

## Executive Summary

### Introduction

This report presents the findings of an Initial Environmental Examination (IEE) carried out by Halcrow Pakistan (Pvt) Limited (HPK) for the proposed 2D and 3D seismic survey by Mari Petroleum Company Ltd (MPCL) in its Bannu West Block (3370-13 EL) that lies within Federally Administrated Tribal Areas and Khyber Pakhtunkhwa.

Pursuant to the requirements of the Pakistan Environmental Protection Act, 1997, Mari Petroleum Company Ltd (MPCL) commissioned Halcrow Pakistan (HPK) to carry out Initial Environmental Examination (IEE) for the proposed 2D and 3D seismic survey activities in its Bannu West Block (see **Figure ES-1**) that lies within geographical jurisdiction of North Waziristan Agency, Kurram Agency and Frontier Region Bannu of FATA and Hango and Bannu District of Khyber Pakhtunkhwa. This IEE covers only the portion of Bannu West Block that is located in Federally Administrated Tribal Areas. The proposed project activities planned by MPCL will be carried out in non-protected areas as no any protected areas; inclusive of National Parks, game reserves, communal game reserves and wildlife sanctuary were identified with in entire Bannu West Block. It is pertinent to mention that due to high security risk zones and war affected areas, MPCL will be liable to acquire all necessary approvals from the relevant authorities before the commencement of the project activities in the area.

Field survey for the IEE study was carried out by a team of environmental Engineer, wildlife specialist, social expert and botanist in July 21<sup>st</sup> – 24<sup>th</sup>, 2017. Field survey also conducted to validate available secondary data. Secondary information was collected from MPCL, in-house sources like previous environmental studies and District Census Reports. Applicable environmental assessment procedures prepared by the Pakistan EPA were followed in the preparation of the IEE.

### Project and Project Area Overview

3D seismic polygon area of (845 square km) falls in North Waziristan and Frontier Region Bannu. Approximately 444 km<sup>2</sup> area falls in North Waziristan while 401 Km<sup>2</sup> lies in FR Region Bannu. 2D seismic survey line lengths of around (79 Line km) falls in Kurram Agency and (123.6 Line km) in North Waziristan and (102 Line Km) in F.R Bannu out of 385 Line kms of total length. Therefore, this IEE report is based on the fact that MPCL will obtain NOC for the IEE (covering 2D & 3D seismic survey in Bannu West block FATA portion) from Pakistan Environmental Protection Agency (Pak- EPA).

The Project area lies in North Waziristan, Kurram Agency and Frontier Region Bannu of Federally Administrated Tribal Areas. The sub divisions of North Waziristan and Kurram Agency which falls in project area are Mir Ali and Lower Kurram respectively. Mir Ali subdivision comprises of Tehsils Mir Ali, Shewa and Spin warm. All three tehsils falls in project area, while Lower Kurram covers Ali Zai (lower Kurram) tehsil of Kurram Agency.

## Objectives of the IEE

The objectives of the IEE are to:

- Assess the existing environmental conditions in the proposed project area, including the identification of environmental sensitive areas and develop a baseline of its prevalent environmental and socio-economic conditions;
- Identify and investigate all impacts of the proposed 2D/3D seismic operations on the physical, biological and socio-economic environment of the project area;
- To propose mitigation measures that would help MPCL in conducting the 2D & 3D seismic activities in an environmental sustainable manner;
- To uncover the planning, construction phase impacts up to microenvironment levels in which project is proposed to be sited; and
- To develop an Environmental Management Plan (EMP) that would assist MPCL in the effective implementation of the recommendations of the IEE.

## The Proponent

Mari Petroleum Company Ltd (MPCL) was incorporated in mid 80's by Fauji Foundation, Govt. of Pakistan and Oil & Gas Development Corporation (now Oil & Gas Development Company Limited) to take over the assets, liabilities and operation of Fauji Foundation (MPCL) and Pak Stanvac Petroleum Project. The Company commenced business in its own name in December 1984.

MPCL is one of the leading exploration and production companies in Pakistan. It manages and operates the Country's largest gas reservoir (in terms of current reserves) at Mari Field, District Ghotki, Sindh. In addition to Mari Gas Field, MPCL currently holds development & production leases over Zarghun South and Sujawal and has operatorship of eight exploration blocks (Bannu West, Sujawal, Karak, Ghauri, Sukkur, Ziarat, Harnai and Peshawar East).

The Company is also a non-operating joint venture partner with leading national and international E&P companies in two D&P leases (Adam, Adam West) and five exploration blocks (Hala, Kohlu, Kalchas, Kohat, and Shah Bandar).

