

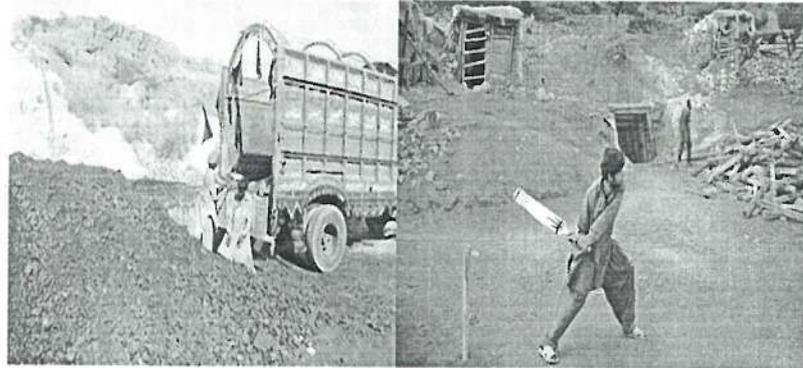
**ENVIRONMENTAL IMPACT ASSESSMNT (EIA)
REPORT**

FOR M/S KARAM SONS (Private) Ltd.

LEASE AREA NUMBERS

ML-CKL-I-COAL (137), ML-CKL-I-COAL (209)

House No. 5, Street No. 19, Sector F-6/2, Islamabad.



PREPARED BY:

**FAHAD NAEEM (FIRST CLASS CERTIFIED MINING
ENGINEER) (03334259005)**

**ENVIRONMENTAL IMPACT ASSESSMENT FOR COAL MINING LEASES
NO: ML-CKL-I-COAL (137); ML-CKL-I-COAL (209), CHOA SAIDEN
SHAH.**

AT TEHSIL CHOA SAIDEN SHAH, DISTRICT CHAKWAL

Sr No.	Contents	Page No
*	Executive Summary	i-v
1.	Introduction of the Projects	5-7
2.	Applicant Company	8-9
3.	Need for EIA Study Of The Project	9
4.	Scope of Study	10
5.	Physical Environment	13-14
6.	Biological Environment	14-15
7.	Socio- Cultural Environment	15-16
8.	Identification and Evaluation of Environmental Impacts	16
9.	Mitigation Measures and Implementation Arrangements	16
10.	Structure of the Report	16-17
11.	Policy, Legal and Administrative Framework.	17
11.0	General	17
11.1	Policy Framework	18
11.1.1	National Environmental Policy, 2005	18
11.1.1	National Resettlement Policy, 2002.	18
11.2	Legal Framework	18
11.2.1	Pakistan Environmental Protection Act, 1997.	19
11.2.2	Pakistan Environmental Protection Agency (Review of IEE/EIA) Regulations, 2000.	20
11.2.3	Pakistan Environmental Assessment Procedures, 1997.	20-21
11.2.4	Other Relevant Laws.	21
11.2.4 (a)	Punjab Local Government Ordinance, 2001	21
11.2.4 (b)	Canal and Drainage Act, 1873	21
11.2.4 (c)	Pakistan Penal Code, 1860	21
11.2.4 (d)	Guideline for Solid Waste management (2005)	22
11.2.4 (e)	Sect oral Guidelines (1997)	22
	Ambient Gaseous Monitored Data of Project Site.	23
11.2.4.1	Air Quality Standards	23
	Table 2.1: Ambient Air Quality Standards	24
11.2.4.2	Noise Quality Standards	25

	Baseline Noise levels Monitored Data of Lease Area	26-27
11.2.5	Drinking Water Quality Standards	28
	Table 2.3:Drinking Water Quality Standards	28-29
11.2.6	Occupational Health	30
11.2.7	Toxic or Hazardous Waste	30
11.2.8	Preservation of Cultural Heritage	30
11.2.9	Administrative Framework	30
11.2.9.1	Environmental Protection Agency, Punjab	30
11.2.9.2	Rules of Business for District Environment Office under Punjab LGO, 2001	31
11.2.9.3	Consolidated Mines Rules, 1952	32
	The Mines Act 1923	33-54
	The Coal Mines Regulation 1926	54-99
	The Coal Mines Pithead Bath Rules 1926	100-102
12.	Analysis of Alternatives (Technology at Site)	102
12.0	General	102
12.1	Land Use Alternatives	103
12.2	Site Selection	103
	Description of the Project	104
	Policies and Legal Framework	105
	Physical Impacts	107-114
	Public Participation	115-118
	Biological Environment	121-135
	Development Scheme, Lease No. ML-CKL-I-Coal (137)	136-146
	Development Scheme, Lease No. ML-CKL-I-Coal (209)	147-152
	Environmental Impacts and Mitigating Measures for Coal Mining.	152-154
	Conclusion	154
	Schedule IV	155-156
Lease	Renewal letter No. DGMM/ML-CKL-I-Coal(137)/16 dated 22-11-2016; For 616.43 Acres Near Village Katas in District Chakwal; with the plan.	Annexure-
Lease	Renewal letter No. ML-CKL-I-Coal(209)/17 dated 08-03-2017, over an Area of 453.63 Acres near village Dhariala, District Chakwal; with the plan.	Annexure-
	AFFIDAVIT/Undertaking	Annexure-

Executive Summary:

The Company was directed to submit EIA report in the headquarters office of EPA Punjab, Lahore, under section 12 of Environmental Protection Act 1997(Amended 2012). This report revolves around the coal mining project of Karam Sons (Pvt) Ltd. near village Katas and Dhariala, Tehsil Choa Saiden Shah, District Chakwal. The mining activities started in year 1975 and this report is the effort to assess the impact on environment due to the mining activity in the area.

Title and Location of the Project:

This report presents the findings of an Environmental Impact Assessment (EIA) carried out by Fahad Naeem (First Class Certified mining Engineer an 15 years of coal mining experience) to assess the environmental impacts on surrounding Area of Village Katas and Dhariala, Tehsil Choa Saiden Shah, District Chakwal, Punjab, due to mining activities near village Katas and Dhariala, Tehsil Choa Saiden Shah, District Chakwal.

Name of the Proponent:

The proponent of this report is Karam Sons (Pvt) Ltd. Tehsil Choa Saiden Shah, District Chakwal. This EIA report is the study of mining operations and its impact on the surrounding environment.

EIA Consultant:

In order to fulfill the legal requirement, the proponent has to conduct an Environmental Impact Assessment Study. For this purpose, Karam Sons (Pvt) Ltd has hired the services of the above mentioned. This EIA study was carried out by the team of sector experts with diversified experience in the field.

A Brief Outline of the Proposal:

The project area is owned by Karam Sons (Pvt) Ltd. regulated by Mines & Mineral Department, Government of Punjab. As per increasing demand of coal for energy production in Pakistan, coal mining is very essential to provide a low cost fuel for electricity production and supply to the brick kiln industry for the production of bricks. The project site lies in village Katas and Dhariala, Tehsil Choa Saiden Shah, district Chakwal. In the project area there are coal mines some are operational while some are closed temporarily or permanently.

The objective of this study is to give a baseline understanding of possible environmental impacts due to mining activities in the area.

Public consultation is an integral part of the EIA process. Public Consultations is essentially a tool used for the purpose of information dissemination, exchange of views and soliciting feedback and suggestions of key stakeholders about the project and the EIA. During the EIA process, meetings were held with various stakeholders to solicit and record their views and concerns. The stakeholders consulted primarily included some prominent public representatives, communities residing the Village Katas, Deri Syedan, Dalwal, Mial Sharif Dhariala and Beneficiaries of the project area listed in below table;

Table 1: Stakeholder Consultation

Sr. No.	Consultation Site
Primary Consultation	
1.	Village Katas
2.	Village Deri Syedan
3.	Village Dhariala
4.	Village Dalwal
5.	Village Mial Sharif
6.	Company office at the site
Secondary Consultation	
7.	Sub Office Choa Saiden Shah

Their views and concerns were enquired through different consultation techniques and were incorporated into the EIA mitigation measures.

An environmental baseline study is intended to establish a data base against which potential can be predicted and managed later. The EIA of the project covers a comprehensive description of the project area, including regional resources which are expected to be affected by the project. The existing environmental conditions around the proposed project have been considered with respect to physical, biological and socioeconomic aspects.

Chakwal district is part of Pothohar Plateau. The district stretches from the River Jhelum to the vicinity of River Indus. Chakwal district consists of salt range consisting of many mines. There were two coal-mines in the district from which the north-western coal-mine railway obtained partial supply in the past.

The salt Range as a whole is a flat-topped interlude between the majestic Himalayas in the north and the immense massive Indian Shield in the south. The salt Range covers a distance of 200 Km with persistent East-West strike.

Project site is located in District Chakwal, which is situated entirely on the alluvium plain. Kanker is found all over district. Sediment deposits are visible in the low velocity area of the river where initial plant colonizers can be seen at the early serial stages of succession of vegetation. Along the banks of the river, gradual accumulation of sediments has resulted in "Bela" formation, which supports tree growth and hence named as "Zakeeras".

Chakwal has a humid subtropical climate (Koppen climate classification Cfa) and is extremely hot and humid in summer, and cold and generally dry in winter. The maximum recorded temperature in the pre-monsoon season of April to June is 49.2°C (120.6°F), whereas in winter the minimum temperature recorded is -0.6°C (30.9°F). Average annual rainfall is about 850 millimeters (33 inch). Nevertheless, in the rainy season water torrents flow from the north to Jhelum River very rapidly and cause damage to the crops, bridges and the roads and also responsible for the soil erosion in the district.

The socioeconomic study of the project area was designed and conducted to meet the following objectives:

- To assess the human environment of the area i.e. to determine the quality of life of communities within the Region of Influence.
- To have an insight into the day to day activities of people especially focusing on their income generating activities viz., agriculture and labor.
- To assess the vulnerabilities of the local communities and the effects of project activities on their quality of life and
- Consultation with communities regarding the proposed project activities and to find out their concerns and aspirations.

The impacts, mitigation and their management schedule have been discussed later in the report.

Summary of Potential Environment Impacts Due to Mining:

Primarily, anticipated impacts have been categorized as direct, indirect and induced impacts. These impacts can be further broken down according to their nature:

- Positive and negative impact;
- Minor, major and moderate impact;
- Local and widespread impact
- Temporary and permanent impact;
- Short and long term impact; and
- Reversible and Irreversible impact

After the study it has been verified that **the mining is currently not affecting the adjacent area**, clean drinking water is available in the form of wells and bore holes in the area. As the mining activity is away from the forest area no Flora and Fauna is affected. This mining project is acting as a catalyst for social uplift of the surrounding villages by providing employment and social welfare works. Presently, the impacts of coal mining on the surrounding of the project site are not significant.

It is suggested that the authorities should provide the required funds for the improvement of technical know-how in field of mining so that better technologies can be introduced in future.

Health safety & environmental conditions in underground mining should be improved by the application of better methods of methane removal from the coal seam prior to mining, development of better ventilation and dust control equipment (in this case Karam Sons (Pvt) Ltd. was up to the mark).

Proposed Monitoring Plan

Environmental monitoring can be categorized into two types;

- Compliance Monitoring.
- Effects Monitoring.

The Environmental monitoring will be conducted according to EPA regulation.

Compliance Monitoring:

Compliance Monitoring will be carried out to ensure compliance with the requirements of the EIA.

The proponent shall carry out the inspections on a routine basis. This will also include routine monitoring of effluent and emissions and mining operational parameters to ensure effective operations of plant and auxiliary systems.

