



*An ENVIRONMENTAL IMPACT ASSESSMENT report  
For  
Development of Eco-Friendly Theme Park Namely  
**THRILL CITY PARKS AND RESORTS,  
KALAR KAHAR**  
by *Bismillah Developers.**

LOCATED AT

*Karoli Road, Mouza Khandovah Tehsil Kalar Kahar District  
Chakwal*

PROJECT PROPONENT:

*MR. Ikhlaq Ahmed*

PREPARED BY



**Green Yasin Environment Consultants**

PEC Certified

209 – C Faisal Town, Lahore

0092 300 0286296

Submitted to: *Environment Protection Agency, Punjab*

## **LIST OF ABBREVIATIONS**

CO <sub>2</sub>	Carbon dioxide
dB(A)	A weighted decibel scale
EIA	Environmental Impact Assessment
EMMP	Environmental Management and Monitoring Plan
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
EPD	Environmental Protection Department
EPO	Environmental Protection Ordinance
IEE	Initial Environmental Examination
Ltd.	Limited
LTI	Loss Time Injury
LWI	Loss Work Injury
m <sup>3</sup>	Cubic meter
m <sup>3</sup> /h	Cubic meter per hour
MW	Megawatt
M/S	Messrs
NEQS	National Environmental Quality Standards
No.	Number
NOC	No Objection Certificate
NO <sub>x</sub>	Oxides of Nitrogen
PEPC	Pakistan Environmental Protection Council
PEPA, 1997	Pakistan Environmental Protection Act, 1997

PEPA, 2012	Punjab Environmental Protection (Amendment) Act, 2012
PEPO	Pakistan Environmental Protection Ordinance
PKR	Pakistani Rupees
PM	Particulate Matter
PPEs	Personal Protective Equipment
Pvt.	Private
SMART	Self-Monitoring and Reporting
SOPs	Standard Operating Procedures
SO <sub>x</sub>	Oxides of Sulfur
WAPDA	Water and Power Development Authority

## EXECUTIVE SUMMARY

### INTRODUCTION

BISMILLAH DEVELOPERS are committed to excellence for all customers through safe real estate investments and the best possible returns in high-quality development projects. The management of Bismillah Developers workday and night so people can have a bright future with a better way of life. Bismillah Developers intend to develop owned land near Kalar Kahar as a tourist place which will have thrill rides, entertainment activities and food courts. Said project is the Development of Eco-Friendly Theme Park Namely *Thrill City Parks and Resorts by Bismillah Developers*, Kalar Kahar at Karoli Road, Mouza Khandovah Tehsil Kalar Kahar District Chakwal. “To full fil the compliance of section 12 of PEPA, Act 1997 (amended 2012 & 2017) M/s **Green Yasin Environment Consultants** has been engaged for conducting Environmental Impact Assessment (EIA) of said development at site.

The main objectives of this EIA are to establish baseline environmental conditions, identify potential impacts and suggest suitable mitigation measures for the execution of the said project. This study has been accomplished in line with the provisions – guidelines and directives of Punjab Environmental Protection Agency.

This executive summary presents an overview of the main findings of the EIA Report for the aforesaid project i-e Development of Eco-Friendly Theme Park Namely Thrill City Parks and Resorts, Kalar Kahar.

### PROJECT OUTLINE (Details are given in Chapter 3)

#### Salient features of project:

<b>Proponent Name:</b>	<b>Mr. Ikhtlaq Ahmed through Bismillah Developers (Managing Director)</b>
<b>Project Title:</b>	Development of Eco-Friendly Theme Park Namely Thrill City Parks and Resorts, Kalar Kahar by Bismillah Developers.
<b>Project Location:</b>	Karoli Road, Mouza Khandovah Tehsil Kalar Kahar District Chakwal
<b>Name of organization preparing report</b>	Green Yasin Environment Consultants
<b>Total Area</b>	3166 Kanals 1 Marla and 63 Ft. 395.76 acre approx.
<b>Project Description</b>	The proposed project will include: <ul style="list-style-type: none"> <li>• Thrilling Rides</li> </ul>

	<ul style="list-style-type: none"> <li>• Water Features</li> <li>• Resorts</li> <li>• Dining Options</li> <li>• Food Street</li> <li>• Health and Spa Facilities</li> <li>• Event Spaces</li> <li>• Stadiums</li> <li>• Health amenities</li> </ul>
<b>Source of Water</b>	Through Kalar Kahar lake Filtration plant for drinking purposes.
<b>Cost of Project</b>	PKR 850 Million approx.
<b>Nearest Receptors</b>	<ul style="list-style-type: none"> <li>• Motorway 1.42 Km</li> <li>• Dhok Majhyal 1.63 Km</li> <li>• Karoli Road Adjacent</li> <li>• Grave of wing commander Fayyaz 3.5 Km</li> <li>• Karoli 3.91 Km</li> <li>• Bestway Cement 35 Km</li> </ul>
<b>Source of Power:</b>	Power Engines and Solar System (10 MW)
<b>Wastewater:</b>	Wastewater from the proposed project will be domestic in nature only
<b>Solid Waste Management:</b>	To handle the waste, waste management contract with EPA certified contractor will be done.
<b>Tree Plantation</b>	Said project is the development of land into Ecofriendly theme park which will have ornamental plants, fruity trees and flowering plants. At designated areas and boundary walls.

## MAJOR IMPACTS AND RECOMMENDED MITIGATION MEASURES:

### Beneficial/Positive Impacts:

- The proposed project will enhance tourism in the area.
- Proposed project will provide recreational activities and opportunities for visitors and contribute to area's economic growth.
- Employment opportunities to the locals will be generated.
- Proposed project will attract the national and international tourist due to its security and state of the art entertainment activities.
- Proposed project will highlight the area natural beauty, cultural heritage and tourism appeal.
- Overall the project will be an addition to tourism revenue of the country.

**Negative Impacts:**

Impacts	Mitigation measures
<b>Construction phase</b>	
Dust emissions	<p>Most of the dust generating activities during construction will last for a brief period, when excavation works will be executed. Thereafter, vehicular movement will generate most of the dusts. Dusts will be suppressed using water bowser to spray exposed land surfaces and particularly areas likely to be disturbed by trucks and other vehicles during the construction of the factory premises. Vehicular speed limits of 20 km/h will be ensured in order to minimize dust generation. Further mitigation measures will be:</p> <ul style="list-style-type: none"> <li>• Covering haulage vehicles transporting aggregate, soil and cement</li> <li>• Covering onsite stockpiles of aggregate, cement, soil, etc.</li> <li>• Providing workers with the necessary Personal Protective Equipment (PPE) e.g. dust masks and ensure that they are worn</li> <li>• Operating well maintained vehicles and equipment</li> </ul>
Wastewater	Portable toilets with septic tanks will be provided to workers during construction phase
Impacts of accidental spillages	<ul style="list-style-type: none"> <li>• The integrity of storage facilities will be ensured.</li> <li>• Drip pans will be made available where necessary</li> </ul>
Safety	<ul style="list-style-type: none"> <li>• Safety signage will be put in relevant places within the construction site.</li> <li>• Reckless driving by construction workers will be prohibited and monitored.</li> <li>• Workers will be given PPEs such as; helmets, mask, ear-plugs/muffs, safety boots, safety goggles, safety jackets, harnesses etc. and its use was strictly enforced</li> <li>• Workers will be trained on regular basis regarding personal safety.</li> <li>• Incidents will be reported directly to the concerned authority</li> </ul>
Solid waste management	<ul style="list-style-type: none"> <li>• Recycling or reuse of waste wherever possible.</li> <li>• Application of a good strategy to collect, remove and safely dispose of waste on daily basis to ensure a clean environment in the factory site</li> <li>• Integrated waste management system will be adopted for the proper management of the waste at site</li> </ul>

	<ul style="list-style-type: none"> <li>• At the end of the construction phase, left-over waste will be removed as per practices of area</li> <li>• All the idle machinery and equipment will be immediately removed from the site</li> <li>• Scrap and the debris will be removed from the site at the end of the construction stage after appropriate segregation of the material</li> </ul>
<b>Operation Phase</b>	
Air Emissions, Particulate emissions and stack emissions	<ul style="list-style-type: none"> <li>• Power Engines will be equipped with air emission control technology.</li> <li>• Monitoring of Ambient air parameters (Particulate matter, SO<sub>x</sub>, NO<sub>x</sub>) emissions should be carried out on regular basis to ensure compliance with the PEQS.</li> <li>• The inspection and the maintenance of the generator will be done on regular basis when in use.</li> <li>• Plantation of indigenous trees within the premises and along the boundary</li> </ul>
Noise Emissions	<ul style="list-style-type: none"> <li>• Noise barriers should be implanted.</li> <li>• Generators will be equipped with acoustic enclosures.</li> <li>• PPEs are provided to workers.</li> <li>• Proper tree plantation will be done.</li> <li>• Noise monitoring will be carried out periodically.</li> </ul>
Degradation of surface waters quality due to process water and sewage direct disposal	<ul style="list-style-type: none"> <li>• For treatment of wastewater, primary treatment plant will be installed which is the part of the construction.</li> <li>• Priority parameters of PEQs will be tested on monthly basis and all parameters on quarter basis.</li> <li>• Wastewater after treatment will be used for horticulture purpose at the site.</li> </ul>
To minimize loss work injury/hazards/incidents/accidents	<ul style="list-style-type: none"> <li>• Proper training will be provided for the proper usage of electric machineries and personal protective equipment (PPE) will be provided. It will be ensured that the individual who has received the correct training is operating a particular machine.</li> </ul>

	<ul style="list-style-type: none"> <li>• Site supervisor or health and safety should be present on site</li> <li>• Risk Assessment at play areas will be done on daily basis</li> <li>• Emergency response plans will be remained active.</li> <li>• Regulation of the health and safety polices will be done on regular basis</li> <li>• Training of staff in the handling of lifting materials.</li> <li>• Timely maintenance and repair of electrical equipment will be conducted.</li> <li>• Implementation of work rotations, provision of regular work breaks.</li> <li>• At workplace, first aid facilities will be maintained at readily accessible places.</li> </ul>
<p>To minimize disturbance of communities due to noise</p>	<ul style="list-style-type: none"> <li>• Acoustic enclosures will be placed on generators.</li> <li>• A thick greenbelt will be developed all around the plant which will be acting as noise barrier.</li> <li>• All the workers will be provided with ear plugs.</li> <li>• All the transporters will be advised to carry out regular maintenance of their vehicles.</li> </ul>
<p>Solid waste management</p>	<ul style="list-style-type: none"> <li>• There will be separated bins for segregation of different type of waste</li> <li>• Proper waste collection system will be ensured. For this purpose, waste bins will be placed inside the boundary.</li> <li>• 3 bin system of waste will be introduced.</li> <li>• The recyclable waste will be sent to waste contractors.</li> <li>• Records of generated waste should be maintained.</li> <li>• Training will be provided to personnel for identification, segregation and management of waste.</li> <li>• All containers of waste will be labeled properly.</li> <li>• The proper waste management system will be applied.</li> <li>• Small bins and large containers will be provided on every site at defined place causing no risk to worker and machinery.</li> <li>• In-house audits of the waste management will be undertaken on regular basis.</li> </ul>

<p>Traffic</p>	<ul style="list-style-type: none"> <li>• Nighttime driving of project vehicles will be limited where possible.</li> <li>• Vehicles will remain confined to defined access.</li> <li>• The route of the vehicles will be defined and given to drivers and security system.</li> <li>• The road will be labeled according to the rules and regulations.</li> <li>• Speed limits will be maintained.</li> <li>• The timetable and schedule of the vehicles will be defined and the monitoring of vehicles will be done every time.</li> <li>• Road signage relevant to the project traffic will be placed, where necessary.</li> <li>• All vehicle drivers will be trained in community safety aspects. Drivers will be trained in responsible and safe driving practices; safe speed limits for vehicles will be followed.</li> </ul>
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**ENVIRONMENTAL MANAGEMENT & MONITORING PLANS:**

During construction, ambient air quality for dust level in particular noise level (tests), solid waste management and soil contamination, and community and workers’ safety (visual) need to be monitored. During operation, stack emissions, noise level, air quality, wastewater quality and workers’ safety will be monitored. Plan has been included in **Chapter-7** of this EIA Report.

**CONCLUSION & RECOMMENDATION**

It can be concluded that there will be no significant impact on environment that will be caused due to development of said project. The said project will add value addition to the area development and increase tourism revenue of Kalar Kahar area. The Environmental Impact Assessment is being done in the light of guidelines recommended by Punjab EPA. Hence Environmental Approval may be accorded to the subject theme park for construction phase.

**Recommendations:**

Following Recommendations are suggested:

- Wastewater produced from process should be treated through Treatment Plant
- Security arrangements should be top notch for visitors and staff.
- Solid waste should be handed over to EPA certified contractor.
- All the concerns of stakeholders should be catered before construction
- EMP should be properly implemented
- The construction and installation should be completed in guidelines of accorded Environmental Approval.

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# CHAPTER NO 1 INTRODUCTION

## **CHAPTER 1: INTRODUCTION**

### **1.1 GENERAL**

BISMILLAH DEVELOPERS are committed to excellence for all customers through safe real estate investments and the best possible returns in high-quality development projects. The management of Bismillah Developers workday and night so people can have a bright future with a better way of life. Bismillah Developers intend to develop owned land near Kalar Kahar as a tourist place which will have thrill rides, entertainment activities and food courts.

Said project is the *Development of Eco-Friendly Theme Park Namely Thrill City Parks and Resorts by Bismillah Developers*. As per PEPA 2017 and the IEE/EIA Regulations, 2022 it is mandatory for the proponent of any development project to obtain Environmental Approval from EPA Punjab by filing an IEE or EIA as the case may be, before the Agency. This Report presents the Environmental Impact Assessment (EIA) for aforesaid unit. For this purpose, the proponent has engaged environmental consultants, **M/s Green Yasin Environment Consultants**. 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 the project with the aim to find out appropriate measures for their mitigation, to either eliminate those impacts or to bring them to acceptable level and formulate Environmental Management Plan (EMP) for implementation of the project in environment-friendly manner.

The report provides relevant information, as required under the officially approved format, to facilitate the decision makers i.e. EPA Punjab for the issuance of Environmental Approval.

### **1.2 THE PROPONENT**

Table 1-1 Details of Project proponent

<b>Name</b>	Mr. Ikhlq Ahmed through Bismillah Developers
<b>CNIC</b>	34501-6450744-9
<b>Address</b>	House No. 29 N Model Town Extension Lahore
<b>Contact person</b>	Mr. Ali Hassan Jafferri
<b>Contact Number</b>	0300-7929101

## 1.3 THE PROJECT

### 1.3.1 Nature of Project

The said project is the Development of Theme Park namely Thrill City Parks and Resorts, Kalar Kahar by Bismillah Developers. Its salient features have been described later in this Chapter, Chapter 3 and briefly in Executive Summary of this EIA Report.

### 1.3.2 Size of Project

Total area will be 3166 Kanal 1 Marla and 63 Ft which is owned by management of Bismillah Developers. The site will be developed into array of attractions such as thrilling rides, water features, resorts, dining options, a mini food street, health and spa facilities, event spaces, stadiums, health care amenities and sports courts.

### 1.3.3 Location of Project

Said Project is located at Karoli Road, Mouza Khandovah Tehsil Kalar Kahar District Chakwal. The GPS coordinates of site are 32°38'59.96"N, 72°46'54.23"E

### 1.3.4 Cost of the Project

Cost of project has been estimated at Approx. PKR 850 million.

## 1.4 DETAILS OF CONSULTANTS

For the preparation of the Initial Environmental Examination report of the said project, the proponent has hired the services of the environmental consultants; **M/S Green Yasin Environment Consultants**. Team comprising of environmental engineers, chemical engineers, environmental experts and environmentalists has worked on this report. Team comprising of environmental engineers, chemical engineers, environmental experts and environmentalists has worked on this report.

### Environmental Compliance Studies

- Initial Environmental Examination
- Environmental Impact Assessment
- Socio-Environmental Impact Assessment
- Green House Gas Estimation
- Environmental Management Plan
- **Air Monitoring Services**

- Ambient Air Quality Monitoring
- Vehicular Emissions Monitoring
- Indoor Air Quality Monitoring
- Stack Emissions Monitoring
- **Water Analysis/Monitoring Services**
  - Drinking Water Analysis
  - Waste Water Analysis
  - Surface Water Analysis
  - Flow Monitoring

**Contact Details:**

<b>Name</b>	Muhammad Awais on behalf of Green Yasin Environment Consultants
<b>Address</b>	209 – C Faisal Town, Lahore
<b>Contact No.</b>	0092 314 4999563

**1.5 List of Team Members**

Sr. #	Name	Qualification	Roles
<b>Environmental Scientist</b>			
i.	Mian Awais	BS (Hons) Environmental Science	Project Head
ii.	Dr. Afzal Hussain	PhD Environmental Science	Social Survey
iii.	Ms. Usba	M.phil Environmental Science	Report Writing
iv.	Ms. Kiran	BS (Hons) Environmental Science	Environmental Monitoring
v.	Mr. Shahzad	BS. Hons Environmental Science	Environmental Monitoring

**1.6 PURPOSE OF REPORT**

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

Section 12 of Pakistan Environmental Protection Act, 1997 (PEPA, 1997) states *“No proponent of a project shall commence construction or operation unless he has filed with the Provincial Agency an Initial Environmental Examination (IEE) and, where the project is likely to cause an adverse environmental effect, an Environmental Impact Assessment (EIA), and has obtained approval from the Provincial Agency in respect thereof.”* Later on, Punjab Environmental Protection Agency (Review of IEE and EIA) Regulations, 2022 provided the guidelines for categorizing the Projects. The main objectives of this EIA study were:

- To determine and document the state of the environment of the project area to establish a baseline in order to assess the suitability of the said project in that area.
- To identify pre-construction, construction and operation activities and to assess their impacts on environment.
- Provide assistance to the proponent for planning, designing and implementing the project in a way that would strengthen environment, improve ecological resilience, eliminate or minimize the negative impact on the biophysical and socio-economic environment and maximizing the benefits to all parties in cost effective manner.
- To present Mitigation and Monitoring Plan to smoothly implement the suggested mitigation measures and supervise their efficiency and effectiveness.
- To provide opportunity to the public for understanding the project and its impacts on the community and their environment in the context of sustainable development.
- Prepare an EIA Report for submittal to the Environmental Protection Agency, Punjab for according Environmental Approval.