During the financial year 2015-16, the Company produced 30.48 million barrels of oil equivalent energy which resulted in foreign exchange saving of around Rs 142 billion. In addition, the Company contributed around Rs 77.33 billion to the national exchequer on account of taxes, royalty, excise duty, sales tax, gas infrastructure development cess and gas development surcharge.

## Bannu West Block

Bannu West Block, spread over an area of 1,229.57 square kilometre, straddles district Hangu and Bannu, FR Bannu, North Waziristan and Kurram Agencies. Approximately 87.5% of total area falls in FATA while rest 12.5% in KPK. The block falls in hydrocarbons prospectively Zone-I. The block was awarded to TPDL on April 27, 2005. In January 2016, Mari Petroleum Company Limited (MPCL) has

bought 20 percent shares in Bannu West Block from Tullow Pakistan Development Limited (TPDL) and become the operator of the Block with 35 percent shares. At present OGDCL, TDPL & SEL has 35, 20 & 10 percent shares respectively. Project area map having proposed 3D polygon area and 2D seismic survey lines are shown in (See Figure ES-2).

### The Project Rationale

Mari Petroleum Company Ltd (MPCL) intends to conduct two dimensional (2D) and three dimensional (3D) seismic survey in its Bannu west Block. Any further activities will require separate IEE/EIA. The proposed activities planned in Bannu West Block that falls in the geographical jurisdiction of FATA is hereafter referred as 'project area'. The exact location of proposed 2D seismic lines & 3D seismic area is shown (See Figure ES-2).

The seismic data acquisition will be carried out using a combination of vibroseis and dynamite shooting technologies. The objective of the seismic survey is to explore the subsurface hydrocarbon-laden formations. For seismic survey a base camp with fly camp (if required) will be established to house the seismic crew. Resources utilized from within the project area will include local manpower, land, gravel, and water. The project specification has been mentioned in below table.

### Project Specification

Sr. No	Activity	Specification
1	2D Seismic Survey	305 Line Km
2	3D Seismic Survey	845 Sq km

This IEE covers only 2D & 3D seismic survey activities that falls in FATA. Hence, the IEE report is based on the fact that MPCL will obtain NOC for the IEE (covering 2D & 3D seismic operation) from Pak-EPA and obliged to submit the all relevant data before commencement of project activities.

### The IEE Methodology

Various steps undertaken in the IEE preparation included understanding of the proposed operation; review of legislation and guidelines (details provided in Chapter 3); IEE scope and methodology; collection of secondary data including physical environment; biological environment; socio-economic environment and heritage aspects; primary field data collection; public consultation, impact identification; recommendations for mitigation and monitoring measures; development of environmental management plan (EMP) and reporting.

Field survey for the IEE study was carried out by a team of environmental Engineer, wildlife specialist, social expert and botanist to collect primary data. Field survey was also conducted to validate available secondary data. Secondary information was collected from MPCL, in-house sources like previous environmental studies and Census Reports. Applicable environmental assessment procedures prepared by the Pakistan EPA were followed during the preparation of the IEE.

### Impacts and Mitigation

The IEE covers potential effects of the proposed project activities in the project area. Potential impacts on the physical, biological, socio-economic, archaeological and cultural environment that may arise from the proposed project activities and the mitigation measures that will be adopted to reduce or minimize the impact have been assessed and are summarized in **Table ES-1**. The summary of minimum distances from sensitive environmental and social receptors has been mentioned in **Table ES-2**.

### Environmental Management Plan

For the effective implementation and management of mitigation measures, an Environmental Management Plan (EMP) has been prepared.

The EMP provides a delivery mechanism to address potential impacts of project activities, to enhance project benefits and to introduce standards of good practice in all project activities. The EMP has been prepared with the objective of:

- Defining legislative requirements, guidelines and best industry practices that apply to the project;
- Defining mitigation measures required for avoiding or minimizing potential impacts assessed by the IEE;
- Defining roles and responsibilities of the project proponent and the contractor; and
- Defining requirements for environmental monitoring and reporting.

### Conclusion

The IEE concludes that the proposed 2D/3D seismic activities in Bannu West Block-FATA portion will not lead to adverse environmental impacts of such nature or magnitude that would require a more detail analysis. Additionally, careful implementation of the EMP would ensure appropriate management and mitigation of environmental impacts raised during execution of the project. Moreover, MPCL will meet all statutory requirements imposed by Pak-EPA.