Effects Monitoring:

Effects monitoring will be done to monitor actual impacts of the project on selected sensitive receptors so that the impacts not anticipated in the EIA report or the impacts that exceed the anticipated levels in EIA report can be identified and appropriate mitigation measures can be adopted on time.

Considering the environmental conditions of the project area and the assessment of potential impacts of the project made in the EIA, the following Monitoring Program will be undertaken:

- **Ambient Air Quality-** Ambient air monitoring will be carried out to validate the results of air monitoring. The monitoring will be carried out at key locations covering both environmental receptors and workers occupational exposures.
- **Noise-** Measurement of noise levels within the mining areas and the surroundings will be carried out on regular basis to ensure that the noise levels are within the standards stated in the EIA.
- **Surface water-** As a good environmental practice, water will be monitored regularly to observe any unlikely change in water properties.

1. INTRODUCTION OF THE PROJECT

1.1 The project of coal mining at the Lease No. ML-CKL-I-Coal (137) and ML-CKL-I-Coal (209) were started in the year 1975. The area of the Lease no. ML-CKL-I- Coal (137) fall on the Topographic Sheet No. 43-D/14 and 43-H/2 on the Survey Maps issued by Survey of Pakistan. The Lease Area No.ML-CKL-II-Coal (209) falls on the Topographic sheet no. 43 D/13 and 43-H/2 on the Survey Maps issued by Survey of Pakistan..

The total area of the Lease No.ML-CKL-I-Coal (137) is 617.43 acres near village Katas. It falls on the Topographic sheet No. 43-D/14. The total area of the Lease No.ML-CKL-I-Coal (209) is 453.63 acres near village Dhariala, Tehsil Choa Saiden Shah, District Chakwal. It falls on the Topographic sheet No. 43-D/13.

The Proponent Company is working in all of the two Leases. All Leases are adjacent and nearby to each other. The environment, Climate and weather are the same in the granted areas. All the Leases are granted in Tehsil Choa Saiden Shah, District Chakwal.

1.2 The Proponent is M/s Karam Sons (Private) Ltd.

1.3 The chief Executive of the Company is Mr. Malik Muhammad Tahir Mehmood Awan s/o Malik Karam Baksh Awan.

1.4 The Head Office of the Company is at House No. 5, Street No. 19, Sector F-6/2, Islamabad.

1.5 The works of the Company are at Choa Saiden Shah, District Chakwal.

1.6 The project as defined in the Punjab Environmental Protection Act, 1997 (XXXIV of 1997) under the section 2 Definitions, (XXXV) under the definition of "Project" means any activity, plans, scheme proposal or understanding involving any change in the environment and includes:- part (d)

of the sub clause relates to the subject of mining. It says "Mineral prospecting, mining, quarrying, stone crushing, drilling and the like". We are operating a mining project. The project relates to the coal mining. We have to explore the area for the coal and after the prospecting and proving the coal deposit. We have to produce coal and supply coal to the end users, i.e. Brick kilns (Bhatta Owners). The project relates only to the mining and excavation of coal. The project is not related to any mineral processing.

1.7 The review of IEE and EIA Regulations, 2000, under the schedule II (See Regulation 4), Part (c) Mining and Mineral processing.

(1) The part (c) (1) relates to the project of coal mining and processing the company is involved in the business of mining of coal only. There is no processing of coal project.

1.8 The lease granted from the Government of the Punjab has been granted and renewed under the Punjab Mining Concession Rules, 2002 under the category of Small Scale Mining.

1.9 The project as defined by the Government of the Punjab, Environmental Protection Agency, Qaddafi Stadium, Lahore. The Notification No. Dir (EIA)/01/2017 dated 29-05-2017 by the Director General, EPA. The Para 2 part (x) says, The Advisory Committee Examined in detail in meeting dated 12-05-2017 and advised that the following projects do not have any significant environmental impact or fall in schedule –I or schedule – II of the Regulations ibid and therefore they do not require environmental approval in terms of section 12 of the Act ibid Sub Para (x) cottage Industry units of various types with project cost of less than Rs. 10 million unless otherwise specified by the Agency. The copy of the notification is being attached as Annexure ' a '.

1.10 The present project of the Company falls in the category of cottage Industry and the cost of the project is less than Ten million. It is situated near village Katas and Dhariala, Tehsil Choa Saiden Shah, District Chakwal. The Khewra Town lies on the south of the Choa Saiden Shah, Town. The famous salt mine of PMDC Khewra, which has been declared as the Tourist place and eighth wonder of the world is Twenty Seven kilometer from the mine project. The Katas Raj a sacred place of the Hindus lies 1 KM from the mine project. The motorway M-2 is 28 KM at the exit of Kalar Kahar from the Mine Project. The two cement plants Best way Cement and D.G Cement are situated on the Choa Saiden Shah to Kalar Kahar road, 3 KM and 7 KM from the Mine Project, respectively. The river Jhelum lies on the south of the lease area and is 25 KM near the Tehsil, city Pind Daden Khan of District Jhelum.

2. The Applicant Company

Profile

2.1 M/S Karam Sons (Private) Ltd was established in the year 1975 for the purpose of coal Mining Business. In the year 1975 it was registered under the Partnership Act, 1932. Later in the year 1963-1964 on the date 18-11-1963 it was incorporated under the Companies Ordinance, 1984. The company Incorporation Number : 622 of 1963-64 dated 20-11-1963. It was registered under the companies ordinance with the Securities and Exchange Commission of Pakistan. It was registered under the companies ordinance with the Securities and Exchange Commission of Pakistan.

2.2 The present name of the Directors and Share Holders are being given below:

Name	Particulars	Qualification
Malik Tahir Mehmood	Chief Executive (Director)	Bachelors, USA.
Malik Azhar Ali Awan	Director	Bachelors. USA.
Malik Mazhar Iqbal	Director	Bachelors, USA.
Mst. Zille Huma	Director	Bachelors, USA.
Mrs. Naveen Mazhar	Share Holder	

2.3 The authorized capital of the company is Rs. 5,000,000 (Fifty Lac only) and paid up capital is Rs. 4,480,000 (Forty Four Lac Eighty Thousands only).

The business of the company has been declared by the Federal Board of Revenue (FBR), as small enterprise. The Department of Mines and Minerals have granted the leases under the category of Small Scale Mining. The EPA Notification No. Dir (EIA)/01/2017 dated 29-05-2017

have declared cottage Industry to those business enterprises that has Project cost of less than Rupees ten Million. The Form 'A' and the Form '29' showing the list of Directors and the shareholders as well the amount of paid up capital and subscribed capital attested by the Securities and Exchange Commission of Pakistan (SECP) is being attached Annexure 'b'.

The Paid up Capital of the Company is (Forty Four Lac Eighty Thousands only) and subscribed capital is (Fifty Lac only).

3. **Need for EIA Study of the Project.**

EIA is mandatory according to the Punjab environmental protection (Amendment) Act, 2012 of Pakistan Environmental Protection Act (PEPA-1997). Section 12 (1) of the PEPA- 1997 which states that "No Proponent of a project shall commence construction or operation unless he has filed with the provincial Agency an initial environmental examination or where the project is likely to cause adverse environmental effect, an environmental impact assessment; and has obtained from the provincial Agency approval in respect there of".

According to the Pakistan Environmental Protection Agency (Review of IEE and IEA) Regulation 2000; the proponent project falls under category C (Mining and Mineral processing) under schedule II, which requires EIA before commencement of construction and operation. The project is coal mining project.

Lease No. ML-CKL-I-Coal (137) and ML-CKL-I Coal (209) has been working since the year 1975. All the mining operations are being conducted before the year 1997 and the mines are still operational. The coal mining is an underground mining project and is a long term working project. The coal is excavated through inclined mines and tunnels. The shaft sinking is also a method to reach the underground coal seam. The distance from surface to the

bottom varies on the Geological features of the area. The usual distance from the surface to the coal seam is from 250 ft to 480 ft vertical beneath the surface.

4. Scope of Study.

The scope of the EIA Study aims at collecting and scrutinizing data related to physical, biological and socio-economic environment of the area and to prepare the baseline environmental profile. It also aims at the identification, prediction and evaluation of the possible environmental impacts of the proposed project on its immediate surroundings on both short and long-term basis. Based on the nature and levels of those impacts, appropriate mitigation measures along with the cost have been incorporated in this EIA Report. The EIA has been included in project development to streamline environmental issues in project design, and operational stages. The scope of the Environmental Impact Assessment as envisaged in the Terms of Reference (TOR) includes the delivery of a EIA and EMP Report, which assess the impact of the project Mining Leases as per provisions of the applicable laws and also identify a package of measure to reduce/ eliminate the adverse impacts identified during the assessment. This report presents the Environmental Assessment of the project and the EMP for the anticipated impacts.

4.1 Study Objectives

The overall objective of EIA is to assess the environmental impacts expected to arise for the areas proposed for the grant of leases. The specific objectives of the EIA Study for operation of coal mines include the following.

- Collection and synchronization of data related to possible physical, biological and socio-economic environment impacts and to prepare baseline environmental profile;

- Identification, prediction and evaluation of environmental impacts of the mining project;
- Implementation of mitigation measures to minimize the adverse impacts; and
- Preparation of an Environmental Management and Monitoring Plan.

4.2 Project Proponent and Consultant

The project proponent is M/s Karam Sons (Private) Ltd, House No. 5, Street No. 19, Sector F 6/2, Islamabad. The company was established in the year 1980. Since then it is involved in the coal mining business. The project site is at Choa Saiden Shah, District Chakwal. The lease areas are situated near village Katas and Dhariala, Tehsil Choa Saiden Shah, District Chakwal. The lease area ML-CKL-I-Coal (137) are located at Survey of Pakistan Topographic sheet No. 43-D/14 and the total area of the lease is 616.43 acres respectively. The lease area ML-CKL-I-Coal (209) are located at Survey of Pakistan Topographic sheet No. 43-D/13 and the total area of the lease is 453.63 acres respectively.

Table 1.1: Contact details of the Proponent

Malik Tahir Mehmood Awan, Chief Executive
M/s Karam Sons (Private) Ltd
House No. 5, Street No. 19, Sector F6/2, Islamabad.
Project No. Choa Saiden Shah 0543-580024, 580664

Table 1.2 Details of Environmental Consultant

Malik Tahir Mehmood Awan, Chief Executive Bachelors USA; experience on coal mining projects more than 40 years.

Fahad Naeem, First Class certified Mine Manager; Masters Punjab University, Lahore.

Mining Consultant Experience in Multiple Coal Mining Project more than Fifteen years; Attended courses on safety ventilation, management and explosive use in the mines.

4.3 Methodology

The following methodology was adopted for carrying out the EIA study.

(a) **Orientation**

Meeting and discussions were held among the members of the EIA Consulting Team. This activity was aimed at achieving a common ground of understanding of various issues related to the project.

(b) **Planning for Data Collection.**

Subsequent to the concept clarification and understanding obtained in the preceding step, a detailed data acquisition plan was developed for the internal use of the EIA Consulting Team. The plan included identification of specific data requirements and their sources, determined time schedules and responsibilities for their collection, and indicated the logistics and other supporting needs for the execution of the data acquisition plan.

(c) **Data Collection.**

In this step, primary and secondary data were collected through field observations, environmental monitoring in the field, concerned departments and published materials to establish baseline profile for physical, biological and socio-economic environmental conditions. The following activities were undertaken to gather the required data.