## **1.7 Structure of Report**

This EIA reviews information on existing environmental attributes of the Study Area. Geological, hydrological and ecological features, air quality, noise, water quality, soils, social and economic aspects and cultural resources are included. The report predicts the probable impacts on the environment due to the said project. This EIA also proposes various environmental management measures. Details of all background environmental quality, environmental impact/pollutant generating activities, pollution sources, predicted environmental quality and related aspects have been provided in this report. The structure of the assessment report will be as follow;

- Description of the Project
- Alternatives
- Scoping & Screening
- Description of Environmental and Social Conditions
- Assessment of Environmental Impacts and Mitigation Measures
- Mitigation Measures for Identified Impacts
- Public Consultation
- Environmental Management and Monitoring Plan (EMMP)
- Recommendations and Conclusions

# **CHAPTER NO 2**

# **SCREENING AND SCOPING**

## **CHAPTER 2**

### **SCREENING AND SCOPING**

#### **2.1 General**

This section of the study concentrates on details of the project screening and scoping, and selection of alternatives. The spatial and temporal boundaries are also determined in this section of EIA.

#### **2.2 Type and Category of Project**

As per Review of Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Regulations, 2022, Theme Parks falls under Schedule II category H (2) under “*Urban development and tourism Projects*” hence requiring EIA

#### **2.3 Objectives of Project**

Following are the main objectives of said housing scheme:

1. The primary objective is to entertain guests by offering a wide range of thrilling rides, shows, and attractions.
2. The proposed project will enhance tourism in the area.
3. Proposed project will provide recreational activities and opportunities for visitors and contribute to area’s economic growth.
4. Employment opportunities to the locals will be generated.
5. Proposed project will attract the national and international tourist due to its security and state of the art entertainment activities.
6. Proposed project will highlight the area natural beauty, cultural heritage and tourism appeal.
7. Overall the project will be an addition to tourism revenue of the country. .

#### **2.4 Alternatives**

The analysis of the alternatives is a part of the EIA process to select the best among all possible project options. The alternatives of a project are defined as the options that can help to meet the objectives of a project by different means including alternative project sites, Environmental alternative etc. The key criteria when identifying alternatives is that they should be feasible and reasonable.

Selection of preferred alternative is based on scores of factors including cost, schedule of delivery, environmental and social impact and the cost for their redressal. The drivers that affect potential alternative options and scenarios include: availability of project sites, current technologies; design changes that need to be introduced, operational situation, capital & recurrent costs, environmental & social issues, their potential impacts, and costs of mitigation.

The details of the site alternatives and project alternatives are discussed below

#### 2.4.1 Site Alternatives

No other site alternative was available to be considered as feasible option for the development of theme park as

- The site is well connected to the other parts of the country through Motorway.
- The site is not declared as Environmental Sensitive area
- The land is owned by the management.
- No human settlements displacement or relocation is associated with the project development and operation
- Development of the aforesaid park will provide job opportunities to local people and will improve their socio-economic status of the study area.
- As per development rules, agriculture/ green area can be converted into resorts.

No important religious, archaeological, recreational site or ecologically/declared protected area and human settlement exists within close proximity of the selected site. In view of these facts, it can be concluded that the selected site is best suited for the project, and will not pose any adverse impact or threat on any component of the environment.

#### 2.4.2 Labor

Cheap labor has always been the backbone of the economy of Pakistan. Cheap and ample supply of labor strengthens the industrial and agriculture sector of the country. There are approximately 7 upstream and 6,000 downstream production units in the country which provide employment directly and indirectly to ~ 600,000 people. Of the downstream units, only 700 belong to the organized sector while the remaining 5,300 units operate in the unorganized sector. Also, this project will emphasize to hire local labors during construction and during operational activities as many as possible increasing the occupational status of the area.

Considering the above-mentioned factors, no project alternative can be envisaged.

### **2.4.3 Environmental alternatives**

#### **2.4.3.1 Wastewater Treatment**

No environment sensitive area is present near site, no forest is present so there is no need of Environmental Alternative consideration

### **2.4.4 Economic Alternative**

It is cleared that if such huge investment is being done, energy efficient machineries will be installed which will utilize the low power supply. The building will be constructed by following Green Building Laws which will also incline the graph towards optimal use of resources and enhance the ability to utilize the natural resources.

# **CHAPTER NO 3**

# **PROJECT DESCRIPTION**

## **CHAPTER 3: DESCRIPTION OF PROJECT**

This section of the study concentrates on details of the project and its salient features; such as its location, objective, site layout, cost and magnitude of operation at various phases and process employed for the subject process.

### **3.1 Objectives of Project**

The primary objective is to entertain guests by offering a wide range of thrilling rides, shows, and attractions by adopting sustainable measures and enhance the natural beauty of Kalar Kahar.

### **3.2 Particulars of Project Site**

Details of location of project are provided in table below:

Table 3-1: Particulars of Project Site

<b>Particulars</b>	<b>Details</b>
<b>Latitude</b>	32°38'59.96"N,
<b>Longitude</b>	72°46'54.23"E
<b>Location</b>	Karoli Road, Mouza Khandovah Tehsil Kalar Kahar District Chakwal.
<b>District</b>	Chakwal
<b>Nature of area</b>	Green
<b>Road connectivity</b>	Karoli Road through M-2 Motorway Interchange

### **3.3 Location and Layout of Project**

#### **3.3.1 Location of the Project**

Project site is located at Karoli Road, Mouza Khandovah Tehsil Kalar Kahar District Chakwal. Google map is given below:



Figure 3-1 Location Map of Project Site

### 3.4 Nature of Area

Said area is green in nature and not declared negative/ environmental sensitive.

### 3.5 Land Ownership

The land is owned by management of Bismillah Developers. Property documents are provided in soft form to BFC.

### 3.6 Government Approvals

Management has obtained recommendation letter from *Pakistan Tourism Development Corporation* which is the governing body of tourism in Pakistan. The management has applied for the approvals from different concerned departments. Once the NOCs will be obtained from different departments, will be provided to EPA.

### 3.7 Land Use on Site

The land use on the site will be eco-friendly theme park construction. It will attract a significant number

of domestic and international tourists. It will highlight the regions natural beauty, cultural heritage and tourism appeal contributing to provide employment opportunities to locals and increase in tourism revenue in terms of GDP There is no settlement, preserved area in the proximity of the project area that could be damaged or dismantled infact will enhance the natural beauty of area

### 3.8 Road Access

The said Project area has road accessibility as it is accessible through M-2 Kalar Kahar Interchange which is approximately 15 Km through Karoli Road

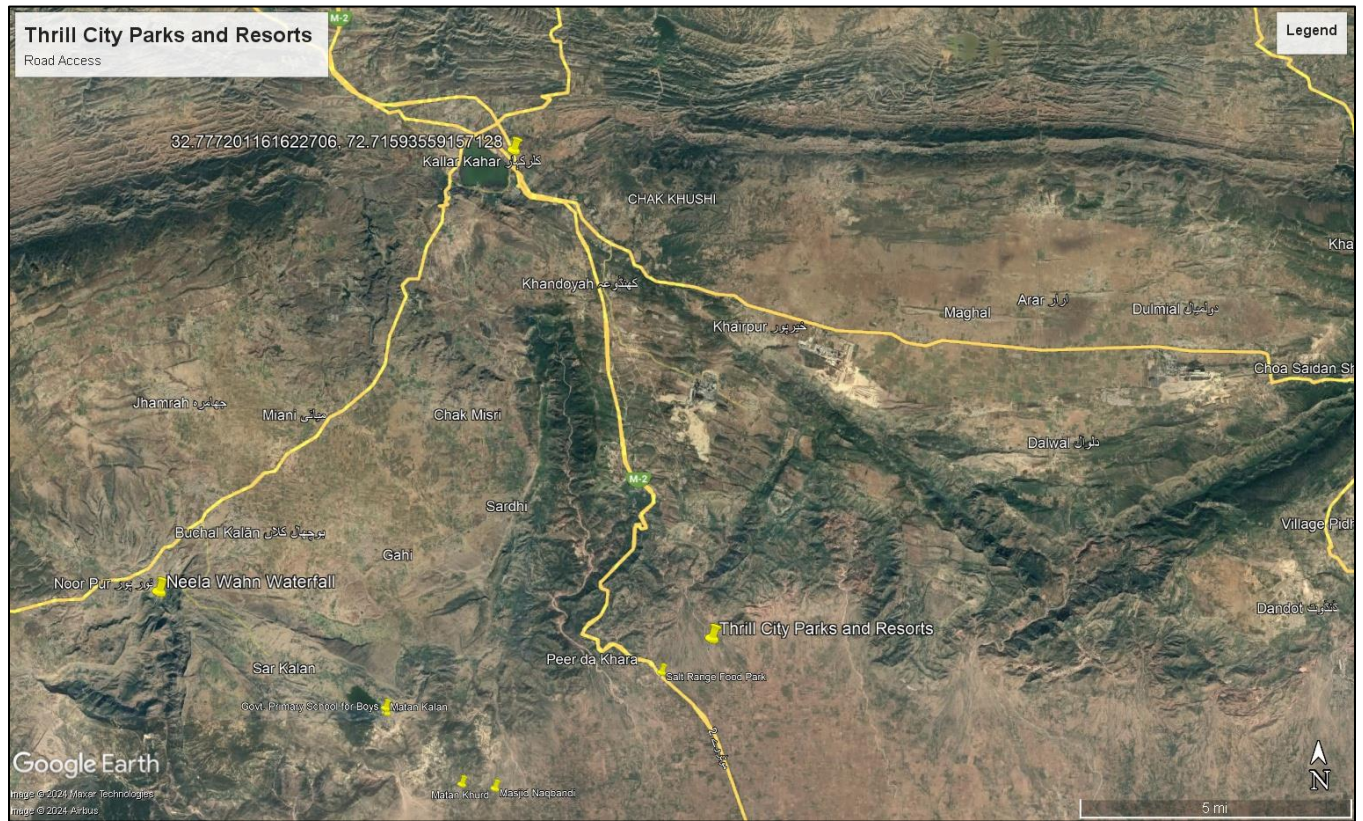


Figure 3-2 Road Access

### 3.9 Vegetative Features on Site

The area around the project area is clear/ bushes are present only. No specific vegetation features were found during visit.

### 3.10 Cost and Magnitude of Operation

Cost includes land cost, Building & Infrastructure cost, machinery cost, land scaping cost. Total cost of the project is PKR 850 Million (Approx.).

### 3.11 Schedule of Implementation

The schedule of implementation for the commencement of the civil work involved for the installation construction and operational maintenance is approximately 12 months and the detail timeline of the construction period is given in Table below:

Table 3-2: Timeline for Project Development

Sr. #	Activities	6 Months			6 Months			6 Months			6 Months		
		8W	8W	8W	8W	8W	8W	8W	8W	8W	8W	8W	8W
1	Detailed Designing	■	■										
2	Mobilization of Contractors			■									
3	Lean Development Period				■	■	■						
4	Peak installation Period							■	■	■	■	■	
5	Commissioning												*
W=96 Weeks													

### 3.12 Description of the project:

A thrill and theme park will be a dynamic entertainment destination designed to provide visitors with an immersive and exhilarating experience. These parks combine elements of amusement, adventure, and storytelling to create an environment where guests can escape reality and indulge in thrilling rides, attractions, and themed environments.

1. Thrilling Rides and Attractions: These attractions are engineered to provide guests with excitement and thrills while ensuring their safety.

2. Immersive Themed Environments: Theme parks excel at creating immersive worlds where visitors can step into fantastical realms, historical periods, or futuristic landscapes. Themed areas are meticulously designed with attention to detail, featuring elaborate architecture, landscaping, and décor that transport guests to another place and time.

3. Live Entertainment: In addition to rides and attractions, thrill and theme parks will offer live entertainment such as stage shows, parades, and character meet-and-greets.
4. Family-Friendly Atmosphere: Thrill parks will cater to guests of all ages, making them popular destinations for families. While there will be plenty of high-intensity rides for thrill-seekers, there will also be gentler attractions suitable for younger children and those who prefer milder experiences. Family-friendly amenities such as playgrounds stadiums, picnic areas, and kid-friendly dining options will ensure that everyone can enjoy a day at the park.
5. Culinary Experiences: State of the art hotels and food street will be developed for better experience.
6. Merchandise and Souvenirs: Visitors can take home a piece of the magic with themed merchandise and souvenirs available for purchase throughout the park. From apparel and accessories to toys and collectibles, there's no shortage of memorabilia to commemorate the experience and keep the memories alive long after leaving the park.

Following entities will be constructed in the said project.

- Reception Office
- Security Office
- Admin Office
- Health club
- Music Club
- Cultural Club
- Mosques
- Restaurants
- Cinema
- Theatre
- Amphitheatre
- Mini Golf
- Horse Riding Club
- Marquees
- Swimming Pool
- Joy Rides
- Family Rides
- Kids Rides
- Scotties
- Water Rides
- Chalets
- Resort
- Guest Houses
- Staff Residences
- Food Area
- Hotel
- Hospital
- Workshop
- Water Reservoir
- Zoo

- Botanical Garden

### 3.12.1 Joy Rides

Joy rides will be constructed in such a way that the safety of workers and guest will never be compromised. Joy ride will consist of

- 50 m Ferris Wheel
- 6 loops Roller Coaster
- Sky Tower
- Energy Storm
- Rotating Bouncer
- Bumper Cars
- Water Slides
- Soft Wheel Trains and many more

### 3.12.2 Stadium

3-4 playing stadiums will be constructed. Cricket ground, foot ball ground, tennis court, badminton court, volley ball court will be developed.

### 3.12.3 Construction of Admin block

Administrative block will an open and large area with many cabins, admin office, reception and waiting area. Circulation space and waiting area together consumes some area. Store and staff dining will be provided adjacent to the office. Cabins in the administrative office section are of different size. It includes different working table to manage the smooth activities of theme park can also be fitted into the space behind the table to give a functionally designed cabin and the rooms are open and well designed. Along with admin and management office, security office will also be constructed

#### **Utility section**

In this section the manger and supervisors will present to maintain the power of theme park. They will monitor all type of machinery, generators and electricity.

#### **Compliance department**

This depart will contain of rooms and cabin also. Some compliance officers, management of compliance, HSE officers will work from here. They will ensure the environment, health and safety police.

### 3.13 Relocation and Rehabilitation Plan

There exists no human settlement within premises of the selected project site to be displaced as a result of the proposed project. Moreover, no structure of any significance stands at the site is proposed to be relocated. The project area is owned by the company. So, no restoration and rehabilitation are required.

### 3.14 List of Machinery

The detailed list of machinery for each process is presented below.

#### *For Construction*

Sr. No	During Construction
1.	Excavators
2.	Jackhammers
3.	Scaffolding
4.	Drilling Rigs
5.	Concrete Mixers
6.	Compactors
7.	Cranes Bull dozers

#### *For Operations*

Sr. No	During Operation
1.	Generators
2.	Ride Maintenance Equipment
3.	Landscaping and Grounds Maintenance Equipments <ul style="list-style-type: none"> <li>• Lawn Mowers</li> <li>• Trimmers</li> <li>• Watering Systems</li> </ul>
4.	Utility Vehicles
5.	Cleaning and Sanitation Equipments
6.	Safety and Emergency Equipments
7.	Sound systems, speakers, lighting equipment, projectors, CCTV cameras

### **3.15 Amenities**

The following social amenities are present at site and the management of the waste (construction waste, solid waste and effluents) is explained in sub-sections below:

#### **3.15.1 Electricity Consumption**

Power Engines will be installed as backup however 10 MW solar system will also be installed to meet the requirements and continuous supply of electricity.

#### **3.15.2 Ground Water Resource**

During constructional and operational phase ground water will be consumed. The water requirement will be fulfilled as per area practices and filtration plants will be installed for drinking purposes.

#### **3.15.3 Management Plans**

Following management plans will be employed to reduce the impact of the proposed activity:

##### **3.15.3.1 Air Emissions**

During construction phase, the machinery working on Project Site may cause air pollution due to release of the pollutants such as; carbon dioxide, NO<sub>x</sub> and SO<sub>x</sub> from the burning of the fossil fuels in the vehicles. Dust may be generated due to the excavation activity. No other impact is envisaged that may pollute the air quality.

