would be the positive/ negative effects of the Project?
    May be Positive more than negative.
16. What will be the Health and Safety Issue due to this project in your point of view?
    No Idea
17. Would you like to add anything else?
    No

Interviewed By: [signature]

Sign of Person (Interviewed) [signature]

ANNEX-VII

Authority Letter in Favour of Consultant

JDW Sugar Mills Ltd.

Appointment & Authorization of Environmental Consultants
in the Provincial Environmental Protection Agency (EPA, Punjab) Lahore
In the matter of Project namely
INSTALLATION OF DISTILLERY PLANT OF M/S JDW SUGAR MILLS LIMITED LOCATED AT MOUZA PIR AHMEDABAD KOT SABZAL SADQIBAD, RAHIM YAR KHAN

Know all to whom these presents shall come that I the undersigned appoint
M/S Ecogreen Company (Pvt) Limited
Plot # 2, Block-A, Mini Commercial Market, Canal View Society, Lahore

To be the environmental consultants for conducting Environmental Impact Assessment (EIA) and to submit the EIA report, follow-up the same till the final decision of: -

1. To conduct the EIA, prepare and submit the report before the EP & CCD on behalf of the proponent.
2. To appear and represent the reply to the queries/objections, documents, explanations as shall be deemed necessary or advisable during the review process of the above cause at all its stages till the final decision of EP & CCD.
3. To withdraw, re-submit, revise the report or any act deemed necessary or advised in any manner relating to the said matter.
4. To prepare (if applicable) and submit the Review Fee Instrument/Banker's Cheque, pay or receive money and obtain or grant receipts therefore and to do all other acts and things which may be necessary to be done for the progress in course of proceedings in the matter.
5. To appoint any Environmental Laboratory or other environmental expert authorizing him to conduct monitoring, surveys, data collection etc. whenever deemed fit to do so.
6. **To receive all the letters and NOC from EP & CCD Punjab on behalf of client.**

Dated: 16th Jan, 2024

Maqsood Ahmad Malhi
(Company Secretary/Legal Head)
Proponent
JDW Sugar Mills Limited

Head Office: 17-Abid Majeed Road, Lahore Cantt., Lahore. PABX # 042-36664431-95, 36602573-74, Fax 042-36654490 Email: jdwho@jdw-group.com
Mills : Unit - I Mauza Sharin, Jemal Din Wali, Distt. Rahim Yar Khan. Ph: 068-5672161-3 Fax 068-5672164 Email: jdwsite@jdw-group.com
Unit - II Machi Goth, Sadiqabad, Distt. Rahim Yar Khan. Ph: 068-5786516-18, 5786520 Fax 068578652[illegible] Email: jdwsite2@jdw-group.com
Unit - III [illegible] Distt. Ghotki. Ph: 0723-662050-52, Fax 0723-662053, Email: jdwsite3@jdw-group.com

ANNEX-VIII

Glossary

GLOSSARY

Alternative	One of two or more available possibilities.
Ambient	Relating to the immediate surroundings of something.
Barren	A land too poor to produce much or any vegetation.
Baseline	A baseline study is required as a rule for project proposals where it is found that sites of cultural heritage are present or where there is strong evidence that their presence is highly likely.
Compatibility	A state in which two things are able to exist or occur together without problems or conflict.
Compliance	The action or fact of complying with a wish or command.
Conservation	Averse to change or innovation and holding traditional values
Constructed Wetland	Constructed wetlands are treatment systems that use natural processes involving wetland vegetation, soils, and their associated microbial assemblages to improve water quality.
Depletion	Reduction in the number or quantity of something.
Deterioration	The process of becoming progressively worse
Dismantling	Take a machine or structure to pieces.
Distillation	Distillation, or classical distillation, is the process of separating the components or substances from a liquid mixture by using selective boiling and condensation, usually inside an apparatus known as a still.
Ethanol	Ethanol is an organic compound with the chemical formula CH_3CH_2OH. It is an alcohol, with its formula also written as C_2H_5OH, C_2H_6O or EtOH, where Et stands for ethyl. Ethanol is a volatile, flammable, colorless liquid with a characteristic wine-like odor and pungent taste.
Evacuation	The action of evacuating a person or a place
Exploitation	The action or fact of treating someone unfairly in order to benefit from their work
Fire hydrant	A fitting in a street or other public place with a nozzle by which a fire hose may be attached to a water main.

Geology	The science which deals with the physical structure and substance of the earth, their history, and the processes which act on them.
Green belts	An area of open land around a city, on which building is restricted
infrastructure	The basic physical and organizational structures and facilities (e.g. buildings, roads, and power supplies) needed for the operation of a society or enterprise.
Metropolitan	A metropolitan area, sometimes referred to as a metro area or commuter belt, is a region consisting of a densely populated urban core and its less-populated surrounding territories, sharing industry, infrastructure, and housing.
Molasses	Molasses is a viscous substance, principally obtained from the refining of sugarcane or sugar beet juice into sugar.
Non Flammable	Not catching fire easily
Prediction	A forecast.
Prerequisite	A thing that is required as a prior condition for something else to happen or exist.
Prevailing	Existing at a particular time
Regulations	Regulation is the controlling of an activity or process, usually by means of rules.
Scope	The extent of the area or subject matter that something deals with or to which it is relevant.
Socioeconomic	Relating to or concerned with the interaction of social and economic factors.
Statutory	Having come to be required or expected through being done or made regularly
Terrain	A stretch of land, especially with regard to its physical features
Topography	The arrangement of the natural and artificial physical features of an area.
Topsoil	The top layer of soil.