- Site Reconnaissance

- Analysis of Maps and Plans
- Literature Review
- Desk Research
- Public Consultations
- Field Observations & Studies
- Laboratory Analysis

5. **Physical Environment.**

Information was gathered on the existing physical environment, particularly as related to geology, topography, soils, hydrology and drainage, water quality, air quality and noise.

5.1 **Geology, Topography, Soils.**

A review was conducted of relevant literature on the geology, topography and soils in the Project Area. The field area of all the leases were visited and inspected to find out the geology and Topography and soils as per the Topographic and Geological maps of the survey of Pakistan.

5.2 **Hydrology and Drainage.**

A literature review was conducted to identify the components of the hydrological cycle that are likely to impact on the project and the possible impacts that the project could have on the hydrologic cycle. Field assessments included a determination and verification of all the existing inflows into the drain, assessment of drainage issues, interviews with local community members, and round-table discussions with stakeholders.

5.3 **Air Quality.**

Ambient air quality measurement are essential to provide a description of the existing conditions, to provide a baseline against which changes can be

measured and to assist in the determination of potential impacts of the proposed construction on air quality conditions. Ambient air quality was continuously monitored for carbon Monoxide (CO), Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂), particulate Matter (PM₁₀), for 1 hour. An EPA Certified Lab SEAL was hired for air quality monitoring.

5.4 **Noise.**

Noise level readings were taken for 2 hours with the interval of one second and hourly average data was reported. Sound level measurements were taken using a digital sound meter (TES 1350A).

5.5 **Water Quality.**

Water quality monitoring was conducted to determine the water quality situation prior to construction. It has been observed that the surface water and air quality are the most important environmental variables to be affected in the project. The extent of surface water and groundwater contamination in the project area was assessed based on the test results of chemical and microbiological parameters for surface and groundwater. Dissolved oxygen (DO), ph and conductivity measurements were taken in situated at all sampling stations. Laboratory analyses were performed according to SOP based on recognized methods of ASTM, USEPA, or APHA methods. An EPA certified Lab SEAL was hired for water quality sampling.

6. **Biological Environment.**

The status of the flora and fauna of the study area were determined by ecological survey, a review of literature relevant to the area, and an assessment of terrestrial environments.

6.1 **Flora**

The vegetative communities were identified and classified into community types. Identification was carried out of dominant tree species,

assessment of stage of growth (mature or sapling) and assessment of canopy cover.

6.2 **Fauna.**

Information on fauna was gathered from existing literature on reported species as well as observations in the field.

7. **Socio-Cultural Environment.**

The consultants utilized a combination of desk research, field investigation, census data, structured interviews, maps, and reports to generate the data required for description of the existing social environment and assessment of the potential impacts of the construction of the proposed project. Data was gathered on the following aspects of the social environment:

- Land use and Municipal Status
- Traffic, Transportation and Access Roads
- Demographics
- Livelihoods
- Poverty
- Education
- Health
- Social Setup
- Community facilities
- Solid Waste management
- Proposed Developments

- Recreational Activities
- Archaeological and Cultural Heritage

8. **Identification and Evaluation of Environmental Impacts**

The impacts of the project on the physical, biological and socio-economic environment at the design, construction and operational phases were identified and evaluated based on their type and magnitude.

9. **Mitigation Measures and Implementation Arrangements**

Adequate mitigation measures and implementation mechanisms were proposed so that the proponent could incorporate them before hand in the design phase.

10. **Structure of the Report**

Section 1: Introduction briefly presents the project background, objectives, methodology and need of the EIA study.

Section 2: Policy, Legal and Administrative Framework comprises policy guidelines, statutory obligations and roles of institutions concerning EIA of the Project

Section3: Analysis of Alternatives (Technology & site)

Section 4: Description of the project furnishes projects related information such as location, cost, size and major components. It also contains a description and evaluation of the various alternatives that were under consideration and a justification for selecting the proposed system. .

Section 5: Environmental Baseline Profile establishes baseline conditions for physical, biological and socio-economic conditions prevalent in the project area.

Section 6: Public consultation identifies the main stakeholders and their concerns raised through discussion, and deals with the measures to mitigate the social impacts.

Section 7: Anticipated Environmental Impacts and Mitigation Measures identifies, predicts and evaluates impacts of the project activities during the construction and operation stages and deals with the measures proposed to mitigate potential environmental impacts of the project.

Section 8: Environmental Management and Monitoring Plan outlines institutional arrangements for the implementation of the proposed mitigation measures, training needs of the staff for implementation of the mitigation measures, monitoring requirements, monitoring cost etc.

Section 9: Conclusion & Recommendation.

11. Policy, Legal and Administrative Framework.

11.0 General.

Environmental impact assessment of all development projects whether public or private is a legal requirement under section 12 of Pakistan Environmental Protection Act of 1997 (Amended 2012) which became operational in year 2000 in addition to, Review of environmental impact assessment Regulations (Appendix-I). The regulations also listed the project categories, which require an IEE in its Project stage-I and the projects for which an EIA is required are in project stage-II. For projects not listed in Project stage-I and II, IEE or EIA is not required, unless the projects is likely to cause an adverse environmental effect and the projects for which EPA has issued guidelines for construction and operation, an application for approval accompanied by an undertaken and an affidavit that the aforesaid guidelines will be followed is required.

11.1 Policy Framework

The Ministry of Environment is the authority responsible for policy making for environmental protection in Pakistan.

11.1.1 National Environmental Policy, 2005

In March 2005, Government of Pakistan (GOP) launched its National Environmental Policy, which provides an overarching framework for addressing environmental issues. Section 5 of the policy commits for integration of environment into development planning as instrument for achieving the objectives of National Environmental Policy. It further states in clause (b) of subsection 5.1 that EIA related provisions of Environmental Protection Act, 1997, will be diligently enforced for all development projects. It also provides broad guidelines to the federal government, provincial governments, federally administered territories and local governments to address their environmental concerns and to ensure effective management of their environmental resources.

11.1.2 National Resettlement Policy, 2002.

In March, 2002 Pakistan Environmental protection Agency (Pak-EPA), GOP issued its National Resettlement Policy, which explains the basis for compensation, rehabilitation and relocation project affected persons. It also explains the requirements and implementation of Resettlement Action Plan (RAP).

11.2 Legal Framework.

GOP has promulgated laws, acts, regulations and standards for the protection, conservation rehabilitation and improvement of the environment. In addition to this, they have also developed rehabilitation and improvement of the environment. In addition to this, they have also developed environmental assessment procedures governing developmental projects. The relevant excerpts of these laws and procedures are attached below.

11.2.1 Pakistan Environmental Protection Act, 1997.

The Act was enacted on December 06, 1997 by repealing the Pakistan Environmental Protection Ordinance, 1983. It provides the framework for implementation of the PNCS, 1992, establishment of provincial sustainable development funds, protection and conservation of species, conservation of renewable resources, establishment of Environmental Examinations (IEE), and Environmental Impact Assessments (EIA). Section 12 of the Act stresses the need to carry out EIA/IEE study prior to construction or operation of a project. PEPA, 1997 is available at official website of EPD, Punjab.

After the passing of the 18th Amendment to the Constitution of Pakistan, Pakistan's Federal Ministry of Environment was developed to the provincial level on June 30, 2011. Thus, a recent amendment in Pakistan Environmental Protection Act, 1997 was presented and published in Punjab Gazette on April 18, 2012 as an Act of Provincial Assembly of Punjab.

Twenty Three amendments have been made in the Punjab Environmental Protection (Amendment) Act, 2012. The amendments can be categorized as follows:

- Amendments in short Title and commencement as Punjab Environmental Protection Act and it extends to the whole of Punjab only;
- Amendments in administrative jurisdiction (Transfer of powers and control from Federal to Provincial Government).
- Definitions and reference to the territorial waters, exclusive economic zone and historic waters shall be omitted based on the devolution of powers from Federal to provincial levels and
- Amendments in penalties.

11.2.2 Pakistan Environmental Protection Agency (Review of IEE/EIA) Regulations, 2000.

These regulations provide criteria for projects requiring IEE and EIA. They also briefly describe the preparation and review of environmental reports. These Regulations are also available at official website of EPD, Punjab.

11.2.3 Pakistan Environmental Assessment Procedures, 1997.

Protection of the environment with regards to toxic and hazardous waste is covered by the Pakistan Penal Code (PPC), 1860. Environment Protection Department (EPD), Punjab, is mandated to monitor the transportation of hazardous materials within the provincial limits. Pakistan Environmental Assessment Procedures (1997) contains the following sets of information relevant to the proposed project.

(a) Policy and Procedures for Filing, Review and Approval of Environmental Assessment Reports.

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

(b) Guidelines for the Preparation and Review of Environmental Reports

These guidelines are developed to facilitate both the proponents and decision makers to prepare reports (inclusive of all the information contained therein) and carry out their reviews so as to make informed decisions.

(c) **National Environmental Quality Standards (NEQS), 2010.**

Pakistan Environmental Protection Council (PEPC) first approved these standards in 1993. They were later revised in 1995, 2000 and 2010. They furnish information on the permissible limits for discharges of municipal and industrial effluent parameters and industrial gaseous emissions in order to control environmental pollution. The National Environmental Quality Standards (NEQS), 2010 are available at official website of EPD, Punjab.

11.2.4 Other Relevant Laws.

(a) **Punjab Local Government Ordinance, 2001**

Environmental protection is developed subject under Punjab Local Government Ordinance (LGO), 2001. Despite any specific provisions, every local government may perform functions conferred by or under the Punjab LGO, 2001 and in performance of such functions may exercise such powers, which are necessary and appropriate. Until different provisions, rules, regulations or byelaws are made, the local government may exercise such powers as are specified in the Sixth Schedule of Punjab LGO, 2001. Environmental protection is at serial 48 of the Sixth Schedule.

(b) **Canal and Drainage Act, 1873**

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

(c) **Pakistan Penal Code, 1860**

This defines the penalties for violations concerning pollution of air, water bodies and land.

(d) **Guideline for Solid Waste Management (2005)**

Guidelines for Solid Waste Management have been issued as a draft by the Pakistan Environmental Protection Agency in coordination with JICA and UNDP. These guidelines explain the waste generation, discharge and composition.

(e) **Sectoral Guidelines (1997)**

Pakistan Environmental Assessment procedure deals with general guidelines as well as the sectoral guideline for the Environmental Assessment Studies. The sectoral guidelines have been given for some categories of the project and deals with the following.

1. Major thermal power stations
2. Major chemical manufacturing plants
3. Municipal waste disposal
4. New township development
5. Oil and gas exploration and production
6. Major roads
7. Water Supply Projects
8. Sewerage Schemes
9. Industrial estates, etc.

Ambient Gaseous Monitored Data of Project Site.