##### **3.15.3.2 Wastewater Management and Disposal**

In the proposed project the wastewater will be domestic in nature which will be treated primarily. The treated will be used for horticulture at the site as reserved green areas/ stadiums and golf courses will also be constructed.

##### **3.15.3.3 Waste Management**

The expected waste points are sludge from Guest Houses, public sites hotels. All of this waste will be domestic in nature. Contract with EPA certified body will be done for safe handling and disposal of waste.

##### **3.15.3.4 Emergency Preparedness**

Emergency response preparedness committee will be formulated consisted of heads of all entertainment sections and nominated members. HSE Manager will be responsible for on-site HSE management.

First aid facilities will be available at facility which will include; blankets, hot water bottles, sterilized). A medical unit/ hospital will also be constructed within the theme park to avoid any accident.

#### **3.15.3.5 Safety Trainings**

Skilled, semi-skilled and un-skilled staff will be provided with proper training about the work and safety practices that need to adopt during operations

#### **3.15.3.6 Use of Drugs and Narcotics**

Drugs and narcotics are strictly prohibited during working hours in working area. Smoking will be only allowed during rest timings at properly isolated places.

#### **3.15.3.7 Personal Protective Equipment**

Following Personal Protective Equipment (PPEs) will be provided to the workers:

- Safety Helmet
- Dust Mask
- Safety Gloves
- Safety goggles
- Ear plugs/ muffles

#### **3.15.3.8 Fire-Fighting Arrangements**

All fire protection systems will comply with Local regulations. Fire extinguishers will be placed at all locations and workers will be trained to utilize them in case of need. Fire emergency sensors will also be installed inside the buildings. Underground water tank will also be constructed. Proper fire-fighting plan and emergency exits will be displayed on site.

# **CHAPTER NO 4**

# **DESCRIPTION OF THE**

# **ENVIRONMENT**

## **CHAPTER 4: DESCRIPTION OF THE ENVIRONMENT**

### **4.1 General**

An environmental baseline study is intended to establish a database against which potential project impacts can be predicted and managed later. The EIA of the proposed Project covers a comprehensive description of the project area, including environmental attributes which are expected to be affected by the project, as well as, those which are not expected to be directly affected by the construction and operation of the project. The existing environmental conditions around the proposed project have been considered with respect to physical, biological and socio-economic aspects. Site visits were conducted to survey the field area and to collect environmental data on physical, biological and socioeconomic parameters. Further, consultations were held with the general public and stakeholders of the project area in order to seek the public opinion on the implementation of the proposed project

### **4.2 Methodology**

The methodology employed to collect the baseline data and information regarding the social structure and various related parameters as discussed in sub-sections below:

#### **4.2.1 Data Collection**

The primary data was collected by visiting the project area and its communities in its nearby vicinity. The secondary data regarding physical parameters (topography, geology, seismology, and climate) was obtained by visiting relevant various government departments and their official websites. The biological parameters such as flora and fauna were studied by preparing a floristic list based on visual observation and fauna was studied by using opportunities approach. The species were recorded with reference to their 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 and Non-Government Organizations (NGOs). The socioeconomic aspects were studied and analyzed by studying detailed village profile and by conducting household surveys.

#### 4.2.2 Social Survey

The purpose of social survey was to record the present condition of the people living in the project area and to assess the expected project impacts on their life, subsistence systems and socio-cultural conditions. Prior to conducting the field surveys, the following steps were taken:

- Clear boundaries of the project area were identified
- Decided the sampling procedure in order to draw a representative sample size of the target population and households
- Developed the tools for data collection i.e. questionnaires to assess the socio-economic status of the area

#### 4.2.3 Sampling Design

Social baseline data of the persons residing in the study area has been estimated and collected through random sampling by using pre-developed questionnaires.

#### 4.2.4 Questionnaires

In order to test the validity and reliability of the proposed questionnaires, they were reviewed to assess whether questions needed to be clarified, changed or re-sequenced and then a final editing of questionnaires was conducted prior to their application in the project area.

#### 4.2.5 Data Editing and Analysis

The filled questionnaires and recorded information were compiled by the same field investigators who were involved in the data collection. This was done immediately after completing the field investigations. Data sets were processed. Analysis of the data and preparation of conclusions in the minimum possible time was done using statistical techniques of data analysis.

#### 4.2.6 Review of Legal and Administrative Framework

The objective of reviewing legal and administrative framework is to obtain information on all legislation pertaining project development. The Socio-Environment Team of Tti Testing Laboratories reviewed the

environmental policies, national, international and provincial laws and guidelines relevant to the development of project which helped in systematic identification of impacts.

#### **4.2.7 Baseline Conditions**

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.

### **4.3 Physical Resources**

The physical resources consist of existing land form and land use at the project site including geology, hydrology, meteorology and climatology. The pre-project condition (i.e. baseline) of these components of the physical environment is described in detail. To identify the potential impacts on the physical, biological and socio-economic environment that is likely to arise from the project activities.

#### **4.3.1 Geography and Geology**

The land comprises mainly hills, plateaus, plains and deserts with river Jhelum flowing on its East. Chakwal district borders the districts of Rawalpindi and Attock in the north, Jhelum in the east, Khushab in the south and Mianwali in the west.

The southern portion runs up into the Salt Range, and includes the Chail peak, 3,701 feet (1,128 m) above the sea and the highest point in the District. Between this and the Sohan river, which follows more or less the northern boundary, the country consists of what was once a fairly level plain, sloping down from 2,000

feet (610 m) at the foot of the hills to 1,400 feet (430 m) in the neighborhood of the Sohan; but the surface is now much cut up by ravines and is very difficult to travel over.

Lying at the beginning of the Potohar plateau and the Salt Range, Chakwal is a district and the terrain is mainly hilly, covered with scrub forest in the southwest, and leveled plains interspaced with dry rocky patches in the north and northeast.

#### 4.3.2 Soils

Soils form major part of environment. Their fertility and other special characteristics have great relationship with environment. Climate has great influence on the formation of soils; therefore, study of these factors is of great importance. Soil is dynamic layer in which many complex physical, chemical and biological activities are taking place. Therefore, soil is a dynamic changing body

Soils are made up of solids, liquids and gases. The solid part of the soil is made up of both inorganic and organics. While weathering of rocks make inorganic particles, the organic solids consist of living and decayed plants. To classify the entire soils in Pakistan, the Soil Survey of Pakistan has divided the entire country into nine ecological zones.

#### 4.3.3 Climate

Like in other major parts of the province of Punjab, the site observes four seasons- summer, winter, spring and autumn during twelve months of the year. The climate in Chakwal is considered to be a local steppe climate. During the year there is little rainfall. This climate is considered to be BSh according to the Köppen-Geiger climate classification. The temperature here averages  $22.3^{\circ}\text{C}$ . About 519 mm of precipitation falls annually. The driest month is November, with 7 mm of rain. Most of the precipitation here falls in August, averaging 133 mm.

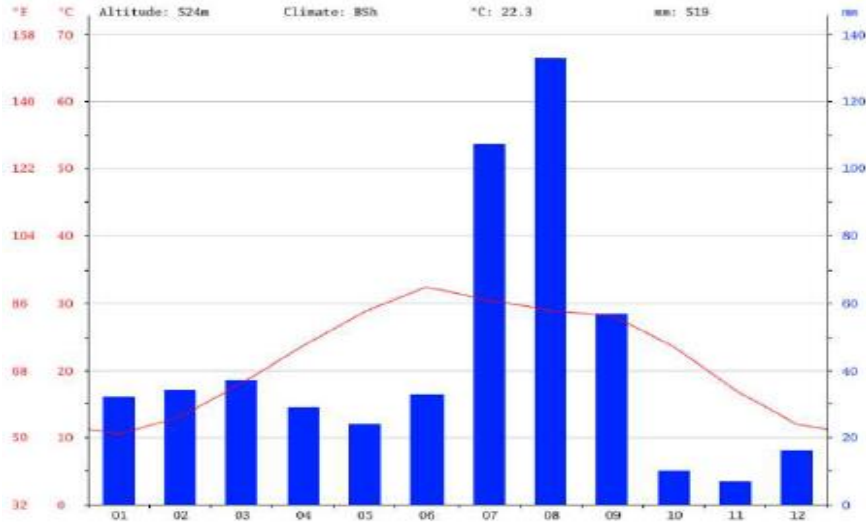


Figure 4-1 Average Annual Temperature of Chakwal (Source: Climate-data.org)

#### 4.3.3.1 Rainfall

Chakwal lies within the monsoon range, and apart from occasional rainfall, there are two rainy seasons: the first, caused by the monsoon winds originating from the Bay of Bengal, begins from 15th of July and continues upto around the 15th of September; the second, caused by Mediterranean winds lies in the last two weeks of December and the first two weeks of January. The average rainfall is 22 to 25 inches. Choa Saiden Shah subdivision has the maximum rainfall in the district.

#### 4.3.3.2 Seismicity of the Project Area

According to seismic zoning of Pakistan the project area lies in seismic zone 2B and represents minor damage. Earthquake with high intensity for a fundamental period of more than 1 second may cause

damage to infrastructure.

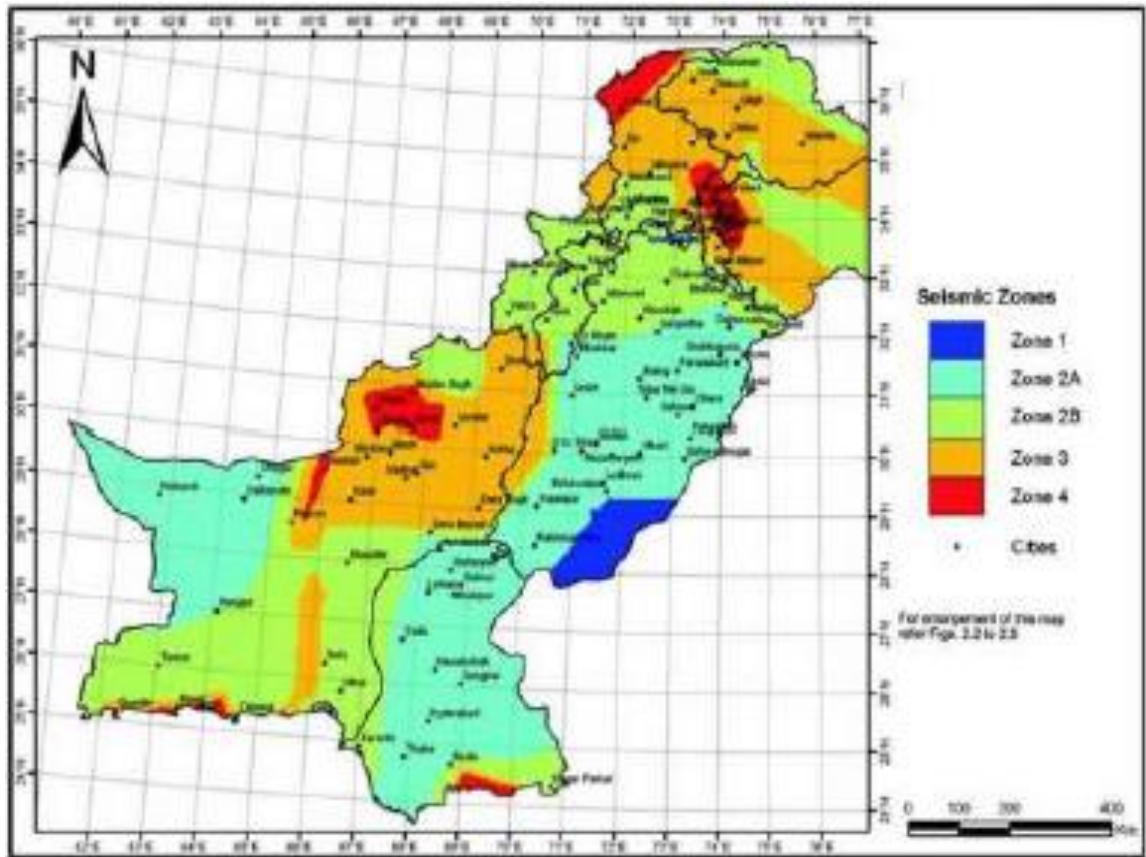


Figure 4-2 Seismic Zones of Pakistan

#### 4.4 Water Resources

There are four wetlands near the project site namely Katas Raj Temple Lake, Kallar Kahar Lake, Khokhar Zer Dam and Kot Raja Dam.

##### *Katas Raj Temple Lake*

Water from this pond has been used to irrigate the orchards of loquats in Choa Saiden Shah, a small town and union council in Chakwal district. It also supplied water to the nearby town for drinking purposes but now its own survival is at stake, with unsustainable development threatening its very existence. Situated in Punjab’s Salt Range near Kallar Kahar (at an altitude of 2,000 feet), the Katas Raj Temple complex is considered the second-most sacred shrine in Hinduism. The pond from the Hindu legend occupies an area of two Kanals and 15 Marlas, with a maximum depth of 20 feet.



Figure 4-3 Katas Raj Temple Lake

### ***Kalar Kahar Lake***

Kallar Kahar Lake is next to Sakh Aubau and is located in Punjab, Pakistan. Kallar Kahar Lake has a length of 3.81 km. Kallar Kahar Lake is the most important reason for Kallar Kahar to be famous among tourists. It is a saltwater lake. It is situated at an altitude of 1500 ft. above sea level. The lake spreads over an area of 8 km<sup>2</sup>. The maximum depth of lake is about 4-5 ft. People enjoy pedal boating and motor boating on the lake. They also come here to spend picnics and holidays.



Figure 4-4 Kalar Kahar Lake

***Khokhar Zer Dam***

The Khokhar Zer Dam lies in the south of Chakwal subdivision in Pakistan. Its capacity is 2602 A ft. and it irrigates 1230 acres. Water supplied to Chakwal city also comes from this dam



Figure 4-5 Khokhar Zer Dam

## **Ground water**

Ground water resources are found hidden and camouflaged into the surface of earth in the form of mobile and immobile state and exist as shallow and deep wells, confined and un-confined aquifers, springs and watersheds. Ground resourced waters are not easily susceptible to natural and anthropogenic derived contamination caused by Chemical/ Biological pollution and thus is directly used for sensitive applications such as drinking even it is un-treated. The project area lies in the district of Chakwal; the groundwater table normally exists approximately 5 feet to more than 20 feet below the GSL.

## **4.5 Ecological Environment**

Faisalabad is enriched with the presence of natural flora and fauna, although with the growing population and development activities, the presence of the some has been somewhat affected. They are discussed in detail below:

### **4.5.1 Aquatic Flora and Fauna**

The project area has different lakes, Nallas and rivers. Fishes and other aquatic life is present in these water bodies.

### **4.5.2 Flora**

There is a very wide range of plant and animal species found in the district. Amongst plants, the species which are most abundant in the district are Kau (*Olea cuspidata*), Phulai (*Acacia modesta*), Sanatha (*Dodonesviscosa*), Gurgura (*Monothecabuxifolia*), and Pataki (*Gymnospo Riaroyleana*). The general vegetation consists of dry deciduous scrub. The grass species which are dominant in the area are Sariala (*Heteropogancontortus*), Khawi, Mesquite (*Prosopis juilfloro*), and Karir (*Capparis sphylla*). All these plant species are found throughout the district.

## **Environmental Monitoring**

Laboratory analysis for environmental monitoring of proposed site is done in order to check the baseline conditions and pollution load. In this connection M/S Environment Services Pakistan (ESPAK) which is EPA certified laboratory, was engaged to carry out environmental monitoring of wind speed, air quality, drinking water quality, noise level and particulate matter concentration in the project area.

### 4.5.3 Sampling Sites

Samples of water, noise and air for testing according to the testing guidelines of Punjab-EPA. It also defines number of samples as well as the number of sites from where samples were collected.

## 4.1. SOCIO-ECONOMIC RESOURCES

This section provides collective information about the existing socio-economic and environmental condition of the project area within the 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 and Monitoring Plan (EMMP). The study also helped to assess the positive or adverse impacts on local community.

### 4.5.4 Socio-Economic Profile of Study Area

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.

### 4.5.5 Social and Public Amenities Available

The social and public amenities present in the area are given below:

#### a. Physical structures

There is no population living around the project area. The land use on the project site is open. The people in this area are deprived of basic facilities like health, proper sewerage and sanitation facility, medical facilities, provision of safe drinking water, etc.

#### b. Religious Structure

There is no shrine, structure or any other religious infrastructure present in the said project site that could be damaged and dislocated due to the project establishment.

#### c. Protected Structures

There is no protected site, structure or any other social infrastructure present near project site.