ANNEX-IX

References

References

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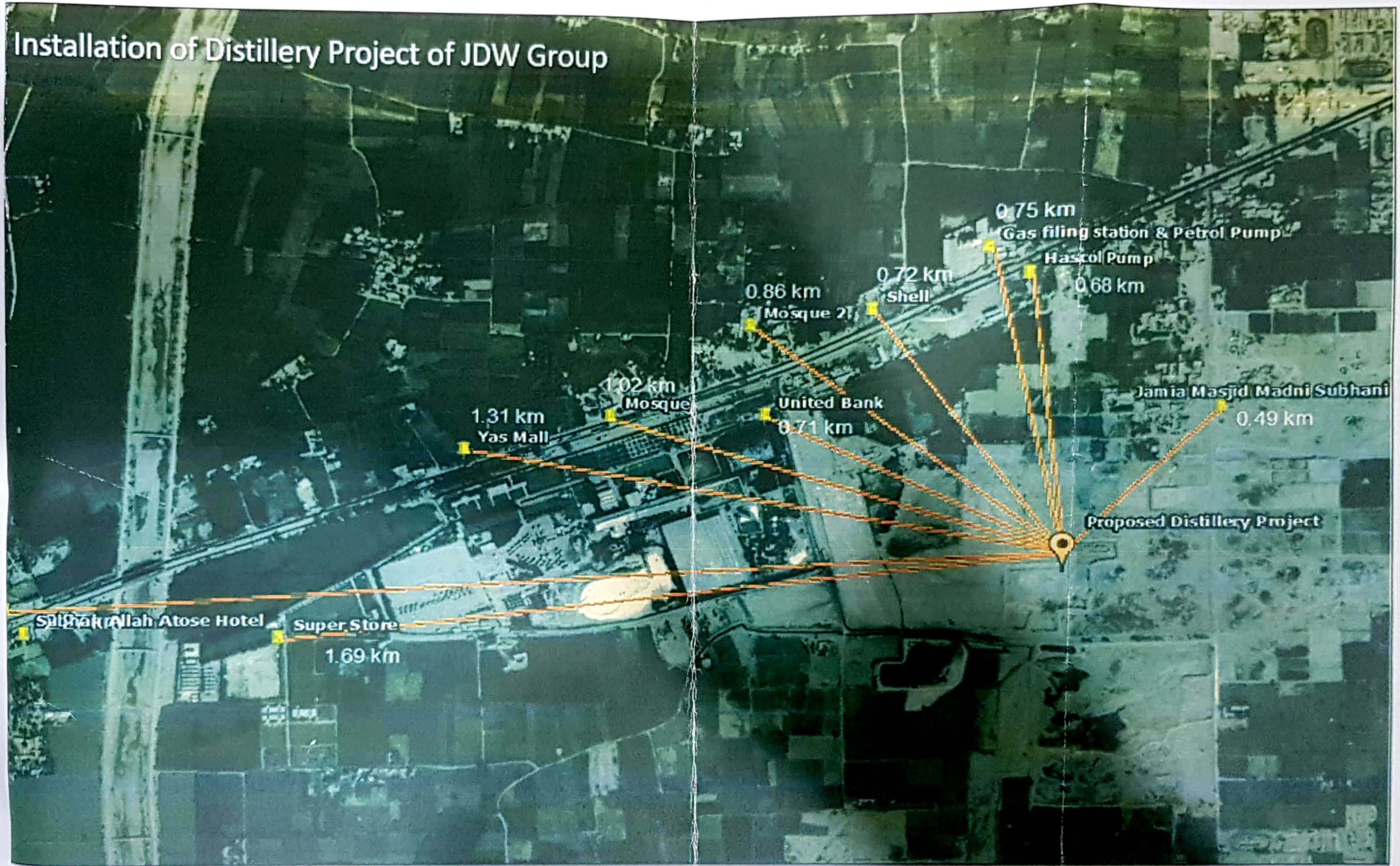
ANNEX-X

Google Earth Map



Installation of Distillery Project of JDW Group
0.75 km
Gas filing station & Petrol Pump
Hascol Pump
0.68 km
0.72 km
Shell
0.86 km
Mosque 2
1.02 km
Mosque
United Bank
0.71 km
1.31 km
Yas Mall
Jamia Masjid Madni Subhani
0.49 km
Proposed Distillery Project
Atose Hotel
Super Store
1.69 km