Reference Client: M/s Karam Sons (Pvt) Ltd.
Date of Monitoring: _____
Nature/source of sample(s): Ambient Gases Coal Mining
Testing specification: Impugners Method /Dragger Minivan

Reference Point	SO₂ (µg/m³) 24 hours Average	NO₂ (µg/m³) 24 hours Average	CO (µg/m³) 24 hours Average
Eastern Side of Lease Area	6.3	7.1	0.42
Western Side of Lease Area	4.1	5.2	0.25
Southern Side of Lease Area	7.7	6.2	0.32
Northern Side of Lease Area	5.5	7.4	0.16
Center of Lease Area	8.3	6.1	0.45
NEQS Limiting Value	120.0	80.0	5.0

11.2.4.1 Air Quality Standards

In pursuance of the statutory requirement under clause (e) of sub-section (1) of section of the Pakistan Environmental Protection Act, 1997 (XXXIV of 1997), the Pakistan Environmental Protection Agency with prior approval of the Pakistan Environmental Protection Council, has published the

NEQS for Ambient Air in 2010. UNSEPA standards along with NEQS effective from January, 2013 are given in Table 2.1

Table 2.1: Ambient Air Quality Standards

#	Pollutant	NEQS		USEPA	
		Time-Weighted average	Concentration standard	Time-Weighted average	Concentration standard
1	SO ²	Annual average	80 µg/m ³	Annual arithmetic mean	80 µg/m ³ , (0.030 ppm)
		24 hours	120 µg/m ³	24-hours average	365 µg/m ³ , 0.50 ppm
2.	NO	Annual average	40 µg/m ³	-	-
		24 hours	40 µg/m ³	-	-
3.	NO ₂	Annual average	40 µg/m ³	Annual arithmetic mean	100 µg/m ³ , (0.053 ppm)
		24 hours	80 µg/m ³		
4.	O ₃	1 hour	130 µg/m ³		235 µg/m ³ , (0.12 ppm)
		-	-	8 hours average	157 µg/m ³ , (0.08 ppm)
5.	Suspended Particulate Matters (SPM)	Annual average	360 µg/m ³	-	-
		24 hours	500 µg/m ³	-	-
6.	PM ₁₀	Annual average	120 µg/m ³	Annual arithmetic mean	50 µg/m ³
		24 hours	150 µg/m ³	24-hours	150 µg/m ³

				average	
7.	PM2.5	Annual average	15 $\mu\text{g}/\text{m}^3$	Annual arithmetic mean	15 $\mu\text{g}/\text{m}^3$
		24 hours	35 $\mu\text{g}/\text{m}^3$	24-hours average	65 $\mu\text{g}/\text{m}^3$
		1 hour	15 $\mu\text{g}/\text{m}^3$	-	-
8.	Lead	Annual average	1 $\mu\text{g}/\text{m}^3$	Quarterly average	1.5 $\mu\text{g}/\text{m}^3$
		24 hours	1.5 $\mu\text{g}/\text{m}^3$		
9.	CO	8 hours	5 mg/m^3	8-hours average	10 mg/m^3 , (9ppm)
		1 hour	10 mg/m^3	1-hours average	40 mg/m^3 , (35 ppm)

11.2.4.2 Noise Quality Standards

In pursuance of the statutory requirement under clause (c) of sub-section (1) of section (6) of the Pakistan Environmental Protection Act, 1997 (XXXIV of 1997), the Pakistan Environmental Protection Agency with prior approval of the Pakistan Environmental Protection Council, has published the NEQS for Noise (2010). These standards are established for the four different categories which include residential area, commercial area, industrial area and silent zone. These standards vary according to the day and night timing, day time hours are 6:00 am to 10:00 pm and night time hours are 10:00 PM TO 6:00 AM. USEPA standards and World Bank guidelines along with National Environmental Quality Standards for Noise effective from January, 2012 are used for bench marking purpose and given in Table 2.2.

Table 2.2: Noise Quality Standards

#	Category of Area	NEQS		WB guidelines		USEPA Standards	
		Day Time	Night Time	Day Time	Night Time	Indoor	Outdoor
1.	Residential Area	55	45	55	45	45	55
2.	Commercial Area	65	55	70	70	70	70
3.	Industrial Area	75	65	70	70	70	70
4.	Silence Zone	50	45	-	-	-	-

Baseline Noise levels Monitored Data of Lease Area

Reference:	PCM/2
Client:	M/s Karam Sons (Pvt) Ltd.
Date of Monitoring:	15-04-2025
Nature/source of sample(s):	Noise Level Coal Mining Area
Testing Specification	Noise Level Meter, Model OS-11

Reference Point # 1: Eastern Side of Lease Area

Date	Time	dB(A)										Leq
17-07-19	Day	51	51	51	52	52	52	52	52	53	53	51.8
17-07-19	Night	46	46	47	47	47	47	48	48	49	49	47.5

Reference Point # 2: Eastern Side of Lease Area

Date	Time	dB(A)										Leq
17-07-19	Day	51	51	51	52	52	52	52	52	53	53	51.8
17-07-19	Night	46	46	47	47	47	47	48	48	49	49	47.5

Reference Point # 3: Eastern Side of Lease Area

Date	Time	dB(A)										Leq
17-07-19	Day	47	47	47	48	48	48	49	49	49	49	48.1
17-07-19	Night	46	46	46	46	47	47	47	48	48	48	46.9

Reference Point # 4: Eastern Side of Lease Area

Date	Time	dB(A)										Leq
17-07-19	Day	47	47	47	48	48	48	49	49	49	49	48.1
17-07-19	Night	46	46	46	46	47	47	47	48	48	48	46.9

Reference Point # 5: Eastern Side of Lease Area

Date	Time	dB(A)										Leq
17-07-19	Day	47	47	47	48	48	48	49	49	49	49	48.1
17-07-19	Night	46	46	46	46	47	47	47	48	48	48	46.9

11.2.5 Drinking Water Quality Standards

In pursuance of the statutory requirement under clause (c) of sub-section (1) of section (6) of the Pakistan Environmental Protection Act, 1997 (XXXIV of 1997), the Pakistan Environmental Protection Agency with prior approval of the Pakistan Environmental Council, has published the National Standards for Drinking Water Quality (2010).

Table 2.3 presents the National Standards for drinking water quality. Drinking water quality guidelines issued by W H O and USEPA has also been included for benchmarking purposes.

Table 2.3: Drinking Water Quality Standards

#	Parameters	Concentration Standards		
		NEQS (mg/l)	WHO (mg/l)	USEPA (mg/l)
Chemical Parameters				
1.	Aluminum (Al)	≤ 0.2	0.2	0.05-0.02
2.	Ammonium (NH ₃)	=	1.5	NS
3.	Antimony (Sb)	≤ 0.005	0.005	0.006
4.	Arsenic (As)	≤ 0.05	0.01	0.05
5.	Barium (Ba)	0.7	0.7	2.0
6.	Boron (B)	0.3	0.3	NS
7.	Cadmium (Cd)	0.01	0.003	0.005
8.	Chloride (Cl)	<250	250	250
9.	Chromium (Cr)	≤ 0.05	0.05	0.1
10.	Copper (Cu)	2	1-2	1.0
11.	Cyanide (CN)	≤ 0.05	0.07	0.2
12.	Fluoride (F)	≤ 1.5	1.5	20.-4.0
13.	Iron (Fe)	-	0.3	0.3

14.	Lead (pb)	≤0.05	0.01	0.015
15.	Manganese (Mn)	≤0.5	0.1-0.5	0.05
16.	Mercury (Hg)	≤0.001	0.001	0.002
17.	Molybdenum, (Mo)	-	0.07	NS
18.	Nickel (Ni)	≤0.02	0.02	0.1
19.	Nitrate (NO ₃)	≤50	NS	10.0as N
20.	Nitrite (NO ₂)	≤3	NS	10.0 as N
21.	Selenium (Se)	0.01	0.01	0.05
22.	Silver (Ag)	-	NS	0.1
23.	Sodium (Na)	-	200	20
24.	Sulphate (So ₃)	-	250	250
25.	Residual Chlorine	0.2-0.5	-	-
26.	Zinc (Zn)	5.0	3.0	5.0
Physical Parameters				
27.	Color	≤ 15 TCU	15 cu	15 cu
28.	Taste	Non Objectionable/Acceptable	-	-
29.	Odour	Non Objectionable/Acceptable	NS	3 TON
30.	Turbidity	< 5 NTU	5 NTU	0.5-5.0 NTU
31.	Total hardness	<500 mg/l	-	-
32.	TDS	<1000	1000	500
33.	pH	6.5-8.5	6.5-8.5	6.5-8.5
Biological Parameters				
34.	E-coli	Must not be detectable in any 100 ml sample	0	0
35.	Total Coli forms	Must not be detectable in	0	0

		any 100 ml sample		
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11.2.6 Occupational Health

Construction and operational activities can affect the occupational health of the workers. Quantitative national standards with respect to these aspects are yet to be developed in Pakistan. However, guidance in quantitative terms can be obtained from the Labor Laws (Amended) Ordinance, 1972 and The Mines Act 1923.

11.2.7 Toxic or Hazardous Waste

Protection of the environment with regards to toxic and hazardous waste is covered by the Pakistan Penal Code (PPC), 1860. Environment Protection Department (EPD), Punjab, is mandated to monitor the transportation of hazardous materials within the provincial limits.

11.2.8 Preservation of Cultural Heritage

The Antiquities Act, 1975, administered by the Provincial Government, is aimed at safeguarding the preservation of cultural heritage. Destruction, damage or defacement of antiquities is an offence under the Act.

11.2.9 Administrative Framework

The planning and Development Division at the federal level and the Planning and Development Departments at the Provincial level are responsible for coordinating with respective EPA's.

11.2.9.1 Environmental Protection Agency, Punjab

Pakistan Environmental Protection Council is the apex inter-ministerial and multi-stakeholder decision-making body, which is headed by the Prime Minister, while Pakistan Environmental Protection Agency is meant for the enforcement of environmental laws in Pakistan. They have delegated powers to provincial environmental Protection agencies for review, approval and

monitoring of environmental examination/assessment projects. As regards the proposed Project, EPA Punjab will be responsible for reviewing the report, issuing No Objection Certificate (NOC) and overall/broad based monitoring of the proposed project activities.

11.2.9.2 Rules of Business for District Environment Office under Punjab LGO, 2001

National Reconstruction Bureau has formulated the following rules of business for district environment offices.

- To regulate motor vehicles subject to the provisions of the Pakistan Environmental Protection Act, 1997 (Amended, 2012) and the rules and regulations made there-under;
- To ensure, guide and assist the proponents of new projects in submission of Initial Environmental Examination (IEE)/ Environmental Impact Assessment (EIA) to Director General, EPA for approval.
- To ensure implementation of environmental protection and preservation measures in all development projects at the district level and to sensitize government agencies on environmental issues;
- To identify the needs for legislation in various sectors of the environmental matters; to provide information and guidance to the public on environment;
- To encourage the formation and working of non-governmental organizations, to prevent and combat pollution and promote sustainable development;

- To undertake regular monitoring of projects and to submit progress reports to Director General, EPA for publication in the Annual Report.

11.2.9.3 **Consolidated Mines Rules, 1952**

[Rules framed in exercise of the powers conferred by section 30 of the Mines Act 1923, as required by sub-section 31 (1) of the said Act.]

1. (a) These rules may be called the consolidated Mines Rules, 1952.
2. (b) They shall apply to all the Mines in all provinces and the capital of the federation. In these rules, unless there is anything repugnant in the subject or context:
 - (a) "Act" means the Mines Act, 1923 (IV of 1923).
 - (b) "Section" means a section of the Act.
 - (c) "Chief Inspector or Inspector of Mines" means Chief Inspector of Mines or Inspector of Mines appointed under the Act.
 - (d) "Form" means a form appended to these rules.