#### d. Cultural Heritage and Community Structure

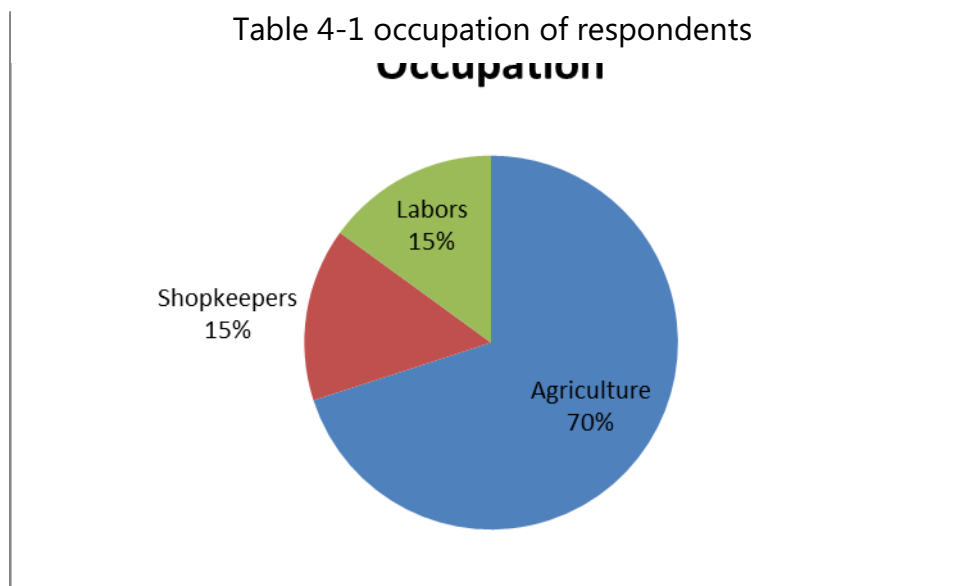
GYEC team also visited the study area but did not find any cultural heritage and community structure within the study area that could be impacted due to the proposed project.

#### 4.6 Quality of Life Values

Socio-Economic Questionnaire and Environmental Checklist were used as survey tools by the GYEC survey team to collect desired information. Graphical representation of results of Socio-Economic Survey is given below:

##### 4.6.1 Occupation of Respondents

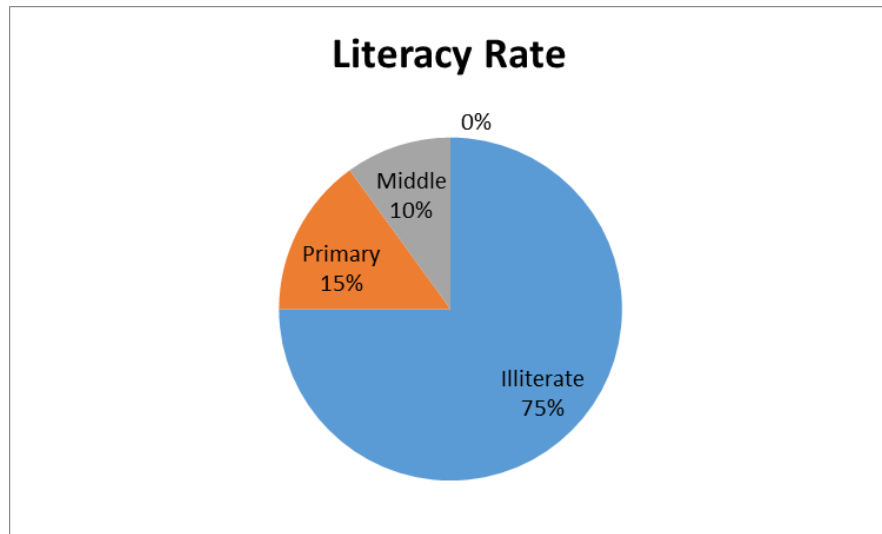
Majority of the respondents (70%) are attached with agriculture, 15% shopkeepers and remaining 15% are labors. During survey, efforts were made to interact with people representing all walks of life. The detailed graphic representation of occupational status is given below:



#### 4.2. Literacy Rate

From survey results, it was found that 75 % of the studied population was illiterate, 15% was up to primary level, 10% studied up to middle level.

Table 4-2 literacy rate



#### 4.3. Government Economic Agenda

The present policies of the Government (Both Federal & Provincial) favor economic development. These policies include the liberal import policy, deregulation of state control, provision of incentives, establishment of industrial units and infrastructural development under CPEC.

The district has Coal, Salt, Cement, Chemical Factories, Agricultural Implements, Cement, Cement Products, Flour Mills, Jute Textile, Packages, Rice Mills, Sewing Machines Parts, Soda Ash, Sugar, Textile Spinning, Vegetable Ghee / Cooking Oil and Woollen Textile Spinning /Weaving.

#### 4.4. Educational facilities

In the project area some educational institutions are found which include Govt. Girls primary School, Govt. Boys Elementary School. Educational facilities nearby project site are:

#### 4.5. Site Suitability

The site does not fall in environmental sensitive area and all commodities are at a suitable distance from project site as they will not have 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 proposed project. .

# **CHAPTER NO 5 STAKEHOLDER CONSULTATION**

## **CHAPTER 5: STAKEHOLDER CONSULTATION**

### **5.1 GENERAL**

Public consultation refers to the process by which the concerns of local affected persons and others who have plausible stake in the environmental 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 IEE and EIA Review Regulations, public consultation is mandatory for any socio-environmental study.

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

- Share information with stakeholders on said project installation and operation
- To assess the impacts on the physical, biological, and socio-economic environment
- Understand stakeholder concerns regarding various aspects of the project
- Understand the perceptions, assessment of social impacts and concerns of the communities of the project area
- Find out the awareness level and situation of acceptability to identify any issues for the implementation of the said project
- To invite people to express their views about the positive/negative impacts on their life styles and environment

This report includes all the comments, which were taken into account in preparing the definitive development concept for the establishment of said project.

### **5.2 OBJECTIVES OF CONSULTATION**

Public consultation plays a vital role in studying the impacts said project on stakeholders in its successful implementation and execution. It provides an opportunity to exchange knowledge with the all stakeholders. Referring particularly to a project related to environmental assessment, involvement of public is all the more essential, as it leads to better and more acceptable decision-making. The overall objective of the consultation with the stakeholders is to help verify the environmental and social issues, besides technical ones, that have been presumed to arise and to identify those which are not known or are

specific to the project. In fact, discourse with many who have thoroughly observed the site conditions in the pre-developmental phase, goes a long way in updating the knowledge and understanding.

### **5.3 IDENTIFICATION OF STAKEHOLDERS**

All the people who are directly or indirectly affected or concerned with the project are the stakeholder. Besides the living population of the surrounding areas, some other stakeholders were identified and contacted. They are the key players including; shops owners, vendors, public offices, school, university, hospitals,. Not only published material (Both brief and comprehensive literature were obtained on request) but also noted their views and the concerns. Following stakeholders are identified for this project:

Project stakeholders include the settled families, either property owners or the tenants, businessmen (land owners, traders, shopkeepers, vandors, transporters, restuarent owners etc.), employees of the commerical entities. PAPs are of two types, for instance:

#### **5.3.1 Direct**

In this case, the PAPs are those who will be benefited directly by project. No disturbance on the local community is being foreseen due to the installation of the said plant.

#### **5.3.2 Indirect**

Indirect impact will occur on those who are living or doing business within project area of influence. Indirect respondents include;

- ✓ Government agencies responsible to deal with the project related activities
- ✓ Government Agencies directly, indirectly or widely involved in the execution and monitoring of the said project
- ✓ Workers of political, cultural, religious or social scientific bodies, directly or indirectly related

### **5.4 PUBLIC DISCLOSURE**

Public disclosure is the outcome of all such activities where public is involved at least in the information sharing process. This is an integral part of that process so before the proponent applies for NOC to the EPA, this disclosure will be distributed properly among all stakeholder. It is the responsibility of the proponent and the consultants to display public disclosure document at prominent places where community has easy access.

## 5.5 CONSULTATION PROCESS

Information disclosure, public consultation and discussion regarding the various aspects of the project with the people of the area are necessary. This process is intensified during the EIA Studies, and separate rounds of public consultations were held. Surveys were carried out in order to investigate physical, biological and socio-economic resources falling within the immediate area of influence of the project.

Primary data collection included:

- Data collection regarding the socio-economic condition of the study area
- Pretesting of socio-economic survey tools in the field
- To consult the locals for collection of information on biological environment

Various meeting with the stakeholders were held the following objectives:

- Share information with stakeholders on the said project and expected impacts on community in the vicinity of the project
- Understand stakeholders' concerns regarding various aspects of the project, including the existing condition of the upgrading requirements, and the likely impact of construction and operation activities
- Provide an opportunity to the public to influence the project design in a positive manner
- Obtain local and traditional knowledge, before decision making
- Increase public confidence about the proponent, reviewers and decision makers
- Reduce conflict through the early identification of controversial issues, and work through them to find acceptable solutions
- Dissemination of information through discussions, education and liaison
- Documentation of information narrated by the stakeholders and mitigation measures proposed by the stakeholders
- Incorporation of public concerns and their address in the EIA; and eliciting their comments and feedback

### 5.5.1 Consultation Methodology

The methodology adopted for consultations is summarized below.

### **5.5.1.1 Consultation Material**

The main document for distribution to stakeholders during the consultations was Social Impact Assessment Interview. The filled Survey forms of stakeholders are annexed

### **5.5.1.2 Consultation Mechanism**

Primary stakeholders were consulted during informal and formal meetings held in the project area. The consultation process was carried out in the Urdu language. During these meetings a simple, non-technical, description of the project was given, with an overview of the project's likely human and environmental impact. This was followed by an open discussion allowing participants to voice their concerns and opinions. In addition to providing communities with information on the said project, their feedback was documented during the primary stakeholder consultation. The issues and suggestions raised were recorded in field notes for analysis, and interpretation.

By reaching out to a wider segment of the population and using various communication tools such as participatory needs assessment, community consultation meetings, focus group discussions, in-depth interviews, and participatory rural appraisal EIA involved the community in active decision-making. This process will continue even after this EIA has been submitted, as well as during future EIA in which similar tools will be used to create consensus among stakeholders on specific environmental and social issues.

Secondary stakeholder consultations were more formal as they involved government representatives and local organizations, consulted during face-to-face meetings. They were briefed on the EIA process, the project design, and the potential negative and positive impact of the project on the area's environment and communities. It was important not to raise community expectations unnecessarily or unrealistically during the stakeholder consultation meetings in order to avoid undue conflict with community's leaders or local administrators. The issues recorded in the consultation process were examined, validated, and addressed in the EIA report.

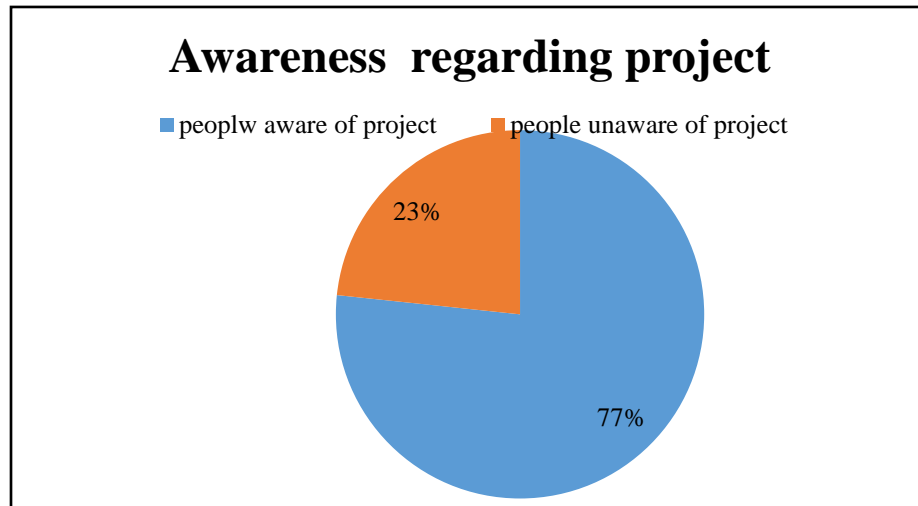
### **5.5.2 Primary Stakeholders Consultation**

The community consultations were conducted with the community members outside their settlements to encourage and facilitate their participation.

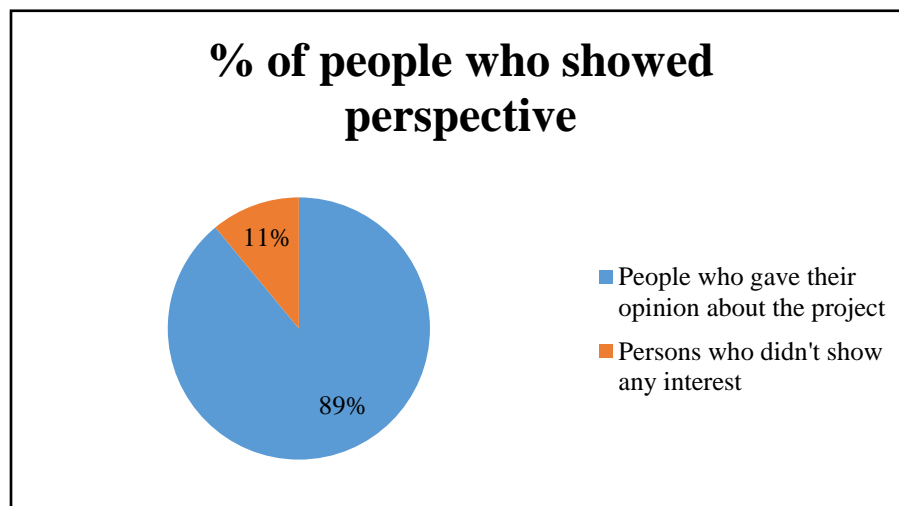
### 5.5.2.1 STAKEHOLDER CONCERNS AND RECOMMENDATIONS

The finding of the community consultation has been addressed in various sections of EIA. Mitigation plan has been incorporated into EMP. The summary of consultation with various stakeholders is given below

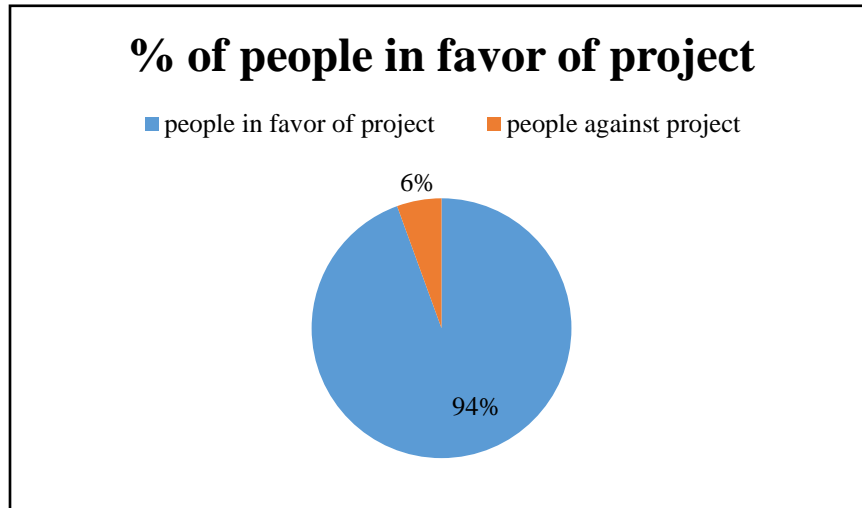
Out of total respondents of, 77% knew about the project whereas 23% were not aware of the project planning and implementation. All people were then briefed about the project.



89% commented their views about the project and 11% didn't respond.



Out of 89%, majority of the people (about 94%) favored the construction of the project keeping in view its importance and 6% people showed pessimistic views in general but mitigation measures and solutions to their concerns were provided.



Majority of people were in favor of project. They said that project will result not only in direct jobs opportunities for locals but also will enhance subsidiary business, trade, education, and agriculture and community development. The people were of the view that theme park might also elevate education standards, struggle for career enhancement besides improvement in standard and quality of living in area. People were also of the view that proposed project may also be instrumental in connecting the local people with major cities and will result in increase in GDP.