The Mines Act 1923

The Coal Mines Regulation 1926

The Coal Mines Pithead Bath Rules 1926

THE MINES ACT, 1923

CONTENT

CHAPTER I

PRELIMINARY

SECTIONS

1. Short title, extent and commencement
2. Omitted
3. Definitions

CHAPTER II

INSPECTORS

4. Chief Inspector and Inspectors
5. Functions of Inspectors
6. Powers to Inspectors of Mines
7. Powers of special officer to enter, measure, etc.
8. Facilities to be afforded to Inspectors
9. Secrecy of information obtained
- 9A. Secrecy of source of complaint

CHAPTER III

MINING BOARDS AND COMMITTEES

10. Mining Boards
11. Committees
12. Powers of Mining Boards
13. Recovery of expenses

CHAPTER IV

MINING OPERATIONS AND MANAGEMENT OF MINES

14. Notice to be given of mining operations
15. Managers
16. Duties and responsibilities of owners, agents and managers

CHAPTER V

PROVISION AS TO HEALTH AND SAFETY

17. Conservancy
- 17A. Canteens
- 17B. Shelters
18. Medical appliances
- 18A. First-aid rooms
19. Powers of Inspectors when causes of danger not expressly provided against exist or when employment of persons is dangerous
20. Notice to be given of accidents.
21. Power of Government to appoint court of inquiry in cases of accidents.
22. Publication of reports

CHAPTER VI

HOURS AND LIMITATION OF EMPLOYMENT

- 22A. Weekly day of rest
- 22B. Hours of work above ground
- 22C. Hours of work below ground
- 22D. Special provision for night relays
23. Prohibition of employment of certain persons
- 23A. Repealed
- 23B. Notices regarding hours of works
- 23C. Limitation of hours of work for female
24. Supervising staff
25. Exemption from provisions regarding employment
26. Children

- 26A Young persons not to be allowed underground without certificates of fitness
- 26B Limitation of working hours for young persons
- 27. Disputes as to age
- 28. Register of employees
- 28A Application of the Chapter
- 28B Annual leave with wages
- 28C Festival holidays
- 28D Casual leave and sick leave
- 28E Wages during leave or holiday periods
- 28G Power of Inspector to act for Workers

CHAPTER VII

REGULATIONS, RULES AND BYS LAWS

- 29. Power of appropriate Government to make regulations
- 30. Power of appropriate Government to make rules
- 30A Power of appropriate Government to require rescue stations to be established
- 31. Prior publication of regulations and rules
- 31A Power to make regulations without previous publication
- 32. Bye-laws
- 33. Posting up of extracts from Act, regulations, etc.

CHAPTER VIII

PENALTIES AND PROCEDURE

- 34. Obstruction
- 35. Falsification of records, etc.
- 36. Omission to furnish plans, etc.
- 37. Contravention of provisions regarding employment of labour
- 38. Notice of accidents
- 39. Disobedience of orders
- 40. Contravention of law with dangerous results
- 41. Prosecution of owner, agent or manager
- 42. Limitation of prosecutions
- 43. Cognizance of offences
- 44. Reference to Mining Board or Committee in lieu of prosecution in certain cases

CHAPTER IX

MISCELLANEOUS

- 45. Decision of question whether a mine is under this Act.
- 46. Power to exempt from operation of Act
- 47. Power to alter or rescind orders
- 48. Application of Act to Government mines
- 49. Saving
- 50. Repealed

SCHEDULE Repealed

ACT NO.IV OF 1923

23rd February 1923

An Act to amend and consolidate the law relating to the regulation and inspection of mines

WHEREAS it is expedient to amend and consolidate the law relating to the regulation and

inspection of mines; It is hereby enacted as follows.—

CHAPTER I

PRELIMINARY

1- Short title, extent and commencement.—

- (1) This Act may be called the Mines Act. 1923.
- (2) It extends to the whole of Pakistan
- (3) It shall come into force on the first day of July, 1924.

2. Omitted.—

- 3. Definitions.—** In this Act, unless there is anything repugnant in the subject or context.—

- (a) "agent" when used in relation to a mine, means any person appointed or acting as the representative of the owner in respect of the management of the mine or of any part thereof, and as such superior to a manager under this Act;
- (aa) "appropriate Government" means, in relation to mines of nuclear substances, mineral oil natural gas and liquids and substances declared by Federal Law to be dangerously inflammable, oilfields and gas fields), the Federal Government and, in relation to other mines the Provincial Government;
- (b) "Chief Inspector" means the Chief Inspector of Mines appointed under this Act;
- (c) "child" means a person who has not completed his fifteenth year;
- (cc) "day" means a period of twenty four hours beginning at midnight;
- (d) a person is said to be "employed" in a mine who works under appointment by or with the knowledge of the manager, whether for wages or not, in any mining operation, or in cleaning or oiling any part of any machinery used in or about the mine, or in any other kind of work whatsoever incidental to, or connected with, mining operations;
- (e) "Inspector" means an Inspector of Mines appointed under this Act, and includes a District Magistrate when exercising any power or performing any duty of an Inspector which he is empowered by this Act to exercise or perform;
- (f) "mine" means any excavation where any operation for the purpose of searching for or obtaining minerals has been or is being carried on, and includes all works, machinery, tramways and sidings, whether above or below ground, in or adjacent to or belonging to a mine;
- Provided that it shall not include any part of such premises on which a manufacturing process is being carried on unless such process is a process for coke making or the dressing of minerals;
- (g) "owner", when used in relation to a mine, means any person who is the immediate proprietor or lessee or occupier of the mine or of any part thereof, but does not include a person who merely receives a royalty, rent or fine from the mine, or is merely the proprietor of the mine subject to any lease, grant or license for the working thereof, or is merely the owner of the soil and not interested in the minerals of the mine; but any contractor for the working of a mine or any part thereof shall be subject to this Act in like manner as if he were an owner, but not so as to exempt the owner from any liability;
- (h) "prescribed" means prescribed by regulations, rules or bye-laws;
- (i) "qualified medical practitioner" means any person registered under any Act of the Central Legislature or any Provincial Legislature providing for the maintenance of a register of medical practitioners, and includes, in any area where no such last mentioned Act is in force, any person declared by the appropriate Government by notification in the official Gazette, to be a qualified medical practitioner for the purposes of this Act;
- (j) "regulations", "rules" and "bye-laws" means respectively regulations, rules and bye-laws made under this Act;
- (jj) where work of the same kind is carried out by two or more sets of workers working during different periods of the day, each of such sets is called a 'relay' and the period for which it works is called a 'shift';
- (k) "serious bodily injury" means any injury which involves, or in all probability will involve, the permanent loss of the use of, or permanent injury to, any part of the body or the permanent loss of or injury to the sight or hearing, or the fracture of any part of the body or the enforced absence of the injured person from work for a period exceeding twenty days; and
- (l) "week" means the period between midnight on Saturday night and midnight on the succeeding Saturday night.

CHAPTER II INSPECTORS

4- Chief Inspector and Inspectors.—

- (1) The appropriate Government may, by notification in the official Gazette, appoint a duly qualified person to be Chief Inspector of Mines for the whole of Pakistan or for

the Province, as the case may be, and duly qualified persons to be Inspectors of Mines subordinate to the Chief Inspector.

(2) No person shall be appointed to the Chief Inspector or an Inspector, or having been appointed shall continue to hold such office who is or becomes directly or indirectly interested in any mine or mining rights in Pakistan.

(3) The District Magistrate may exercise the powers and perform the duties of an Inspector subject to the general or special orders of the appropriate Government;

Provided that nothing in this sub-section shall be deemed to empower a District Magistrate to exercise any of the powers conferred by section 19 or section 32.

(4) The Chief Inspectors and every Inspector shall be deemed to be a public servant within the meaning of the Pakistan Penal Code.

5- Functions of Inspectors.—

(1) The Chief Inspector may, by order in writing, prohibit or restrict the exercise by any Inspector named, or any class of Inspectors specified, in the order of any power conferred on the Inspectors by this Act, and shall, subject as aforesaid, declare the local area or areas within which, or the group or class of mines with respect to which, Inspectors shall exercise their respective powers.

(2) The Inspector shall give information to owners, agents and managers of mines, situate within the local area or areas or belonging to the group or class of mines, in respect of which he exercises powers under sub-section (1) as to all regulation and rules which concern them respectively and as to the places where copies of such regulations and rules may be obtained.

6. Powers of Inspectors of Mines.— The Chief Inspector and any Inspector may.—

(a) make such examination and inquiry as he thinks fit in order to ascertain whether the provisions of this Act and of the regulation, rules and bye-laws and of any orders made there under are observed in the case of any mine;

(b) with such assistance (if any) as he thinks fit, enter, inspect and examine any mine or any part thereof

(c) examine into, and make inquiry respecting, the state and condition of any mine or any part thereof, the ventilation of the mine, the sufficiency of the bye-laws for the time being in force relating to the mine, and all matters and things connected with or relating to the safety health and welfare of the persons employed in the mine.

(d) take, whether on the precincts of the mine or elsewhere, statement of any person which he may consider necessary for carrying out the purposes of this Act;

Provided that no one shall be required under this section to answer or give any evidence tending to criminate himself;

(e) require the production of any books, registers or other documents, the keeping of which is prescribed, in order to see that they are in conformity with the provisions of this Act and rules and regulations framed there under and take into his custody, or make copies of, or extracts from any such book register or other document;

(f) after informing the manager of a mine or his representative, take or remove, for the purpose of analysis samples of materials and substances used or handled in the mine;

7. Powers of special officer to enter, measure etc.— Any person in the service of the State duly authorised, by a special order in writing of the Chief Inspector or of an Inspector in this behalf may, for the purpose of surveying, leveling or measuring in any mine, after giving not less than three days' notice to the manager of such mine, enter the mine and may survey, level or measure the mine or any part thereof at any reasonable time by day or night, but not so as unreasonably to impede or obstruct the working of the mine; Provided that no such notice need be given if, for reasons to be recorded, the Chief Inspector or Inspector is of opinion that there is an emergency.

8. Facilities to be afforded to inspectors.— Every owner, agent and manager of a mine shall afford the Chief Inspector and every Inspector and every person authorised under section 7 all reasonable facilities for making any entry; inspector, survey, measurement, examination or inquiry under this Act.

9- Secrecy of Information obtained.—

(1) All copies of and extracts from, registers or other records appertaining to any mine, and all other information acquired by the Chief Inspector or an Inspector or by any one assisting him, in the course of the inspection of any mine under this Act or acquired by any person authorised under section 7 in the exercise of his duties there under, shall be regarded as confidential and shall not be disclosed to any person other than a Magistrate or a Commissioner for Workmen's Compensation appointed under this Workmen's Compensation Act, 1923, or an official superior or the owner, agent or manager of the mine concerned unless the Chief Inspector or the Inspector considers disclosure necessary to ensure the safety of any persons.

(2) If the Chief Inspector, or an Inspector or any other person referred to in sub-section (1) disclose contrary to the provisions of sub-section (1), any such information as aforesaid without the consent of the appropriate Government, he shall be guilty of a breach of official trust, and shall be punishable with imprisonment for a term which may extend to one year, or with fine, or with both.

(3) No court shall proceed to the trial of any offence under this section 35 except with the previous sanction of the 36 appropriate Government.

9A- Secrecy of source of complaint.— The Chief Inspector or an Inspector shall treat as

absolutely confidential the source of any complaint bringing to his notice a defect or breach of any provision of this Act or any rules or regulations made there under and shall not give any intimation to the owner of the mine or his representative that a visit of inspection was made in consequence of the receipt of such a complaint.