It will increase the tourism visitor experience of the site and area will be developed

## 5.6 STAKEHOLDERS CONSULTED

Names of consulted stakeholders are given in table below:

Table 5-1: List of consulted stakeholders

Sr. No	Stakeholder name
1.	Muhammad Hakim
2.	Abdulaziz
3.	Asghar Ali
4.	Kashif Ali
5.	Parvez Hussain
6.	Muhammad Naeem

7.	Muhammad Zulfiqar
8.	Muhammad Waqar
9.	Muhammad Arif
10.	Muhammad Javed
11.	Muhammad Jalal
12.	Muhammad Tofail
13.	Syed Barat Hussain
14.	Arif Khan
15.	Basheer Hussain
16.	Saddam Hussain
17.	Muhammad Javed
18.	Muhammad Aslam
19.	Hameed Ahmad
20.	Muhammad Zafar
21.	Muhammad Maqsood
22.	Muhammad Aslam

### 5.6.1 Secondary Stakeholders Consultation

The consultations were carried out with the local government officials and officials of the following departments:

1. District Office Environment
2. Proponent
3. Environmental Precautionar

Comments and recommendations of all government representatives are presented in table below:

Table 5-2 Stakeholder Consultaions with officials

S #	Participant	Designation	Concerns/Remarks
<b>Responsible Authority</b>			

1	Mr. Arbab	Inspector Environment	<ul style="list-style-type: none"> <li>• Environmental enhancement measures such as; Tree plantation, monitoring and safety should be ensured</li> <li>• HSE plan should be enforced strictly</li> <li>• Should work for local people benefit</li> <li>• Preventive measures should be adopted to avoid any unfortunate incident</li> </ul>
<b>District Forest Office</b>			
1	Chaudhry Muhammad Azeem Zafar	Divisional Forest Officer	<ul style="list-style-type: none"> <li>• They expect many positive, conducive and constructive impacts on socio-economic life of local community regarding jobs, business opportunity and social structure development.</li> <li>• They were of opinion that project would improve area's development through development of existing infrastructure etc.</li> <li>• HSE measure should be adopted to protect the workers from the risk and hazards</li> <li>• Range officer had view that air quality of</li> <li>• Divisional forest officer recommended Kikar and Jund trees for post construction plantation in project area.</li> </ul>
2.	Abdulghaffar	Range Officer Qaidabad	
<b>District Office Wildlife</b>			
1	Khalid Mehmood	District Wildlife Officer	<ul style="list-style-type: none"> <li>• Wildlife officer told that no wildlife sanctuary, migratory birds, game reserve and red species are present in project area.</li> <li>• An effective EMMP should be designed and enforced with true spirit</li> </ul>
<b>Representative of Proponent</b>			
1	M. Ali Hassan Jafferi	Representative of Proponent	<ul style="list-style-type: none"> <li>• Local employment will be ensured</li> <li>• Area will be protected maximally.</li> <li>• No waste will be dumped improperly</li> <li>• Quality will be ensured</li> </ul>
<b>Environmental Practitioners and Experts</b>			
1	Dr. Muhammad Faqir Irfan	PhD. Environment Lawyer	<ul style="list-style-type: none"> <li>• Health and safety arrangements must be provided</li> </ul>

# **CHAPTER NO 6**

# **POTENTIAL ENVIRONMENT**

# **IMPACTS AND MITIGATION**

# **MEASURES**

## **CHAPTER 6: POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

### **6.1 GENERAL**

This chapter describes the potential environmental and social impacts of the proposed activities, predicts the magnitude of the impact and assesses the significance. The main intention of this section is to provide the mitigation measures that need to be adopted wherever necessary, to reduce, minimize, or compensate for the negative impacts.

### **6.2 IDENTIFICATION OF POTENTIAL IMPACTS**

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

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

### **6.3 CLASSIFICATION OF IMPACTS**

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

Category of Receptor	Description
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Community	People their social and cultural values, aspirations and archaeological sensitivity
Land and Soil	Land resources, soil resources
Air Quality	Ambient air quality
Water Resources	Ground and surface water resources
Ecosystem	Vegetation, wildlife and biodiversity

#### 6.4 SCOPING CRITERIA FOR IMPACTS

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

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

#### 6.5 METHODOLOGY FOR IMPACT ASSESSMENT

The impact assessment methodology defines three levels of consequences (or severity) and likelihood (chance of occurrence) i.e. Low, Moderate/Medium or High. The significance of an impact is determined on the basis of the level of consequence and likelihood of the impact.

Table 6-1: Definitions of severity and likelihood of impacts

Level	Severity of Impact (Consequence)	Likelihood
High	Serious / catastrophic damage to local and regional environment Serious threat to corporate reputation/ profitability / ability to do business	High likelihood of occurrence during lifetime of operation Regular / continuous part of operations
Moderate	Measurable damage to the environment Potential to affect reputation / cost Reduced efficiency	Moderate possibility of occurrence during lifetime of operation Periodic / occasional part of operations
Low	Negligible damage to the environment No risk to business	Unlikely to occur during lifetime of operation

Table 6-2: Impact Significance Matrix

		Likelihood (Probability of occurrence)		
		High	Medium	Low
Impact (Consequence)	High	High	High	Medium
	Medium	High	Medium	Low
	Low	Medium	Low	Low

The prediction of impacts also includes the duration of impacts in terms of short-term or long-term, nature of impact, geographical location of the impact, reversibility of the impact. The criterion for impact assessment is illustrated in the Table

Table 6-3: Impact Assessment Criteria

Impact Characteristics	Categories
Nature of the Impact	<b>Direct:</b> The environmental parameters that are directly affecting by this project.

	<b>-Indirect:</b> The environmental parameters change due to the combinational effect by project and environmental impacts
Duration of the Impact	<b>Short term:</b> Lasting only till the duration of the project <b>Medium term:</b> Lasting from a few months to a year <b>Long term:</b> Lasting for a period much greater than medium term impacts
Geographical Location of the impact	<b>Local:</b> Within the area of project i.e. operation site and access roads <b>Regional:</b> Within the boundaries of the project area <b>National:</b> Within the boundaries of the country
Reversibility of the impact	<b>Reversible:</b> When a receptor resumes its pre-project condition <b>Irreversible:</b> When a receptor cannot resume its pre-project condition

### 6.5.1 What is the problem?

The project is about development of eco-friendly theme park by Bismillah Developers. The major impact associated with the construction and operation of said project includes solid waste management, wastewater management, and fire-fighting arrangements.

### 6.5.2 When problem will occur and when it should be addressed?

The impacts from the said operation mainly occur during the construction phase of the project. These issues include; noise generation, fugitive dust emissions, solid waste management, wastewater disposal, top-soil removal, Health and Safety issues and change in the geographic features of the area. These all problems should be addressed on-site where they are being generated, to avoid the residual or adverse impacts. The tell the description and impacts to Government and public by reports and public hearing.

### 6.5.3 Where problem should be addressed?

The problem will be generated from site development and operation of the project. So, it should be addressed on source, i.e. at site within the same timeframe.

### 6.5.4 How the problem should be addressed?

Problem should be addressed with its full detail i.e. its magnitude, possible impacts and problem, long time effect, environmental impacts, and proper mitigation measures will be provided according to the nature of the impacts/problems.

### 6.5.5 Ways of Achieving Mitigation Measures:

Following ways will be adopted to reduce the impacts of the said project:

#### 6.5.5.1 Changing in Planning Design

The design of project is developed considering environmental risk and hazards. As the area is owned by the proponent and will be developed into green recreational park. Moreover, there is no endangered and threatened species present in the project area. Any human settlement or infrastructure was not dislocated or dismantled due to the project development. The proper roads and transportation system along with migration measures is there. Not any impact will affect the urbanization. Hence, there is no need to change the design of the project.

#### 6.5.5.2 Improved Management and Monitoring Practices

The anticipated impacts will be reduced significantly by adopting better management activities, as it will be carried out for the betterment of the society. While environmental monitoring will be conducted on the regular basis to keep the sources of the air pollution, wastewater generation, noise and public nuisances in-check. All the migration measure and advance technology will be implanted to mitigate the impact. All the practices will meet the Punjab environmental standards and international standard like OSHA and EPA.

#### 6.5.5.3 Compensation in Money Terms

There is no protected or environmentally sensitive area present within 3.0 km vicinity of the project that could be impacted. Hence, no compensation in the monetary terms is required.

#### 6.5.5.4 Replacement/Relocation/Rehabilitation

The project site is owned by the proponent and reserved for the said development. No replacement, relocation and rehabilitation is required for the commencement of the aforesaid project.

## 6.6 Impact Summary

Environmental Parameters	Impact Assessment during Different Phases	
	Construction	Operational
<b>A: Physical</b>		
<b>Land Resources</b>		
Soil Erosion and Contamination	0	0
Transportation	-1t	-1 t

Solid Waste and By-Products	-1t	+1p
Land Use	NA	+2
<b>Air Resources</b>		
Noise Pollution	-1t	-1p
Air Emission	-2t	0
Dust	-1t	0
<b>Water Resources</b>		
Ground Water	-1t	-1p
Surface Water	NA	NA
Wastewater	-1t	-1p
<b>B : Ecological</b>		
<b>Flora</b>		
Tree Cutting	-1t	+2p
<b>Fauna</b>		
Terrestrial Fauna	N/A	+2p
<b>C: Socio-Economic</b>		
Employment Opportunities	+1t	+2p
Land Value Appreciation	N/A	N/A
<b>D: Hazards</b>		
Physical Hazards	-1t	-1p
Health and Safety	-1t	-1p
<i>Legends: 1= Low; 2= Medium; 3= High; 4= Extremely High; NA= Not Applicable; t= Temporary; p= Permanent; app= Applicable; 0= Negligible</i>		

## 6.7 IMPACTS DUE TO PROJECT LOCATION

The said project site is located in green area. As all the rules and migration procedure is applied. The project site is owned by the company. Further, the project site is devoid of any human habitation hence evacuation of the project-affected persons will not be involved in this project. Thus, no resettlement and rehabilitation issues will be involved in the said project. This project will be developed while undertaking minimum cutting for making terraces for construction while making minimum modifications in the terrain conditions and implementing environmental measures.

The topsoil removed from the site will be restored in dumps during construction period and in the post construction phase. The top soil will be spread on the unbuilt area and tree plantations and green belt development will be taken up. As the top soil removed from the site will be reused for the growth of plants, no adverse impact will be envisaged due to removal of topsoil from the site.

## 6.8 DESIGN PHASE

In general, the design of the said 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 will be provided at design level for the reduction of impacts. Design of the said project will adhere to all standard technical requirements in order to avoid adverse impacts on the environment and human health. Efficient infrastructure will be developed. Procurement of construction materials from approved dealers will be ensured.

## 6.9 IMPACTS ASSOCIATED WITH CONSTRUCTION PHASE

Sr. No	Aspect	Impacts	Mitigation Measures
1	Economy Improvement	<p>During construction phase, employment opportunities for local people will be generated.</p> <p>Raw material will be obtained locally increasing the economic value of area.</p>	No specified mitigation measure is required. All of labor rules will applied on them.
2	Air Quality	<p>During construction phase, suspended particulate matter are the main pollutants during the site development activities such as leveling of land, filling activities, transportation of construction material to the project site from various places.</p> <p>Fugitive emissions will be observed due to vehicular movement. But it</p>	<p>Dust emissions will be minimized through strict enforcement of onsite speed controls.</p> <p>The routes will be sprinkled with water regularly to reduce the amount of dust generated by construction vehicles.</p> <p>Construction machinery will be kept away from the walkways.</p>

		will be negligible or temporary phenomenon.	<p>All the vehicles carrying the construction material will be fully covered and well maintained.</p> <p>The inspection of the vehicles and construction machinery will be done on regular basis.</p> <p>All vehicles and construction machinery will be properly tuned, serviced and monitored on regular basis.</p>
3	Water Quality	During construction phase, water will be required for construction of structures, sprinkling on roads for dust suppression, domestic uses of construction workers	During this phase, water conservation practices will be given proper consideration.
4	Relocation of Utilities	The construction will not relocate the existing public utilities.	Construction site will make ways for public utilities at the site.
5	Solid Waste Generation	During excavation of the site for foundation works and landscaping, solid waste will be generated. The waste consisted of metal cuttings, rejected materials, surplus material, paper bags, cement bags, empty cartons and broken glass pieces.	<p>Recyclable material will be separated at source.</p> <p>The cement bags and other such items will be handed over to approve contractors on weekly basis.</p> <p>Other waste will be accumulated at waste area and will be taken by the municipal waste management company.</p>

6	Noise Pollution	During construction phase, the major sources of noise will be due to operation of construction equipment. The anticipated noise will be mostly confined to the facility itself.	<p>Several mitigation measures will be considered. For this purpose, most of the construction works will be done in day time.</p> <p>The advance machinery will be recommended to lower the noise and work efficiency.</p> <p>Proper PPEs (ears plugs and ears muffles) will be given to workers so that exposure to noise will be less.</p>
7	Ecology	Bushes and trees will be cut	As the site will be developed into theme park, all ecology will be restored.
8	Worker's Health, Safety and Environment	The construction activities had the potential to pose negative impact on the health and safety of workers in case of unfavorable working conditions.	<p>The contractor ensured that the workers and labors will be trained in safety procedures for all relevant aspects of the construction.</p> <p>Workers will be provided with proper safety equipment which were required on the basis of nature of the work.</p> <p>First aid kits will be kept available on the site to ensure safe working environment for the labors and workers.</p>

			<p>As per the requirement warning signs will be displayed in local language.</p> <p>Proper fencing will be done around the site.</p> <p>A safety officer will be appointed at the site for risk assessment and ensure the safety of workers.</p>
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### 6.10 IMPACTS ASSOCIATED WITH OPERATION PHASE

During the operation phase different type of the process will be done. The possible impacts of the operation is being evaluated as down here.

In this section, the combined environmental and socio-economic impacts associated with the said process of this project in operation phase are discussed. The impacts that are discussed are as follows:

#### Environmental Impacts

- Air emissions
- Noise
- Traffic
- Solid waste and by-products
- Wastewater
- Resource Consumption
- Abnormal conditions
- Occupational Health and Safety

#### Socioeconomic Impacts

- Employment Opportunity
- Community Development

## **6.11 ENVIRONMENTAL IMPACTS**

### **6.11.1 AIR EMISSIONS**

#### **POTENTIAL IMPACTS**

Air emission can result as result of fuel burning in gennerators only. There is no source of air emissions from the said project. .

#### **MITIGATION MEASURES**

The following mitigation measures will be implemented. The proposed mitigation measures to reduce the impacts on air quality during the operation activities are:

- Proper ventilation with exhaust will be installed in offices.
- Power Engines will be equipped with air emission control technology.
- Monitoring of Ambient air parameters (Particulate matter, SO<sub>x</sub>, NO<sub>x</sub>) emissions should be carried out on regular basis to ensure compliance with the PEQS.
- Solar system will be installed to meet the electricity consumption
- The inspection and the maintenance of the generator will be done on regular basis when in use.
- Joy rides will be properly maintained.
- Plantation of indigenou trees within the premises and along the boundary.

#### **RESIDUAL IMPACT**

If proper mitigation measures are effectively implemented, the residual impact of the proposed activities on the area's air quality is expected to be low in terms of significance, reversible.

### **6.11.2 NOISE**

#### **POTENTIAL IMPACTS**

The main sources of pollution from noise are during raw operational activities of rides and other activities which will not be harmful.

#### **MITIGATION MEASURES**

The following mitigation measures will be undertaken in order to further reduce the noise levels:

- Effective noise suppression design and plan will be made for all noise producing equipment.
- Noise barriers should be implanted
- Noise area will not be open site. The source of noise will be in closed and covered place. Where the OSH standard will be applied.
- The repairing and the small source of noise will be removed if it will possible.
- PPEs are provided to workers
- Proper tree plantation will be done
- Noise monitoring will be carried out periodically.

### **RESIDUAL IMPACTS**

Implementation of the mitigation measures proposed above will result in negligible to no residual impact due to project noise on the surrounding environment.

#### **6.11.3 TRAFFIC**

The operational phase of the project will result in increased traffic due to visit of tourists.

### **MITIGATION MEASURES**

The following mitigation measure will be implemented.

- Specific plan for parking will be done
- The said project will have the capacity of almost 1000 cars.
- The route of the vehicles will be defined and given to drivers and security system.
- The road will be labeled according to the rules and regulations.
- Road connectivity to main road will be done.
- Road signage relevant to the project traffic will be placed, where necessary.
- All vehicle drivers handling equipments will be trained in community safety aspects. Drivers will be trained in responsible and safe driving practices; safe speed limits for vehicles will be followed.

#### **6.11.4 SOLID WASTE**

Solid waste generated will be generated from organic and domestic solid waste from the canteen and admin block. All the waste will be segregated from its production line. The generated domestic solid waste

will be handled as per area practices. If the waste management is not carried out properly, it can affect health of workers, pollution of soil, surface or ground water. All waste generated from the project will be managed by proposed controls. The environmental impacts will be minimized after the implementation of the proposed mitigations.

## **MITIGATION MEASURES**

The following mitigation measures will be implemented:

### **GENERAL WASTE MANAGEMENT PRACTICES**

During operational phase of the project, a proper waste management plan will be devised and implemented. Key elements of integrated waste management system will include the following:

#### **ON-SITE HANDLING**

- There will be separated bins for segregation of different type of waste
- Proper waste collection system will be ensured. For this purpose, waste bins will be placed inside the boundary.
- The waste will be sold out to EPA certified waste companies.
- Proper person will be hired for the collection and removal of waste from the site.
- Records of generated waste should be maintained.
- All non-hazardous waste that can be recycled or reused will be handed over to the contractors.

#### **OTHER MANAGEMENT MEASURES**

- Training will be provided to personnel for identification, segregation and management of waste.
- All containers of waste will be labeled properly.
- All the container should be caped clean, making sure no Oster will produce in it.
- The proper waste management system will be applied.
- Small bins and large containers will be provided on every waste producing site at defined place causing no risk to worker and machinery.
- In-house audits of the waste management will be undertaken on regular basis.

#### **RESIDUAL IMPACTS**

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

#### **6.11.5 WASTEWATER**

Wastewater will be produced from visit of site and cleaning of areas..

##### **Mitigation Measures**

- For treatment of wastewater, primary treatment is proposed.
- Wastewater will be used for horticulture of site as site will have stadiums, courts and several plants
- Regular monitoring of wastewater will be conducted through EPA certified body.

#### **RESIDUAL IMPACTS**

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

#### **6.11.6 OCCUPATIONAL HEALTH AND SAFETY**

This section discusses the occupational health and safety impacts of the operation of said project. Physical hazards may include exposure to same-level fall hazards due to slippery conditions from amusement section.