CHAPTER III

MINING BOARDS AND COMMITTEE

10- Mining Boards .—

(1) The appropriate Government may constitute for any part of Pakistan or as the case may be of the Province or for any group or class of mines, a Mining Board consisting of.—

(a) a person in the service of the State, not being the Chief Inspector or an Inspector, nominated by the appropriate Government to act as Chairman;

(b) the Chief Inspector or an Inspector;

(c) a person not being the Chief Inspector or an Inspector, nominated by the appropriate Government;

(d) two persons nominated by owners of mines or their representatives in such manner as may be prescribed;

(e) two persons to represent the interest of miners, who shall be nominated in accordance with the following provisions.—

(i) if there are one or more registered trade unions having in the aggregate as members not less than one quarter of the miners, the said persons shall be nominated by such trade union or trade unions in such manner as may be prescribed;

(ii) if sub-clause (i) is not applicable and there are one or more registered trade unions having in the aggregate as members not less than 1,000 miners, one of the said persons shall be nominated by such trade union or trade unions in such manner as may be prescribed and the other by the 45 appropriate Government;

(iii) if neither sub-clause (i) nor sub-clause (ii) is applicable, the said persons shall be nominated by the appropriate Government.

Explanation.—In this clause 'minor' means a person employed otherwise than in a position of supervision or management in any of the mines for which the Mining Board is constituted.

(2) The chairman shall appoint a person to act as secretary to the Board.

(3) The appropriate Government may give directions as to the payment of travelling expenses incurred by the secretary or any member of any such Mining Board in the performance of his duty as such secretary or member.

- (c) short-firing as detailed in clause (a) of regulation 40-A,
- (d) mine gases and ventilation,
- (e) the provision of the regulations, rules and bye-laws under the Act relating to the safety of persons employed in mines.
- (f) in the case of candidates for the endorsement referred to in the proviso to sub regulation
- (1) of regulation 71, the methods of testing for and detecting the presence of inflammable gas.

¹⁷[(g) Strata control in open pit mining.]

40-A. Examinations for short-firers' certificates shall be conducted orally in English or in the vernacular language of the district in which the examination is held and shall be designed to test the candidates knowledge of the following subjects, namely:-

- (a) the charging and firing of shorts of gunpowder and high explosives;
- (b) the provisions of the regulations, rules and bye-laws under the Act relating to the handling and use of explosives; and
- (c) the examination of a working place after shot-firing

41. Applications for admission to an examination for first and second class managers' or surveyors' certificates shall be made to the Chief Inspector not less than one month prior to the date fixed for the examination. Every such application shall be submitted on a form which shall be supplied free of charge by the Chief Inspector on application made in this behalf.

42. ¹⁸[(1) Applications for admission to an examination shall be chargeable with fees which shall be paid in the manner prescribed in regulation 153 according to the following scale, namely:-

- (a) in the case of an examination for a first class manager's certificate Rs. 40
- (b) In the case of an examination for a second class manager's certificate Rs. 25
- (c) In the case of an examination for a surveyor's certificate Rs. 25

¹⁶ Added vide Noti. No. DEV-II/10-4/98, dt; Jan 11, 1999.

¹⁷ Inserted vide Noti. No. DEV-II/10-4/98, dt; Jan 11, 1999.

¹⁸ Subs. for original sub-regulation (1) and (2) vide Noti. No. L. R. 7(8)48, 13th April, 1953 Gaz. of Pak. Pt. I, 1953, p.100.

(d) In the case of an examination for a sirdar's certificate Rs. 10

(e) In the case of an examination for a short-firer's certificate Rs. 2

(2) The amount of any fee referred to in sub-regulation (1) less than following amounts shall be returnable to the person by whom it has been paid if the application of such person for admission to the examination rejected:-

- (a) One rupee in the case of the fee paid for admission to an examination for a shot firer's certificate.
- (b) two rupees in the case of the fee paid for admission to an examination for Sirdar's Certificate.
- (c) Ten rupees in any other case.]

(3) The Chief Inspector may permit the refund.

(a) of the amount of any fee paid under sub-regulation (1) where the candidate has died before the examination or where the fee has been erroneously paid, and

(b) of any amount paid in excess of that specified in sub-regulation. (1).

¹⁹[43. (1) (a) The Board of Examiners may grant to any person holding a manager's certificate, a surveyor's certificate or a certificate equivalent to a sirdar's certificate, granted under any Act for

the regulation of mines for the time being in any other country, a certificate of a similar class under these regulations, and may grant to any person holding a certificate of proficiency in mining and

Surveying, a manager's or surveyor's certificate:-

Provided that in each of the aforesaid cases, the person satisfies the Board of Examiners with documentary evidences that he:

i. possesses the requisite knowledge and experience;

ii. has undergone for a period of not less than six months a course of practical training in the manner prescribed by the Chief Inspector in any mine in Pakistan

iii. has also passed, in case of an applicant for a manager's certificate, such examination in mining legislation and mine management as the Board may prescribe;

iv. Produces and certificate of good character from his previous employer and also from the agent or the manager of the Pakistan mine at which he took his practical training as prescribed by the Chief Inspector for the purpose,

(b) If a person intends to apply for a certificate referred to in sub-regulation (a) he shall before commencement of his practical training in Pakistan, submit an application in the form set out in Schedule III to these Regulations to the Chief Inspector, who may before according

approval, impose such conditions as he may consider necessary.

(2) The following fees shall be chargeable in respect of application for certificates to be issued under this regulation:-

(a) in the case of manager's and surveyor's certificate Rs. 10

(b) in the case of a sirdar's certificate Rs. 5

The fees shall be paid in the manner prescribed in regulation 153.

44. If any person proved to the satisfaction of the Board of Examiners that he has without any fault on his part lost or been deprived of a certificate granted to him under these regulations, the Board may, upon such terms and conditions as it thinks fit, cause a copy of the certificate to be delivered to him.

The word "Duplicate" shall be stamped across every such copy, and the following fees shall be payable in the manner prescribed in regulation 153:-

(a) in the case of a manager's or surveyor's certificate Rs. 4

(b) in the case of a sirdar's certificate Rs. 2

(c) in the case of a short-firer's certificate Rs. 1]

¹⁹ Regulation 43 and 44 subs for original vide Noti. No. L. R. 7(8)48, 13th April, 1953 Gaz. of Pak. Pt. I, 1953, p. 100

45. The Chief Inspector shall issue to every person to whom the Board of Examiners grants a sirdar's certificate or shot-firer's certificate of metal check marked with the registered number of the certificate.

46. (1) The person to whom such metal check is issued shall, so long as the corresponding certificate remains in force, retain such check in his immediate possession, and shall not transfer it or dispose of it in any way. In the event of

the corresponding certificate being cancelled, the check shall be returned to the Chief Inspector.

(2) No person employed in a mine other than the holder of the corresponding certificate for the time being in force shall be in possession of a metal check issued under regulation 45.

(3) If any person proves to the satisfaction of the Chief Inspector that he has without any fault on his part lost or been deprived of the metal check issued to him under regulation 45, the Chief Inspector may, upon such terms and conditions as he may determine, cause a second metal check bearing the registered number of his certificate to be delivered to him. The letter "D" shall be stamped on the reverse of every such check and a fee of twenty four paise shall be payable in advance to the Chief Inspector in respect thereof.

47. The holder of a sirdar's certificate or shot-firer's certificate shall deliver such certificate to the owner, agent or manager of any mine in which he is for the time being employed" and such owner, agent or manager shall in exchange for the certificate deliver a receipt for the same to the holder, and shall retain the certificate so long as the holder thereof is employed in such mine, and shall return it to the holder on his ceasing to be so employed.

48. Where it appears to the appropriate Government that any person holding a manager's certificate or a surveyors certificate has been guilty of misconduct or in competency in the discharge of his duties or has been convicted of any offence made punishable by the Act with fine which may extend to Rs. 500 or more, or with imprisonment, the appropriate Government may cause an inquiry into the conduct of such person to be made; and with respect such enquiry the following provisions shall have effect, namely:-

(a) The inquiry shall be public, and shall be held at such place as the appropriate Government may appoint, and by such person or number of persons as it may direct (hereinafter in this regulation referred to as the Court), either alone or with the assistance of any assessor or assessors appointed by the appropriate Government such assessors shall be practical mining engineers or persons with a knowledge of the practical working of mines. The functions of the assessors shall be purely advisory and they shall not be regarded as members of the Court.

(b) The appropriate Government shall before the commencement of the inquiry, furnish the person whose conduct is under inquiry with a statement of the case on which the inquiry is instituted.

(c) The appropriate Government may appoint any person to undertake the management of the case.

(d) The person whose conduct is under inquiry may attend the inquiry, and may either conduct his case personally or be represented by any other person approved by the Court.

(e) If a majority of the persons constituting the Court think fit, the persons whose conduct is under inquiry may be required to deliver up his certificate at any time before or during the inquiry, and such person shall be bound to

comply with such requisition, unless he shows sufficient cause to the contrary.

(f) The Court shall, on the conclusion of the inquiry of the inquiry, sent to the appropriate Government a report containing a full statement of the case together with its opinion thereon and such account of or extracts from the evidence as it may think fit, and if it considers that the certificate in question should be cancelled or suspended it shall add a recommendation of that effect. In the event of disagreement between the members composing any Court the dissentient or dissentients from the opinion of the majority may forward a separate report to the appropriate Government with a statement of their recommendations.

(g) After considering the report or reports and the recommendations (if any) submitted under clause (f) the appropriate Government may cancel or suspend the certificate, and, if it does so, the fact of such cancellation or suspension shall, if the certificate is produced be endorsed upon it and, if it is not produced or at any time a duplicate has been granted under regulation 44, be notified in the official Gazette.

49. If, in the opinion of an Inspector, a person to whom a sirdar's certificate or shot-firer's certificate has been granted is guilty of misconduct or in competence in the discharge of his duties, the Inspector may suspend the certificate. Every such suspension shall be reported forthwith to the Board of Examiners and the Board shall thereupon, after such inquiry as it thinks fit either remove or extend the suspension or cancel the certificate, and the decision of the Board shall be final.

50. (1) A permit (in these regulations referred to as a manager's permit) may be granted by the Chief Inspector at his discretion to any person authorizing such person to act as the manager of any specified mine the average monthly output of which does not exceed 600 tons.

(2) All such permits shall be signed by the Chief Inspector and shall be valid for such period not exceeding one year as he may specify therein.

20[(3) A fee of ten rupees shall be paid by the owner or agent of the mine in the manner prescribed in regulation 153 in respect of an application for the grant of manager's permit.]

(4) The Chief Inspector may at any time renew any manager's permit for a further period no exceeding one year, notwithstanding that such permit has already been so renewed. No fee shall be chargeable in respect of any such renewal.

(5) A manager's permit may be cancelled at any time by the Chief Inspector by order in writing without assigning any reason for such cancellation and such order shall be final.

(6) Notwithstanding anything hereinbefore contained no manager's permit shall be granted or renewed to any person who is not the holder of a sirdar's certificate.

51. A register showing the names and addresses of all holders of certificates or permits granted under these regulation and all cancellations of such certificates or permits shall be maintained in the office of the Chief Inspector.

52. Any certificate, permit or authorization specified in the first column of the table below which has been issued under the Mines Act, 1923 or under any rule made thereunder and is valid at commencement of these regulations shall for the purposes of the Act and these regulations be deemed respectively to be equivalent of the certificate, permit or authorization specified in the corresponding entry in the second column of the table and to have been issued under these regulations.

Manager's certificate of competency, First Class

Manager's Service Certificate of competency, First Class

Manager's Certificate,

First Class

Manager's certificate of competency, Second Class

Manager's service certificate of competency, Second class

Manager's certificate,

Second class

Sirdar's certificate of competency Sirdar's certificate.

Permit to manage a mine Manager's permit.