##### **MITIGATION MEASURES**

In order to reduce the physical hazards and other health and safety issues that may be encountered at workplace, following will be followed.

- Proper training will be provided for the proper usage of machineries and personal protective equipment (PPE).
- It will be ensured that the individual who has received the correct training is operating a particular machine.
- Site supervisor or health and safety officer should be present on site
- Risk Assessment will be done on daily basis
- Emergency response plans will be remained active.

- Monitoring cameras and sensors will be implanted at the work site
- OSHA polices will be implemented on site
- Non-slip tiles will be used in all plant areas.
- Guards will be installed at all bunds, structures, plant equipment or sills where they could be hit by vehicles including in the production plant. Provide mirrors, barriers or other aids to separate people and vehicles. Training of staff in the handling of lifting materials.
- Timely maintenance and repair of electrical equipment will be conducted.
- Implementation of work rotations, provision of regular work breaks.
- At workplace, first aid facilities will be maintained at readily accessible places.

## 6.12 SOCIOECONOMIC IMPACTS

A summary of potential socio-economic impacts of the project is presented in Table below.

Table 6-4: Potential Socioeconomic impacts of the project

Impact	Beneficial	Adverse
<b>Economic</b>	<ul style="list-style-type: none"> <li>• Employment generation</li> <li>• Procurement of equipment and services</li> <li>• Local authority business tax / rates revenue</li> <li>• Increase in property value</li> <li>• Increase in tourism revenue</li> <li>• Increase in cultural value of land</li> <li>• Attraction to tourists.</li> </ul>	Negative economic impacts are not anticipated
<b>Social</b>	<ul style="list-style-type: none"> <li>• Indirect beneficial community impacts from employment</li> <li>• Provision of training to employees and workers</li> </ul>	Risks of occupational and environmental health issues.

By implementing the following mitigation measures, impact to community can be minimized.

- Maximum number of unskilled and semi-skilled jobs will be reserved for the local communities.

- Community development will be done.

### 6.12.1 EMPLOYMENT OPPORTUNITIES

The project is expected to have positive impact on economic condition of locals. Employment opportunities will be generated due to project activities.

Similarly, the operation of the project will create far greater number of indirect income resources for example income resource for transporters for the transportation of the raw materials, procurement of required goods from local market etc.

Overall, the project will have a positive impact on the employment opportunities of Pakistan.

## 6.13 POTENTIAL ENVIRONMENTAL ENHANCEMENT MEASURES

### 6.13.1 GREENBELT DEVELOPMENT

Apart from functioning as a pollutant sink, green belts provide other benefits like:

- Green belt helps in noise abatement for the surrounding area. Thus, it is recommended as noise barriers.
- Zoo and botanical garden will be constructed.
- Ornamental plants, flowering plants and fruity plants will be planted.
- Green belt also absorbs extra heat help to maintain the change of enthalpy
- Green belt will provide natural refreshment to workers and visitors.
- Green belt helps in achieving bio diversity by providing possible habitats for birds and animals.
- Green belts increase the aesthetic value of the site.

# **CHAPTER NO 7 ENVIRONMENT MANAGEMENT AND MONITORING PLANS**

## **CHAPTER 7: ENVIRONMENTAL MANGEMENT AND MONITORING PLANS**

### **7.1 GENERAL**

This EIA provides the Environmental Management Plan (EMP) of the project to keep it environment benign as well as the monitoring plan to ensure the compliance of the established EMP.

Outline and key features of the EMP for construction and operations phase is presented in sub-sections below. As per the environmental legislation in Pakistan, the EMP for the operations phase, along with other documents, is to be submitted to the environmental protection agency to obtain confirmation for compliance and Environmental Approval for project operation. Even after implementation of the suggested mitigation measures, the impact may remain significant, and require regular monitoring. This section also underlies the monitoring framework for both construction and operation phases to check compliance of the EMP and to take timely actions for correction in case any accident of significant criteria, requirements or goals are found.

### **7.2 OBJECTIVES OF ENVIRONMENTAL MANAGEMENT PLAN**

The primary objectives of the EMP are to:

- Facilitate the implementation of the mitigation measures identified
- 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.
- To apply the rules and regulation of the Punjab Environmental laws and international standards
- Making of environmental managemental polices
- Reviewing, regulating and improving of environmental policies on regular basis.

### **7.3 MANAGEMENT APPROACH**

The organizational roles and responsibilities of the key players are summarized below:

**Proponent:** The project proponent will undertake overall responsibility for compliance with the EMP. Concerned Departments will carry out verification checks to ensure that the contractors are effectively implementing their environmental and social requirements.

**Contractors:** The contractors will implement the majority of environmental and social mitigation measures. The contractors will carry out field activities as part of the project. The contractors are subject to certain liabilities under the environmental laws of the country, and under its contract with proponent.

#### **7.4 COMPONENTS OF THE EMP**

The EMP consists of the following:

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

#### **7.5 ENVIRONMENT MANAGEMENT PLAN**

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

Table 7-1: Environmental Management Plan

Objective	Management Action	Responsibility	Time framework	Residual impact
<b>Construction phase</b>				
Employment Opportunities				
To promote the employment of local persons	Recruitment of local workers will be undertaken without discrimination and in accordance with company recruitment policy by contractors involved in construction	Contractor	On commencement of construction activities	Unemployed people of area will get job opportunities and their standard of living improved
To promote the use of local service providers	Local procurement of goods and services will be undertaken wherever possible and cost effective and where practicable to the project	Contractor	On commencement of construction activities	Indirect job opportunities
Safety during construction				
To ensure safety on construction site	<ul style="list-style-type: none"> <li>Safety signage will be put in relevant places within the construction site</li> <li>Site Health and Safety officer will be present</li> </ul>	Contractor/Environmental manager/HSE manager	On commencement of construction activities	Safety of workers will be ensured by implementing proposed mitigation measures.

	<ul style="list-style-type: none"> <li>• Construction drivers will be subjected to public safety awareness</li> <li>• Reckless driving by construction workers will be prohibited and monitored</li> <li>• Workers will be given PPEs such as; helmets, mask, ear-plugs/muffs, safety boots, etc. and its use will be strictly enforced</li> <li>• Workers will be trained on the regular basis regarding personal safety</li> <li>• Incidents will be reported directly to the concerned authority</li> </ul>			
Construction waste management				
To prevent the contamination of soils and water resources due to inappropriate management and disposal of waste	<ul style="list-style-type: none"> <li>• The construction site will have litter bins for waste collection</li> <li>• Recycling or reuse of waste wherever possible.</li> <li>• Application of a good strategy to collect, remove and safely dispose of</li> </ul>	Contractor	Throughout construction stage	Waste was disposed of/reused/ recycle or resale as per practices of area.

	<p>waste on daily basis to ensure a clean environment in the factory site</p> <ul style="list-style-type: none"> <li>• Integrated waste management system will be adopted for the proper management of the waste at site</li> <li>• At the end of the construction phase, left-over waste will be removed by using the standard waste management procedures</li> <li>• All the idle machinery and equipment will be immediately removed from the site</li> <li>• Scrap and the debris will be removed from the site at the end of the construction stage after appropriate segregation of the material</li> <li>• All the domestic waste produce by the worker will be given to the municipal waste management company</li> </ul>			
Pollution control management				

To contain spillages	<ul style="list-style-type: none"> <li>• Proper maintenance of construction vehicles and equipment will be undertaken</li> <li>• Appropriate environmental security measures including shovels and plastic bags etc will be provided to prevent accidental release to ground.</li> <li>• Appropriate procedures and protocols will be established and monitored for materials transport and handling whilst on the site.</li> <li>• Emergency response plan will be developed for any incident.</li> </ul>	Contractor	On-site establishment	Potential for accidental release of materials during transport and handling on the site should be minimized.
To manage sewage	Portable toilets will be provided at site.	Contractor	On commencement of construction	Portable toilets will be cleaned properly and regularly
Protection of biodiversity				
To avoid unnecessary disturbance of and quick recovery of biodiversity	<ul style="list-style-type: none"> <li>• Minimize clearing of vegetation during construction</li> </ul>	Contractor	Throughout construction phase	Site will be developed into eco friendly theme park and artificial forest.

<p>in the plant site (if applicable)</p>	<ul style="list-style-type: none"> <li>• Surface soil excavated during construction to be placed back on the sub-soil to fast vegetation recovery</li> <li>• Prepare and implement an appropriate landscaping programme to increase aesthetics of area</li> <li>• The flora of the site will be restored at the end of the construction phase by landscaping and planting native vegetation</li> </ul>			
<p>Air quality &amp; dust management</p>				
<p>To minimize the dust entrainment during construction</p>	<ul style="list-style-type: none"> <li>• Regular surface wetting will be implemented on dusty sections in the factory construction site</li> <li>• Strict on-site speed controls will be enforced for construction vehicles</li> <li>• All trucks hauling soil, sand and other loose materials will be covered</li> <li>• No excavation activity will be carried out during windy days</li> </ul>	<p>Contractor</p>	<p>On commencement of construction activities</p>	<p>Dust propagation will be limited to construction area and will not influence local community. However, workers were supplied with dust masks especially on dry days.</p>

	<ul style="list-style-type: none"> <li>• The watering of the route will be done on regular basis</li> <li>• Specified routes will also help to overcome the dust to evolve.</li> <li>• Fuel-efficient and well-maintained haulage trucks will be employed to minimize exhaust emissions</li> <li>• Construction workers will be sensitized on measures to reduce air pollution</li> </ul>			
Noise				
To minimize disturbance due to noise	<ul style="list-style-type: none"> <li>• Loading and unloading of materials will be done carefully to reduce noise disturbances to surrounding households</li> <li>• Residences are at a safe distance from site so no disturbance will be envisaged.</li> <li>• Drivers will be instructed to avoid unnecessary gunning of vehicles, hooting and buzzing.</li> </ul>	Contractor	On commencement of construction activities	within PEQs

	<ul style="list-style-type: none"> <li>• Regular maintenance of the machinery will be done to reduce the noise</li> <li>• Vehicles will be tuned on regular basis</li> <li>• The inspection of the vehicles will be done by health and safety officer on regular interval</li> </ul>			
Occupational health & safety				
To ensure healthy and Secure/safe environment in the construction site for all workers	<ul style="list-style-type: none"> <li>• Management will ensure that fire extinguishers should be located in strategic and visible places</li> <li>• Health and Safety data sheet will be design and formed by Safety officer.</li> <li>• All vehicles and construction equipment will be under control of competent personnel</li> <li>• Inspection of material and harmonization to the occupational health and safety standards.</li> <li>• Adequate security for workers will be provided during construction</li> </ul>	Contractor	Throughout construction phase	Record of all incidents will be maintained and reported to HSE manager.

	<ul style="list-style-type: none"> <li>Sensitize workers to operate in teams</li> </ul>			
<b>Operation phase</b>				
Wastewater management				
Degradation of surface waters quality due to process water and sewage direct disposal	<ul style="list-style-type: none"> <li>For treatment of wastewater, primary treatment will be proposed.</li> <li>Wastewater will be used for horticulture activities.</li> <li>Monitoring of waste water will be done periodically</li> </ul>	Management	Throughout project life cycle	None
Air quality management				
Particulate emissions and stack emissions	<ul style="list-style-type: none"> <li>Proper ventilation with exhaust will be installed.</li> <li>Power Engines will be equipped with air emission control technology.</li> <li>Monitoring of Ambient air parameters (Particulate matter, SO<sub>x</sub>, NO<sub>x</sub>) emissions should be carried</li> </ul>	Management	Throughout operation phase	Local air quality will be virtually unaffected and will be based on PEQs

	<p>out on regular basis to ensure compliance with the PEQS.</p> <ul style="list-style-type: none"> <li>• The inspection and the maintenance of the generator will be done on regular basis when in use.</li> <li>• Solar system will be installed to meet electricity requirement.</li> <li>• Amusement rides will be regularly maintained.</li> </ul>			
Noise & vibration				
To minimize disturbance of communities due to noise	<ul style="list-style-type: none"> <li>• Effective noise suppression design and plan will be made for all noise producing equipment.</li> <li>• Noise barriers should be implanted</li> <li>• The repairing and the small source of noise will be removed if it will possible.</li> <li>• PPEs are provided to workers</li> <li>• Proper tree plantation has been done</li> <li>• Noise monitoring will be carried out periodically.</li> </ul>	Management	Throughout project life cycle	Noise level will be based on PEQs

Traffic & transport				
<p>Increased heavy vehicles traffic both locally and nationally.</p>	<ul style="list-style-type: none"> <li>• Specific plan for parking will be done</li> <li>• The said project will have the capacity of almost 1000 cars.</li> <li>• The route of the vehicles will be defined and given to drivers and security system.</li> <li>• The road will be labeled according to the rules and regulations.</li> <li>• Road connectivity to main road will be done.</li> <li>• Road signage relevant to the project traffic will be placed, where necessary.</li> <li>• All vehicle drivers handling equipments will be trained in community safety aspects. Drivers will be trained in responsible and safe driving practices; safe speed limits for vehicles will be followed.</li> </ul>	<p>Management</p>	<p>Throughout project operation</p>	<p>The traffic has the potential to contribute to congestion and lead to complaints due to noise/vibration nuisance on a local basis. However, the study indicates that there will not be a significant impact.</p>

HSE				
<p>To minimize loss work injury/hazards/incidents/accidents</p>	<ul style="list-style-type: none"> <li>• Proper training will be provided for the proper usage of machineries and personal protective equipment (PPE).</li> <li>• It will be ensured that the individual who has received the correct training is operating a particular machine.</li> <li>• Site supervisor or health and safety officer should be present on site</li> <li>• Risk Assessment will be done on daily basis</li> <li>• Emergency response plans will be remained active.</li> <li>• Monitoring cameras and sensors will be implanted at the work site</li> <li>• OSHA polices will be implemented on site</li> <li>• Non-slip tiles will be used in all plant areas.</li> <li>• Guards will be installed at all bunds, structures, plant equipment or sills</li> </ul>	<p>Environmental manager/HSE Manager</p>	<p>Throughout life cycle of project</p>	<p>Potential of injuries will be minimized</p>

	<p>where they could be hit by vehicles including in the production plant. Provide mirrors, barriers or other aids to separate people and vehicles. Training of staff in the handling of lifting materials.</p> <ul style="list-style-type: none"> <li>• Timely maintenance and repair of electrical equipment will be conducted.</li> <li>• Implementation of work rotations, provision of regular work breaks.</li> <li>• At workplace, first aid facilities will be maintained at readily accessible places.</li> </ul>			
First aid				
To ensure safety and health	<ul style="list-style-type: none"> <li>• First aid box will be available at the site</li> <li>• First aid training will be given to the employees on the regular basis</li> <li>• Numbers of all the concerned/authorized persons that will be contacted in the case of emergency will be displayed on-site</li> </ul>	Environmental manager/HSE of Akzo Nobel Pakistan Limited	Throughout life cycle of project	None

	<ul style="list-style-type: none"> <li>• Health centre will be constructed</li> </ul>			
Fire hazard				
To prevent any disaster	<ul style="list-style-type: none"> <li>• Fire fighting extinguishers will be installed.</li> <li>• All the equipment will be placed at strategic locations where the risk of out-burst of the fire is high. List of fire posts is annexed.</li> <li>• Smoking will not be permitted in the vicinity.</li> <li>• Smoke detector sensors will be installed at rooms and halls.</li> <li>• Regular site inspection will be done to eliminate all the chances of the hazards</li> <li>• Checking and maintenance of the fire-fighting equipment will be carried out on the regular basis</li> <li>✓ Emergency evacuation plan will be finalized.</li> </ul>	Environmental manager/HSE	Throughout life cycle of project	Potential of disaster will be minimized by suggested mitigation measures implementation
Employment				

<p>To provide job opportunities and helping in improving living standard of people</p>	<ul style="list-style-type: none"> <li>• Employment generation</li> <li>• Procurement of equipment and services</li> <li>• Local authority business tax / rates revenue</li> <li>• Increase in property value</li> <li>• Increase in tourism revenue</li> <li>• Increase in cultural value of land</li> <li>• Attraction to tourists.</li> <li>• Indirect beneficial community impacts from employment</li> <li>• Provision of training to employees and workers</li> </ul>	<p>Management</p>	<p>During construction and operation phase</p>	<p>Direct and indirect jobs</p>
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### 7.6 ENVIRONMENTAL MONITORING PLAN

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

Table 7-2: Environmental Monitoring Plan

Env. Components	Project Stage	Parameters	Instrument	Standards	Monitoring			Institutional Responsibility
					Location	Frequency	Duration	
Air	Construction	PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>2</sub> , CO, SPM ,O <sub>3</sub>	Air Quality Monitors/Gadgets	PEQS	Project site	Twice during construction	As per approved testing method	Contractor through approved monitoring lab
	Operation	Stack emissions	Air Quality Monitors/Gadgets	PEQs	stack	Quarterly	As per approved testing method	Through approved third party/monitoring lab

Noise Levels	Construction	Noise levels on dB(A) scale	Digital Sound Meter	PEQs	Project site	Twice during construction	Reading to be taken at 15 seconds interval for 15 minutes every hour and then averaged	Contractor through approved monitoring lab
	Operation	Noise levels on dB(A) scale	Digital Sound Meter	PEQs	Project site	Quarterly	Reading to be taken at 15 seconds interval for 15 minutes every hour and then averaged	Through approved third party/monitoring lab
Wastewater	Operation	PEQS	Through approved equipments	PEQs	ETP	Quarterly	As per approved testing method	Through approved third party/monitoring lab

## **7.7 INSTITUTIONAL CAPACITY OF THE UNIT**

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

### **7.7.1 Primary Responsibilities**

The primary responsibility for implementing different aspects of the EMP within the company lies with the concerned departments of Thrill City Park and Resorts, Kalar Kahar

### **7.7.2 Operation Management & Control**

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

### **7.7.3 Supervision & Monitoring**

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

### **7.7.4 Communications & Documentation**

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

#### **7.7.4.1 Meetings**

As environment is multidisciplinary subject with environmentalist having a dynamic role therefore In-charge environment would be considered as integral part in both constructional and operational team. Participation of Environmental in-charge in daily morning meeting and any other special meeting is mandatory. Besides internal meeting HSE in-charge/Environment in-charge is also responsible to conduct meeting with local in keeping administration in liaison.

#### **7.7.4.2 Changes-Record Register**

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

## **7.8 ENVIRONMENTAL TRAINING**

Environmental training will help to ensure that the requirements of the EIA and EMP are clearly understood and followed by all project personnel in the course of the project.

## EQUIPMENT MAINTENANCE DETAILS

The project is about development of eco-friendly theme park at Kalar Kahar which will have amusement rides, indoor games, adventurous rides and many other options:

Task	Weekly	Monthly	Semi-Annually	Annually
Visual Inspection	✓			
Testing and Inspection		✓		
Maintenance of Machines		✓		
Fire Mains and Nozzles		✓		
Containers/Cylinders		✓		
Control and Section Valves		✓		

## 7.9 ENVIRONMENTAL BUDGET

Approximately PKR 10 million budget will be reserved for, solid waste management, wastewater management and environmental monitoring. Monitoring tests for ambient air quality, noise and groundwater quality will also be conducted.

# **CHAPTER NO 8**

# **CONCLUSION AND**

# **RECOMMENDATIONS**

## **CHAPTER 8: CONCLUSION AND RECOMMENDATIONS**

### **8.1 CONCLUSION**

The report presents Environmental Impact Assessment (EIA) of the said project. EIA of said Project is performed according to guidelines of EPA. It includes description of the project, description of the environmental baselines, potential environmental impacts and suggested mitigation measures. An implementation mechanism for mitigation measures in the form of an Environmental Management Plan is included in the study.

The performed EIA showed all anticipated impacts (both positive and negative), associated with the project. Appropriate mitigation measures as explained in the environmental study will strengthened the environment and promote sustainable development.

Based on overall assessment of the environmental impact of the project, it is concluded that the economic benefit from the project is not at the cost of environment. The project will increase the employment opportunity at the area, will have a positive impact on heritage and culture of land. Value addition of land will be done because of construction of subject process. The biodiversity of land will be restored and preserved. The project will increase the tourism GDP Further the project is not likely to cause any significant adverse impact on the physical and biological environment but positive impact on social development and economic prosperity of the area, provided that suitable mitigation measures as identified in this study are implemented.

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

### **8.2 RECOMMENDATIONS**

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

- Implementation of EMP must be given top priority.
- Proper PPEs including ear plugs, ear muffs, mufflers, goggles, gloves and shoes etc. should be

provided to workers

- Train workers to use PPEs
- Advise workers to follow SOPs.
- Equipment maintenance and efficiency must be checked.
- No compromise on public health and environment should be allowed.
- Waste minimization practices should be employed and workers should be encouraged to adopt such methods.
- Wages should be distributed on time.
- Small waste storage bins should be installed at different corner for proper waste collection and discharge.
- Proper dispensary and first aid box should be provided for workers
- Smoking should be avoided within premises of project site and near fuel storage areas.
- The proposed Environmental Management & Monitoring Plan should be implemented.
- The construction and installation should be completed in guidelines of accorded Environmental Approval.

# **ANNEXURE I**

## ***PROPONENT CNIC***



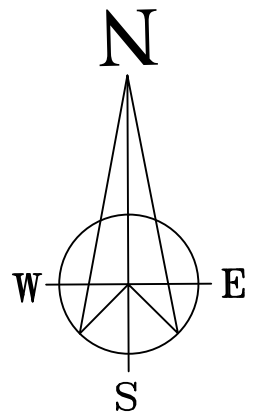
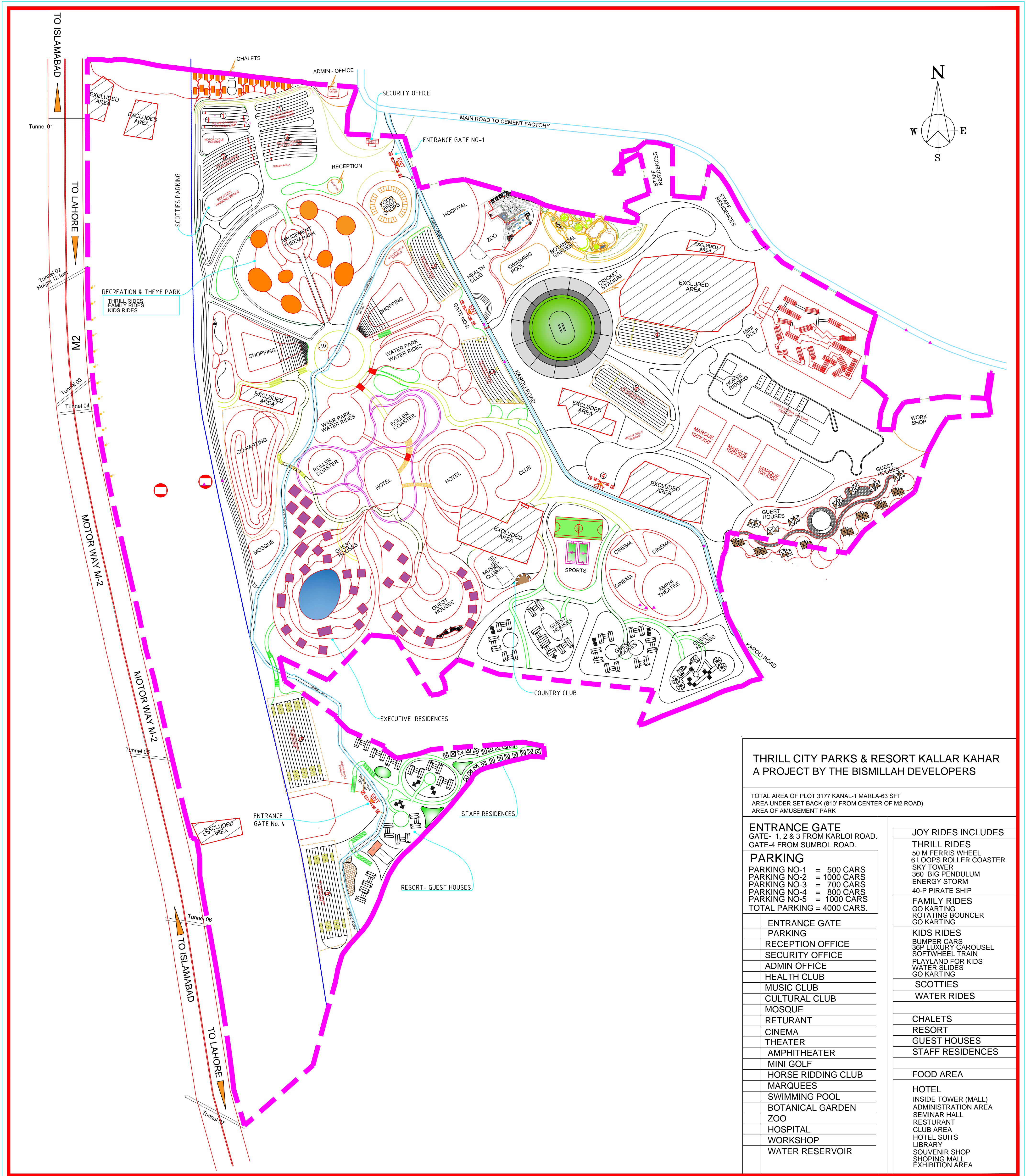
# **ANNEXURE II**

## ***PROPERTY DOCUMENTS***

*(Provided in soft form to BFC)*

# **ANNEXURE III**

## ***LAYOUT MAP***



**THRILL CITY PARKS & RESORT KALLAR KAHAR  
A PROJECT BY THE BISMILLAH DEVELOPERS**

TOTAL AREA OF PLOT 3177 KANAL-1 MARLA-63 SFT  
AREA UNDER SET BACK (810' FROM CENTER OF M2 ROAD)  
AREA OF AMUSEMENT PARK

**ENTRANCE GATE**  
GATE- 1, 2 & 3 FROM KARLOI ROAD.  
GATE-4 FROM SUMBOL ROAD.

**PARKING**  
PARKING NO-1 = 500 CARS  
PARKING NO-2 = 1000 CARS  
PARKING NO-3 = 700 CARS  
PARKING NO-4 = 800 CARS  
PARKING NO-5 = 1000 CARS  
TOTAL PARKING = 4000 CARS.

ENTRANCE GATE
PARKING
RECEPTION OFFICE
SECURITY OFFICE
ADMIN OFFICE
HEALTH CLUB
MUSIC CLUB
CULTURAL CLUB
MOSQUE
RESTURANT
CINEMA
THEATER
AMPHITHEATER
MINI GOLF
HORSE RIDDING CLUB
MARQUEES
SWIMMING POOL
BOTANICAL GARDEN
ZOO
HOSPITAL
WORKSHOP
WATER RESERVOIR

**JOY RIDES INCLUDES**

<b>THRILL RIDES</b> 50 M FERRIS WHEEL 6 LOOPS ROLLER COASTER SKY TOWER 360° BIG PENDULUM ENERGY STORM 40-P PIRATE SHIP
<b>FAMILY RIDES</b> GO KARTING ROTATING BOUNCER GO KARTING
<b>KIDS RIDES</b> BUMPER CARS 360° LUXURY CAROUSEL SOFTWHEEL TRAIN PLAYLAND FOR KIDS WATER SLIDES GO KARTING
<b>SCOTTIES</b>
<b>WATER RIDES</b>
<b>CHALETS</b>
<b>RESORT</b>
<b>GUEST HOUSES</b>
<b>STAFF RESIDENCES</b>
<b>FOOD AREA</b>
<b>HOTEL</b> INSIDE TOWER (MALL) ADMINISTRATION AREA SEMINAR HALL RESTURANT CLUB AREA HOTEL SUITS LIBRARY SOUVENIR SHOP SHOPING MALL EXHIBITION AREA

**ANNEXURE IV**  
***BASELINE***  
***ENVIRONMENTAL***  
***MONITORING REPORTS.***



**ENVIRONMENTAL PROTECTION AGENCY  
GOVERNMENT OF THE PUNJAB  
National Hockey Stadium, Gate No. 08  
Gaddafi Stadium Complex, Lahore**



**Validation for Stack & Ambient Monitoring / Sampling**

Validation # 1042-M  
Issue Date: 14-5-2024

Emission Monitoring under CTM-34 or OTM-39			
Facility Name & Address Phone	Development of Theme Park Named Thrill City Park and Resorts.	No of Stacks /Sampling Point Ambient Air 01	
	Mouza Khandvah Tehsil Kallar kahar District Chakwal		
Industry Category	Baseline Study		
Analyzer Model & Make	Thermo scientific		
Average stack emission Values of CO, NOx (in mg/nM3)			
Excess Air / Excess Oxygen (%age):-			
Analyzer exposed for Ramp-Up phase to the sample gas for 5 minutes	Yes	NO	NA
Analyzer flow rate and EC temperature monitored during calibration and testing	Yes	No	NA
Test Data Phase of sample gas recorded with 15 second interval	Yes	No	NA
All key requirements to ensure QA/QC complied for said EPA approved Method	Yes	No	NA
<b>Particulate Matter (PM) Monitoring / Sampling under USEPA Method 5 / 17</b>			
Model & Make of Iso-kinetic PM Assembly			
The PM sampling train is complete as per Method 5 & 17	Yes	No	NA
Leak Test performed prior to sampling	Yes	No	NA
Field data Sheet for PM Sampling filled during PM sampling	Yes	No	NA
Data for determining of "K" factor & DGM "Y" Factor filled during sampling	Yes	No	NA
All method key requirements during sampling were compiled to ensure QA/QC	Yes	No	NA
Filter of Particulate matter is suitable for metal Testing	Yes	No	NA
<b>SOx sampling as per Method 8 (Thorin Indicator Method)</b>			
The right absorbent solution are available for SOx-Sampling	Yes	No	NA
The equipment is capable to maintain flow rate @ 2.0LPM or as per method 8 requirement	Yes	No	NA
Sampling for SOx is performed as per method	Yes	No	NA
<b>Ambient Air Quality Monitoring by Automatic Monitors for CO, O3, SO2, NOx, PM2.5 &amp; PM10</b>			
In case of continuous monitoring at a site, One Point QC Check Single analyzer & zero/span check is performed every 14 days.	Yes	No✓	NA
The CE of NOx analyzer is ensured to be maintained within 96% - 104.1%	Yes	No✓	NA
Zero/span check is performed prior to starting ambient monitoring	Yes	No✓	NA
All key requirements for Critical & Operational Criteria for ambient air monitoring by automatic monitors were compiled during monitoring	Yes✓	No	NA
The measuring techniques of monitors comply PEQS	Yes✓	No	NA
<b>Ambient Air Sampling of SPM, PM10, Pb by High Volume Sampler</b>			
In case of Sampling for SPM through samplers, the flow rate of sampler comply PEQS (1.1m3/min).	Yes✓	No	NA
Calibration of Sampler performed prior to sampling	Yes	No✓	NA
<b>Vehicular Emissions &amp; Noise Measurement</b>			
Sampling of Vehicle emissions and noise measurement have been performed as per method and SOPs	Yes✓	No	NA

Remarks (if Any):-

Signature

  
Research Officer  
Environment Protection Agency  
Punjab Lahore

Monitoring Date

13-05-2024

Signature  
Assistant Analyst  
Mehmood Aslam







Validation # 1042-N

**Validation for Wastewater & Drinking Water**

Issue Date: 14-5-2024

Project / Unit Name with Address and contact details		Development of Theme Park Named Thrill City Park and Resorts.			Sampling Point Tap Water			
Validation No		Mouza Khandvah Tehsil Kallar kahar District Chakwal						
Name of Private Lab		ESPAK.						
Waste Water (WW) Treatment facility Primary Secondary Tertiary NA				Drinking Water (W) Treatment Facility Chemical RO NA				
Total WW collected Sample .....				Total Collected Drinking water samples.....				
Sample Tag for testing parameter is assigned on sample container						Yes	NO	NA
Sample is preserved properly for each testing parameter						Yes	NO	NA
Sample size is adequate for testing the target parameters						Yes	NO	NA
Wastewater Flow Measurement performed to ensure sample representativeness						Yes	NO	NA
No. of Waste Water outlets	Waste Water Flow m <sup>3</sup> /hr from each outlet (Optional)	Water intake m <sup>3</sup> /hr (Optional)	Water Mass balance complied during sampling (Optional)	Sample Type GROUND WATER				
				Yes	No	Grab✓	Composite	
Parameter	Matrix		Container	Sample Size	Preservation	Composite		
	W	WW				Yes	NO	NA
Coliform. Total or Fecal	✓	—	Sterile Container	100 mL	Refrigerate 6 C	✓		
Coliform. Total or Fecal.Chlorinated Water	✓	—	Sterile Container	100 mL	0.008% Thiosulphate & cooled 6 C	✓		
Color, Turbidity	✓	—	P,G	500 mL	Cool 6 C	✓		
Hardness, Total	✓	—	P,G	500ml	HNO3 to pH<2	✓		
Nitrogen, Nitrate + Nitrite, Phenolic Compounds, Oil & Grease, COD, NH3	✓	—	P,G	2000 mL	H2SO4 to pH < 2, Cool 6C	✓		
Metals, General	✓	—	P,G Rinsed 1.1 HNO3	500 mL	HNO3 to pH < 2	✓		
Cyanide, Total	✓	—	P,G	500 mL	NaOH to pH > 12, Cool 6C	✓		
Pesticides, General	—	—	Glass	1 Liter	Cool 6 C			
<b>Field Parameters*</b>								
Field parameter			pH meter, Model Make	Measurement Method	Calibrated in Field	Measured value		
pH					Yes NO			
Temp								
Cl								

Signature

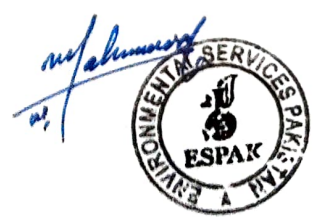
*[Signature]*  
Research Officer  
Environment Protection Agency  
Punjab Lahore