Authorization to act as manager of a mine Authorization to act as
Manager of a mine

CHAPTER V

SHAFTS AND OUTLETS

53. (1) No person shall be employed, or be permitted to enter or remain for purposes of employment, in any mine unless the mine is provided with at least two shafts or outlets--

(a) with which every seam for the time being at work has a communication so as to afford separate means of ingress and egress to the persons employed in the seam; and

(b) which are under the sole control of the manager of the mine.

²¹[(2)-A. Proper arrangements shall be made for persons to descend to and ascend from the mine at each of shafts, outlets, or steep traveling roads. If the slope of a coal seam varies

²⁰ Subs. for original sub-regulation (3) vide Noti. No. L. R. 7(8)48, 13th April, 1953 Gaz. of Pak. Pt. I, 1953, p. 100.

²¹ Sub-regulation 2-A to K subs for original sub-regulation (2) vide Noti. No. LR-7(8)48, 13th April, 1953, Gaz of Pak Pt I, 1953, p. 100.

from 1 vertical to 4 horizontal, to one vertical to one horizontal, reasonably level steps shall be provided in all the dip traveling roads leading to each outlet. Such steps shall comply with the following requirements:

(a) Its breadth shall not be less than two feet.

(b) The vertical height of every step shall not exceed 8 inches and dimensions of every step measured horizontally from the edge to the back shall not be less than eight inches.

- (c) All steps shall be kept clean and good repair.
- (d) A rigid hand-bar shall be fixed in a position where it can be easily reached by all persons traveling on the steps to provide them with a strong holdfast.
- B. Where the slope of a seam is more than one vertical to one horizontal, the traveling roads shall be provided with ladders and platforms as means of descending to, and ascending from the mine. The platforms shall be fixed at intervals not exceeding 40 feet, ladders shall be placed so as to cover the openings in the platforms. Provided that in cases where timber and supplies are handled, a portion of this opening may be to one side of the ladder and in the opposite corner of the platform. Except in respect of the lowest 30 feet of a traveling road, the ladders shall be fixed at an inclination of not less than one foot horizontal for every ten feet vertical, provided that where exceptional circumstances require they may with the consent of an inspector be fixed at a steeper inclination. If apparatus is necessary it shall be kept on the works belonging to the mine and shall be constantly available for use.
- C. All platforms shall be securely fenced.
- D. All ladders and platforms shall be securely fastened to the sides of timbering of the shafts.
- E. All ladders shall project at least three feet above every platform and shaft and incline tops, or strong holdfast shall be provided at these places in convenient positions.
- F. A ladder way which is a compartment of a shaft used about for other purposes shall be closed off from compartment to such extent as will prevent injury to workmen passing up and down the ladder way.
- G. Every ladder way opening in any traveling road or places where men are stationed or pass shall be provided with door or with a substantial fence.
- H. Not more than one person shall carry or be permitted to carry any drill tool or any loose material or a ladder way in a vertical or steeply inclined shaft leading to an outlet except in so far as may be necessary in executing repairs.
- I. all ladders and platforms shall be made of best material and kept in good condition. The breaking load of the ladders and platforms shall at no time be less than three times their working load.
- J. All ladders and platforms used by work-persons in a mine shall be examined not more than two hours before the commencement of work in a shift by a competent person appointed by the manager in writing for this purpose. The results of every such inspection shall be recorded in a book kept at the mine for this purpose. The report shall be made and signed by the person who made the inspection and shall state the date and time of the inspection and date and time when the report was written.
- K. whenever the circumstances at any mine or part of a mine are such as to render the provision of this regulation not reasonably applicable to such mine

or part of such mine the Chief Inspector may, at his discretion grant exemption from the provision under such conditions as he may think fit.]

(3) Such shafts or outlets shall be not less than 45 feet distant from one another at any point, and each shall be connected with the other by means of a communication not less than 4 feet height and 4 feet wide.

(4) Whenever communication between the two outlets which are required to be maintained under sub-regulation (1) has been blocked, or fenced off under regulation 140 (1), only such persons as are necessary to clear the obstruction, or to repair the dangerous part of the communication or to make a new second outlet, shall be employed in the mine until such time as communication has been re-established or a new second outlet has been provided.

(5) The foregoing provisions of this regulation with respect to shafts and outlets shall not apply--

i) while a shaft is being sunk or an outlet is being made.

ii) to any working for the purpose of making communication between two or more shafts or outlets.

iii) to any working for the sole purpose of searching for or proving minerals, so long as not more than 40 persons are employed underground at any one time in the whole of the different seams in connection with a single shaft or outlet: Provided that nothing in this sub-regulation shall be deemed to authorize the driving of ordinary galleries for development before a second outlet has been made in accordance with the said provisions.

(6) The Chief Inspector may exempt from the operation of this regulation subject to such conditions as he may impose, any mine in the case of which special difficulties exist which in his opinion make compliance with the provisions of this regulation not reasonably practicable.

(7) So much of this regulation as requires two shafts or outlets to be separated by a distance of not less than 45 feet shall not apply to any shafts the sinking of which was commenced before the 10th day of March, 1904.

54. Where the natural strata are not safe, every working or pumping shafts and every shaft in course of being sunk, shall be securely cased, lined or otherwise made secure.

55. Every part of a mine shall, where practicable, be provided with at least two ways affording means of egress to the surface.

56. Where it is necessary for persons to pass from one side of a winding shaft to other, proper provision shall be made enabling them to do so without crossing the shaft.

57. A competent person or persons, of not less than 21 years of age, appointed by the manager for the purpose shall, once at least in every week, examine the state of the shaft by which persons ascend or descend, and shall without delay write or cause to be written a full and accurate report of the result of such examination. Every such report shall be recorded in a paged book to be kept at the mine for the purpose, and shall be signed and dated by the person who made the examination.

87-D. (1) No person shall light a fire or deposit ashes or heated material in any local quarry, or on any exposed outcrop of coal, or on any ground damaged by the extraction of coal in which open fissures or cavities exist.

(2) No person shall light a fire or permit a fire to be lighted in any underground part of a mine:

Provided that nothing in this sub-regulation shall apply to the use in a mine to which regulation 123 does not apply, of blow lamps or electric repairing apparatus is permitted by special written order granted by the manager of the mine. The order shall specify the person who shall be in charge of the blow lamp or apparatus and shall require such person to bring it back to the surface when no longer required.

(3) No person shall light a fire or permit a fire to be lighted within a distance of 40 feet from the perimeter of any shaft except in accordance with a written order granted by the manager of the mine and only for a special purpose specified in such order: Provided that this sub-regulation shall not apply to boilers other than vertical boilers.

(4) All such orders shall be recorded in a paged book kept in the office of the mine.

(5) No person shall ignite a 'feeder' or an accumulation of

87-E. No excavation shall be done in any part of a seam lying under any part of another seam which is on fire or is believed to be on fire or which is connected by a goaf or by broken strata to any fire except by a method which will maintain the strata between the seam in situ and intact.

87-F. (1) On the appearance in any part of a mine of smoke or other sign indicating that a fire has or may have broken out all workmen other than those whose presence in the mine is deemed necessary for dealing with the emergency shall be immediately withdrawn from the mine. No workmen other than men required for dealing with or damming off the fire, shall be re-admitted until either the fire has been extinguished or the part in which it exists has been effectively dammed off and an examination has been made by the manager and the competent person appointed under regulation 72 and the mine has been reported to be safe. Every such report shall be recorded without delay in a paged book, which shall be kept at the mine for the purpose and shall be dated and signed by the manager and competent person who made the inspection: Provided that, in mechanically ventilated mine in which the use of safety lamps is not required other than for inspection purposes, this regulation shall apply only to the ventilating district or districts, that may be affected.

(2) The examination required by sub-regulation (1) shall be made within an approved locked flame safety lamp and a cage containing small birds or other means of detecting carbon monoxide gas approved by the Chief Inspector. No additional light shall be used other than approved electric torch or lamp.

87-G. (1) Approved locked safety lamps or electric torches shall be exclusively used in the work dealing with or damming off an underground fire: Provided that where in the opinion of the manager, it is necessary to take immediate steps to deal with an outbreak of fire, the provisions of this sub-

regulation shall be deemed to have been complied with if, the workman engaged in dealing with the fire are provided with approved safety lamps or electric torches as quickly as is reasonably practicable.

(2) During the work of dealing with or damming off an underground fire a cage or cages containing small birds or other means of detecting carbon monoxide gas approved by the Chief Inspector shall be kept at all places in which persons may be in danger from noxious gases.

87-H. Approved locked safety lamps or electric torches shall be exclusively used in any ventilating district of a mine in which there is an underground fire whether such fire is sealed off by stopping or not:

Provided that the Chief Inspector may in the case of any mine, grant exemption from this regulation under such conditions as he may impose, if, in his opinion, the use of approved safety lamps or electric torches in such mine is not necessary.

87-I. (1) In any ventilating district of a mine which is not naturally wet throughout and--

(i) in which there is underground fire, whether sealed off or not; or

(ii) in which the extraction of pillars is in hand or is about to commence;

the following precautions with respect to danger from dry coal dust shall be taken:-

(a) All haulage and tramming roads shall be systematically kept clear of accumulations of dry coal dust.

(b) All such roads shall be systematically treated with water or incombustible dust in such a manner as to prevent an explosion from being initiated or propagated by coal dust. If incombustible dust is used for the purpose, it shall be of a kind which is not likely to be injurious to the health of workmen.

³⁰[(2) The precaution laid down in sub-regulation (1) shall also be observed at all places within 400 feet of an area-

(i) which has been or is being sealed off on account of fire; or

(ii) in which coal is extracted or loaded from working faces.]

(3) The Chief inspector may, by order in writing, grant, subject to such conditions as he may impose, exemption from the provisions of sub-regulation (1) or sub-regulation (2) to any mine or part of a mine on the ground that, on account of the special character of the mine or part, the observance of the precautions laid down therein is not necessary.

87-J. In any working mine in which a fire is known or is believed to exist--

(a) adequate precautions shall be taken to prevent the passage of air from the mine through any goaf or through broken strata connected with the fire; and

(b) no work, other than work required by clause (a) of this regulation, shall be done in any part of the mine which is not effectively sealed off from any such goaf or broken strata.

CHAPTER VIII

HAULAGE

88. (1) Every haulage road on which the haulage is worked by gravity or mechanical power shall be provided with sufficient manholes for refuge, which shall in no case be placed at intervals more than 60 feet and which shall not

be less than 5 feet in height, 3 feet in width, and 4 feet in depth. Where the inclination is more than 1 in 6 the manholes shall be at intervals of not more than thirty feet:

Provided that in any case in which an inspector considers that there are difficulties which make the provision of a manhole at the above specified intervals or of the above specified dimension not reasonably practicable, he may by order in writing, specify a greater interval or reduced dimensions.

(2) Every manhole shall be kept clean and whitewashed both inside and for a distance of not less than one foot around the aperture and the entrance of such manhole shall be kept unobstructed.

89. Every haulage road exceeding 100 feet in length on which the haulage is worked by gravity or mechanical power, shall be provided with proper means of communicating distinct and definite signals from all regular stopping places to the place or places at which the persons who control the haulage machinery are stationed: Provided that the Chief Inspector may, at his discretion and by order in writing, require that there shaft be means of communicating signals in the reverse direction also. The first four or principals signals shall be--

Three raps START when at rest

One rap STOP when in motion

Two raps LOWER SLOWLY

or

HAUL IN SLOWLY

Four rapsRAISE SLOWLY

or

HAUL OUT SLOWLY

Any other signals shall be in addition to and shall not interfere with the foregoing:

³⁰ Subs for original sub-regulation (2) vide Noti. No. L.R. 7(8)48, 13th April, 1953, Gaz of Pak Pt I, 1953, p 100.