Monitoring Date

13-05-2024

Signature

Assistant Analyst  
Mehmood Aslam



## CHEMICAL ANALYSIS TEST REPORT (AMBIENT AIR)



Reference Number: ESPAK/00418P/24/AA/03191/00230 Date: 10/05/2024  
 Name of Industry/Client: Development of Theme Park Named Thrill City Parks and Resort  
 Address: Karoli Road, Mouza Khandovah, Tehsil Kallar Kahar, District Chakwal  
 Validation Officer.: Muhammad Nadeem, Research Officer  
 Nature of Sample: Ambient Air Monitoring Location: Mid-Point of Site (GPS: 32°38'59.96"N, 72°46'54.23"E)  
 Date of Sample Collection: 07/05/2024 Grab / Composite: Continuous - 24 Hours  
 Sample Collected/Sent By: Mehmood Aslam, Analyst (Field), ESPAK  
 Date of Completion of Analysis: 08/05/2024

S. No	Parameters	Limit Values (PEQS-24 Hours)	Concentration	Method / Equipment Used	Remarks
1	Carbon Monoxide (CO)	5 mg/m <sup>3</sup> (8 Hours)	1.7 mg/m <sup>3</sup>	Non Dispersive Infrared Absorption (NDIR)	Within Prescribed Limits
2	Sulfur Dioxide (SO <sub>2</sub> )	120 µg/m <sup>3</sup>	13.9 µg/m <sup>3</sup>	UV Fluorescence (UVF)	Within Prescribed Limits
3	Ozone (O <sub>3</sub> )	130 µg/m <sup>3</sup> (1 Hour)	26.6 µg/m <sup>3</sup>	Non Dispersive UV Absorption	Within Prescribed Limits
4	Oxides of Nitrogen as NO	40 µg/m <sup>3</sup>	20.1 µg/m <sup>3</sup>	Chemiluminescence Detection	Within Prescribed Limits
5	Oxides of Nitrogen as NO <sub>2</sub>	80 µg/m <sup>3</sup>	26.2 µg/m <sup>3</sup>	Chemiluminescence Detection	Within Prescribed Limits
6	Particulate Matter PM <sub>2.5</sub>	35 µg/m <sup>3</sup>	33.9 µg/m <sup>3</sup>	Particulate Sensor	Within Prescribed Limits
7	Particulate Matter PM <sub>10</sub>	150 µg/m <sup>3</sup>	144 µg/m <sup>3</sup>	Particulate Sensor	Within Prescribed Limits
8	Suspended Particulate Matter (SPM)	500 µg/m <sup>3</sup>	492 µg/m <sup>3</sup>	Particulate Sensor	Within Prescribed Limits


PEQS: Punjab Environmental Quality Standards for Ambient Air, 2016

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

**Note:**

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

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

2. Name of Chief Analyst with Seal: Muhammad Arfan 

3. Signature of Incharge of the Environmental Laboratory:

Name: Imran Malik  
General Manager

Date: 10/05/2024

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



## NOISE MONITORING REPORT



Reference Number: ESPAK/00418P/24/N/03192/00190 Date: 10/05/2024  
Name of Industry/Client: Development of Theme Park Named Thrill City Parks and Resort  
Address: Karoli Road, Mouza Khandovah, Tehsil Kallar Kahar, District Chakwal  
Validation Officer: Muhammad Nadeem, Research Officer  
Nature of Sample: Noise  
Date of Sample Collection: 07/05/2024 Grab / Composite: Continuous-24 Hours  
Sample Collected/Sent By: Mehmood Aslam, Analyst (Field), ESPAK  
Date of Completion of Analysis: 08/05/2024  
Method/Equipment Used: Sound Level Meter

S. No	Measurement Point	Limit Values (PEQS)	Noise Level in dB(A) Leq	Remarks
1	Mid-Point of Site (GPS: 32°38'59.96"N, 72°46'54.23"E) -Day time	65 dB(A)	61 dB(A)	Within Prescribed Limits
2	Mid-Point of Site (GPS: 32°38'59.96"N, 72°46'54.23"E) -Night time	55 dB(A)	49 dB(A)	Within Prescribed Limits

PEQS: Punjab Environmental Quality Standards for Noise in Commercial Area, 2016 Day Time Hours (6:00 am to 10:00 pm) Night Time Hours (10:00 pm to 6:00 am)  
• Uncertainty of Measurement (UoM) data will be provided on request, where available. The statement of conformity, if provided in the report, is based on the decision rule of simple acceptance or rejection with equal shared risk due to measurement uncertainty.

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- The report data is not intended to be used legally by the client.

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

2. Name of Chief Analyst with Seal: Muhammad Arfan

3. Signature of Incharge of the Environmental Laboratory:

Name: Imran Malik  
General Manager  
Date: 10/05/2024

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



## CHEMICAL ANALYSIS TEST REPORT (GROUND WATER)



Reference Number: ESPAK/00418P/24/GW/03193/00333 Date: 13/05/2024  
 Name of Industry / Client: Development of Theme Park Named Thrill City Parks and Resort  
 Address: Karoli Road, Mouza Khandovah, Tehsil Kallar Kahar, District Chakwal  
 Validation Officer.: Muhammad Nadeem, Research Officer  
 Nature of Sample: Ground Water  
 Date Sample Received: 08/05/2024 Grab / Composite: Grab  
 Date of Sample Collection: 07/05/2024  
 Sample Collected / Sent By: Mehmood Aslam, Analyst (Field), ESPAK  
 Date of Completion of Analysis: 13/05/2024

S. No	Parameters	Limit Values (DW-PEQS)	Concentration	Method / Equipment Used	Remarks
1	Total Coliforms	----	ND	SMWW 9222 B	----
2	E. Coli	Must not be detectable in any 100mL Sample	ND	SMWW 9222 H	Within Limits
3	Color	≤15 TCU	ND	SMWW 2120 C	Within Limits
4	Taste	Non Objectionable / Acceptable	Acceptable	Organoleptic	Within Limits
5	Odor	Non Objectionable / Acceptable	Acceptable	Organoleptic	Within Limits
6	Turbidity	<5 NTU	2.1 NTU	SMWW 2130B	Within Limits
7	Total Hardness as CaCO <sub>3</sub> *	<500 mg/L	203 mg/L	SMWW 2340C	Within Limits
8	Total Dissolved Solids (TDS)*	<1000 mg/L	632 mg/L	SMWW 2540C	Within Limits
9	pH*	6.5-8.5	7.9	SMWW 4500H*B	Within Limits
10	Nitrate (NO <sub>3</sub> <sup>-</sup> )	≤50 mg/L	16 mg/L	SMWW 4500NO <sub>3</sub> <sup>-</sup> B	Within Limits
11	Nitrite (NO <sub>2</sub> <sup>-</sup> )	≤3 mg/L	ND	SMWW 4500NO <sub>2</sub> <sup>-</sup> B	Within Limits
12	Residual Chlorine	0.2-0.5 mg/L	ND	SMWW 4500-Cl B	----
13	Chloride (as Cl <sup>-</sup> )*	<250 mg/L	65 mg/L	SMWW 4500Cl <sup>-</sup> B	Within Limits
14	Fluoride (F <sup>-</sup> )*	≤1.5 mg/L	0.9 mg/L	U.S. EPA 9214	Within Limits
15	Phenolic Compounds (as Phenols)	NGVS	ND	SMWW 5530 C	----
16	Cyanide (CN <sup>-</sup> )	≤0.05 mg/L	ND	SMWW 4500 CN <sup>-</sup> F	Within Limits
17	Cadmium (Cd)	0.01 mg/L	ND	U.S. EPA-200.7	Within Limits
18	Chromium (Cr)	≤0.05 mg/L	ND	U.S. EPA-200.7	Within Limits
19	Copper (Cu)	2.0 mg/L	ND	U.S. EPA-200.7	Within Limits
20	Lead (Pb)	≤0.05 mg/L	ND	U.S. EPA-200.7	Within Limits
21	Mercury (Hg)	≤0.001 mg/L	ND	U.S. EPA-200.7	Within Limits
22	Nickel (Ni)	≤0.02 mg/L	ND	U.S. EPA-200.7	Within Limits
23	Zinc (Zn)	5.0 mg/L	ND	U.S. EPA-200.7	Within Limits

*cepa*

## CHEMICAL ANALYSIS TEST REPORT (GROUND WATER)



Reference Number: ESPAK/00418P/24/GW/03193/00333 Date: 13/05/2024  
 Name of Industry / Client: Development of Theme Park Named Thrill City Parks and Resort

S. No	Parameters	Limit Values (DW-PEQS)	Concentration	Method / Equipment Used	Remarks
24	Arsenic (As)	≤0.05 mg/L	ND	U.S. EPA-200.7	Within Limits
25	Barium (Ba)	0.7 mg/L	ND	U.S. EPA-200.7	Within Limits
26	Aluminum (Al)	≤0.2 mg/L	ND	U.S. EPA-200.7	Within Limits
27	Manganese (Mn)	≤0.5 mg/L	ND	U.S. EPA-200.7	Within Limits
28	Boron (B)	0.3 mg/L	ND	U.S. EPA-200.7	Within Limits
29	Fecal Coliform Bacteria	Must not be detectable in any 100mL sample	ND	SMWW 9222 H	Within Limits
30	Antimony (Sb)	≤0.005 mg/L	ND	U.S. EPA-200.7	Within Limits
31	Selenium (Se)	0.01 mg/L	ND	U.S. EPA-200.7	Within Limits

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

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

USEPA: United States Environmental Protection Agency

NGVS: No Guideline Value Set

ND: Not Detected


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

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

1. Sample Analyzed By: Riaz Ahmad Abdul Aziz Muhammad Shahid Khizra Bano Samahir Khalid  
 Analyst (Chemical) Analyst (Chemical) Analyst (Chemical) Analyst (Microbiology) Analyst (Chemical)

2. Name of Chief Analyst with Seal: Muhammad Arfan 

3. Signature of Incharge of the Environmental Laboratory:   
 Name: Imran Malik  
 General Manager  
 Date: 13/05/2024  
 ----- End of Report -----



# **ANNEXURE V**

## ***GLOSSARY***

# GLOSSARY

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<b>Alternatives</b>	The evaluation of alternatives to project development in EIA (timing, location, technologies etc) including the no go, or no development action.
<b>Ambient</b>	Relating to the immediate surroundings of something
<b>Contamination</b>	Pollution
<b>Conservation</b>	The preservation of natural resources for use by future generations
<b>Consultation</b>	A process of communication with those potentially affected by a project, policy, plan or program.
<b>Effluent</b>	means any material in solid, liquid or gaseous form or combination thereof being discharged from industrial activity or any other source and includes a slurry, suspension or vapor
<b>EMP</b>	An EMP is a site specific or project specific plan developed to ensure that appropriate environmental management practices are followed during a project's construction and operation.
<b>Environment budget</b>	Monitory assets reserve for environmental activity
<b>Environment</b>	means air, water and land; all layers of the atmosphere; all organic and inorganic matter and living organisms; the ecosystem and ecological relationships; buildings, structures, roads, facilities and works; all social and economic conditions affecting community life; and the inter-relationships between any of the factors mentioned
<b>Environmental Audits</b>	An environmental management tool consisting of a periodic and objective evaluation of an organization and installations to assess compliance with regulatory and other requirements, as defined by audit criteria
<b>Environmental</b>	means an environmental study comprising collection of

<b>Impact Assessment</b>	data, prediction of qualitative and quantitative impacts, comparison of alternatives, evaluation of preventive, mitigatory and compensatory measures, formulation of environmental management and training plans and monitoring arrangements, and framing of recommendations and such other components as may be prescribed
<b>Extent/ Magnitude</b>	The size or degree of the predicted impact
<b>Fauna</b>	Animal life occurring in particular region or time
<b>Flora</b>	plant life occurring in particular region or time
<b>Geological</b>	Relating to the study of the earth's physical structure and substance.
<b>Impact</b>	The consequence of an action or activity on the human or natural environment. Impacts may be positive, negative or neutral
<b>Issue</b>	A question or concern regarding an environmental impact, consequence or effect
<b>Mitigation</b>	Prescribed actions taken to prevent, avoid, reduce or minimize the impacts or potential adverse effects of a project
<b>Monitoring</b>	A combination of observation and measurement to assess the environmental and social performance of a project and its compliance with EIA/ EMP, or other approvals and regulatory conditions
<b>Particulate Matter</b>	A complex mixture of extremely small particles and liquid droplets that get into the air
<b>Proponent</b>	the person who intends to carry-out a proposed project
<b>Sustainable development</b>	Economic development that is conducted without depletion of natural resources.
<b>Waste</b>	means any material, substance, or by-product eliminated or discarded as no longer useful or required after the completion of a process

**ANNEXURE VI**  
***RECOMMENDATION***  
***LETTER FROM PTDC***



# PAKISTAN TOURISM DEVELOPMENT CORPORATION

Kohsar Block (Ground Floor), Pak-Secretariat, Islamabad– Pakistan.

Tel +92-51-9212826 Fax: +92-51-9212853

Email: [info@tourism.gov.pk](mailto:info@tourism.gov.pk) website: <http://www.tourism.gov.pk/>



No. M(P&P)/Collab-FP/2024

May 20, 2024

The Deputy Commissioner  
Chakwal

Subject: **RECOMMENDATION LETTER FOR THE DEVELOPMENT OF THEME PARK  
(THRIL CITY PARK AND RESORTS, KALLAR KAHAR).**

Pakistan Tourism Development Corporation (PTDC) is the prime public sector organization at the Federal level geared to promote tourism nationally and internationally. PTDC is undertaking various steps to develop and promote tourism in Pakistan. An important component of our tourism development and promotion strategy is to involve the private sector in developing quality tourism infrastructure of international standards to facilitate domestic and foreign tourist market segments.

2. THRILL CITY PARKS AND RESORT, KALLAR KAHAR is a high-quality tourism resort by M/s Bismillah Developers. This will be state of the art recreation facility in the area of Kallar Kahar.

3. Pakistan Tourism Development Corporation (PTDC) fully endorse and support this initiative of Thrill City Parks and Resort and request all the public and private stakeholders to provide necessary facilitation for this project.

4. This effort to build a quality tourist resort in the area of Potohar Region will be greatly helpful for the promotion of tourism in Pakistan and it will highly contribute in the healthy growth of tourism and hospitality sector in Pakistan.

**(AFTAB UR REHMAN RANA)**

Managing Director

CC:

- i. DG Environment Protection Bureau Punjab, Lahore
- ii. Mr. Muhammad Abubakar Ikhlq Director Bismillah Developers, Lahore

**ANNEXURE VII**  
***COMPANY REGISTRATION***  
***CERTIFICATE***

FORM D  
[ Vide Rule 9 (a) ]

MEMORANDUM ACKNOWLEDGING RECEIPT  
OF  
DOCUMENT

No. 8001 of 2018-2018

The Registrar of Firms, Lahore District hereby acknowledges the receipts of the undermentioned document documents and intimates that it has they have been filed pursuant to the provisions of the Partnership Act, 1932.

(Here enter description of document documents):-

Form V dated 27, 6, 2018 received on 27, 6, 2018.  
Notice of change in the constitution u.o. P. 27, 6, 2018  
of the Firm H/S. BISHILLAH DEVELOPERS" House No. 29 A,  
Block 7 Model Town Ext. Lahore pursuant to section 6(1) of the  
the P. Act, 1932.



*[Signature]*  
30/6/18  
MUHAMMAD AZHAR HOSSAIN  
Registrar of Firms,  
Lahore District

Lahore:

Dated: 30 JUN 2018

Despatch No. RF/LD/ 6560  
Dated 30 JUN 2018

*[Signature]*  
Registrar of Firms  
District Lahore.

RFLD 323729 DEC 2018

ACKNOWLEDGMENT OF REGISTRATION OF FIRM



FORM C  
RULE 3(A)

No. 1881

Year 2012-2013

The Registrar of Firms, City District Government, Lahore hereby acknowledges the receipt of the statement prescribed by section 38(1) of the Partnership Act, 1932. The statement has been filed and the name of the firm LIWALLAH DEVELOPER

House No. 29/A, Block A, Model Town West, Lahore.

has been entered in the Register of Firms.

*Note:* The firm may, if it desires or feels necessary to indicate after its name that it is a registered concern, it should add the following wording or vernacular translation thereof "Registered under the partnership Act, 1932."

Lahore:  
Dated: 23 JAN 2013



*[Signature]*  
23/1/13  
MUTASHAKKIL AZHAR HUSSAINI  
Registrar of Firms,  
City District Govt. Lahore

Despatch No. RPLD/

2316

*[Signature]*  
Registrar of Firms

# **ANNEXURE VIII**

## ***REFERENCES***

**References:**

- [Climate-Data-en.climate-data.org](https://climate-data-en.climate-data.org)
- EPD
- EIA of lucky Cement Industry at District Chakwal
- EIA of Bestway Cement Industry at District Chakwal
- OSHA Regulations
- Punjab Environmental Quality Standards
- Review of EIA and IEE Regulations, 2022

# **ANNEXURE IX**

## ***LIST OF TEAM MEMBERS***

## LIST OF TEAM MEMBERS

Sr. #	Name	Qualification	Roles
<b>Environmental Scientist</b>			
i.	Mian Awais	BS (Hons) Environmental Science	Project Head
ii.	Dr. Afzal Hussain	PhD Environmental Science	Social Survey
iii.	Ms. Usba	M.phil Environmental Science	Report Writing
iv.	Ms. Kiran	BS (Hons) Environmental Science	Environmental Monitoring
v.	Mr. Shahzad	BS. Hons Environmental Science	Environmental Monitoring