Provided that the Chief Inspector by order in writing may, at his discretion permit the use of a different code of haulage signals.

90. A printed copy of the code of haulage signals shaft be kept posted at the brake wheel or haulage engine, and at both ends of the haulage road and at every signaling station.

91. The signal handle or attachment at every stopping place on any haulage or self-acting incline shall be placed in such a position as will enable the persons operating the signals to be safe in the case of a runaway tub or tubs on the incline.

92. At the top of every incline on which the haulage, not being endless chain haulage, is worked by mechanical power or gravity there shall be stop-blocks or other similar contrivances to prevent tubs from running away. Additional stop-blocks or runaway switches, or some other appliance for arresting the descent of tubs in the event of a run-way, shall be fixed below the first stop-blocks at a greater distance than the length of a train of tubs. There shall also be provided and attached behind the ascending tub or tubs a back-stay, drag or other suitable contrivance for preventing the tub or tubs from running back.

93. Where a main haulage road extends to a distance of more than 3,000 feet from the shaft or the entrance to the mine, efficient means of telephonic communication shall be provided and maintained between a suitable station near the end of every such haulage road, the pit-bottom and the surface, or between a suitable station where the end of every main haulage road and the entrance to the mine:

Provided that the Chief Inspector may by order in writing require the provision of means of telephonic communication where in any mine main haulage extends to a distance of less than 3,000 feet from the shaft or the entrance of the mine, where travelling is unduly arduous:

Provided further that the Chief Inspector may by order in writing permit the use of other suitable means of communication in cases in which the conditions in the mine are not suitable for telephones.

94. Where haulage is effected by means of an endless rope or chain, automatic catches shall be fixed at such points on the haulage road as may be necessary to prevent tubs from running away.

95. (1) No person shall permit a tub or tubs to run uncontrolled except with the consent of the manager:

Provided that the Chief Inspector may, by order in writing prohibit the uncontrolled movement of tubs at any place where, in his opinion, there would be danger of injury to persons.

(2) No person shall ride on any tub, truck or wagon, either underground or above ground except with the written permission of manager.

96. Where the Chief Inspector so requires, travelling roads, separate from the haulage roads, shall be provided to and from the working places.

96-A. In every underground part of mine-

(1) main haulage and travelling roads shall, as far as practicable, be kept free from accumulations of fine coal dust;

(2) all coal tubs shall be so constructed and maintained as to prevent as far as practicable, coal dust escaping through their sides, ends or floors.

CHAPTER IX

EXPLOSIVES

97. No owner, agent or manager shall store, or knowingly allow any other person to store, within the premises of the mine any explosives otherwise than in accordance with provisions of rules made under the Explosives Act, 1884.

98. No explosive shall be stored in the workings of mine or taken into or kept in dwelling house.

99. No explosive shall be used in a mine except that provided by the manager.

100. The manager shall appoint in writing a competent person or persons to be in charge of every magazine for the storage of explosives, and no person shall be in charge of a magazine without such written authority.

101. Explosives shall be issued only to competent persons appointed in writing by the manager, and no unauthorized person shall have explosives in his possession.

101-A. No liquid oxygen explosive shall be used in any underground part of a mine.

102. No gunpowder or any other kind of explosive, except fuses and detonators, shall be issued for use in blasting operations in a mine or used in a mine except in the form of cartridges.

103. Explosives unused and left over at the end of a shift shall be returned to the magazine immediately after the end of the shift. Such returned explosives shall be re-issued before fresh stock is used.

104. The person in charge of a magazine shall keep a correct record of the quantity of gunpowder and of the numbers of cartridges or other kinds of explosives and of detonators issued from the magazine to each authorized person, and similar record of explosives, returned to the magazine.

105. The preparation of cartridges from loose gunpowder, the drying of gunpowder, and the reconstruction of damp cartridges shall be carried out only by a competent person or persons appointed in writing by the manager for the purpose, and only in accordance with the conditions laid down in rules made under the Explosives Act, 1884, and in a place approved by the licensing authority.

106. No explosive shall be taken into a mine except in *securely locked* cases canisters, containing not more than ³¹[fifty pounds] each, and no person shall have in use or keep for use, at one time in any one place, more than one such case or canister. The place, in the mine at which any such case or canister is in use, or is kept for use, shall, unless solid ground directly intervenes, not be less than 30 feet from a place at which any other such case or canister is in use or kept for use:

Provided that the Chief Inspector may, in special cases by order in writing, permit, subject to such limitations as he may prescribe, the use at one time in one place of more than one such case or canister.

107. The amount of every charge of explosive shall not be disproportionate to the work to be done. The charge shall be placed in a properly drilled and placed shot hole and shall have sufficient stemming. A sufficient supply of suitable non-inflammable stemming material shall be provided at places convenient to the shot-fires.

108. (1) No shot shall be stemmed or fired except by or under the personal supervision of a competent person appointed by the manager by order in writing to be a shot-firer.

(2) In any mine in which more than ³²[20 persons] are employed underground at any one time, no person shall be so appointed or shall perform the duties of shot-firer who is responsible for making inspection under sub-regulation (2) of regulation 70.

(3) With effect from the 1st day of April, 1940, no person shall be appointed as a shot-firer under sub-regulation (1) unless he holds either a shot-firer's

certificate or a sirdar's certificate or a manager's certificate granted under these regulations.

109. Every shot-firer shall before a shot is fired by him or under his supervision see that all persons in the vicinity have taken proper shelter at a safe distance; he shall also take suitable steps to prevent any person approaching the shot and shall himself take proper shelter.

110. When two working places have approached to within 10 feet of one another, no blasting shall be done in any one of such workings unless the workmen have been withdrawn from the other working, and the same has been fenced.

Explanation.-- For the purposes of this regulation, any place to which workmen have lawful access shall be deemed to be a working place.

111. In the process of charging or stemming for blasting, no person shall use or have in his possession any iron or steel picker, scraper, tamping rod or stemmer and only suitable noninflammable substance shall be used for tamping or stemming.

112. (1) When a hole has been charged, the explosive shall not be unarmed³³[except in a manner and by a machine approved by Chief Inspector].

(2) No hole shall be bored at a distance of less than 12 inches from any hole where a charge has misfired nor shall a second charge be placed in any such hole.

³¹ Substituted vide Noti. No. DEV-II/10-4/98, dt; Jan 11, 1999.

³² Substituted vide Noti. No. DEV-II/10-4/98, dt; Jan 11, 1999.

³³ Added vide Noti. No. DEV-II/10-4/98, dt; Jan 11, 1999.

113. Detonators shall be kept in a securely locked box separate from any other explosive and no detonator shall be inserted into the priming cartridge until immediately before it is to be used: Provided that in the case of a wet working, priming cartridge may be prepared at the nearest convenient dry place adjacent to the working.

114. No explosive shall be forcibly pressed into a hole of insufficient size.

115. (1) In any place in a mine in which the use of a locked safety lamp is for the time being required by or in pursuance of these regulations--

(a) no shot shall be stemmed or fired by any person who does not hold a sirdar's certificate endorsed for gas testing;

(b) no shot shall be fired until the shot-firer has examined both the place where the shot is to be fired and all accessible places within a radius of 60 feet for the presence of inflammable gas and has found such places free from gas;

(c) no shot of a Permitted Explosive shall be fired except by means of a shot-firing apparatus of a type approved by the Chief Inspector and subject to such conditions as he may time to time lay down by notification in the Official Gazette:

Provided that the Chief Inspector may, in special cases, by order in writing, permit, subject to such conditions as he may specify, the use of any other shot-firing apparatus.

(2) (i) Every approved shot-firing apparatus in use in a mine shall, once at least in every three months, be cleaned and thoroughly overhauled by a competent person appointed in writing by the manager.

(ii) No person shall use or allow to be used any approved apparatus which has become unsafe or defective.

(3) No shot shall be fired at any place underground in a mine unless the place itself and all accessible places within a distance of 60 feet--

(a) are naturally wet, or

(b) have been drenched with water to such extent that there will be no danger of dry coal-dust being raised into the air by the shot, or

(c) have been thoroughly treated with incombustible dust.

116. No explosive other than a Permitted Explosive shall be used--

(a) in any mine in which inflammable gas has within the previous twelve months been reported to be present or in which safety lamps are required, by or in pursuance of these regulations, to be used for any purpose other than inspections; and

(b) in any other mine in any main haulage road or main intake or main return airway or any place immediately contiguous to such road, intake, airway or place, unless such road, intake, airway or place is naturally wet throughout.

Provided that in the case of any mine or any part of a mine an exemption may be given by the Chief Inspector, subject to such conditions as he may impose, on the ground that on account

of the special character of the mine, the prohibition of the use of explosives other than Permitted Explosives is not necessary.

116-A. In any mine in which the use of Permitted Explosives is required by these regulations or by any bye-law or order made under the Act:--

(a) where more shots than one are charged for firing, the shots shall be fired simultaneously;

(b) the aggregate charge in any number of shots fired simultaneously in coal shall not exceed the permissible maximum charge laid down by the Chief Inspector for the kind of Permitted Explosive used:

(c) no shot shall be fired in coal in any gallery unless--

(1) the coal has been undercut, overcut or side cut: and

(2) the length of the shot hole is at least six inches less than the length of the cut.

116-B. In any underground part of a mine two or more shots shall not be charged or fired in the same place simultaneously, if the explosive used is not a Permitted Explosive: Provided that this regulation shall not apply to—

(a) working places in which the roof, floor and sides within a radius of 100 feet of the place where shots are to be fired are naturally wet; or

(b) a cross-measure drift in stone if such drift does not contain dry coal-dust or

(c) shafts which are in the process of being sunk through or across the strata.

116-C. Where shots are fired electrically, the shot-firer shall—

(i). for the purpose of firing, use a cable which is not less than 60 feet in length:

The mine needs maximum 03 Acres of land for the purpose of development of the mine. The Low Level and High Level for the mine are developed up till the coal seam. The land is used for the platform of coal and dumping of solid waste in form of lime stone and shales at the surface.

Land Value

The lease land value is free of cost granted by the Government of The Punjab to the lease holders. The security of the lease is deposited to the Government of the Punjab which is very nominal, i.e. Rs 10 per acres subject to minimum of Rs. 5000/- per lease.

The surface land belongs to the private land owners and the surface rent is settled mutually in between the lease holder and the land owner. In case of dispute the Licensing Authority decides the surface rent, under Rule 143 of the Punjab Mining Concession Rules, 2002.

The damage to any private land or Government land the Director/Licensing Authority of The office of The Director General Mines and Mineral Government of Punjab decides the compensation to be given to the aggrieved party under Rule 142 of the Punjab Mining Concession Rules, 2002.

Settlement

The settlement of mining related disputes are the jurisdiction of the Director General Mines and Mineral and in case where the matter are not settled by D.G Mines, the lessee has to go for an Appeal before the Secretary Mines and Mineral, under Rules 185 and 185-A of the Punjab Mining Concession Rules, 2002. The case regarding the compensation and surface rents are the jurisdiction of the Licensing Authority to settle the cases under Rule 142 and 143 of the Punjab Mining Concession Rules, 2002.

The other related matter than the mining the cases for the settlement of disputes is the jurisdiction of the civil courts.

Employment

The employment of the workers and the employees is from the local population as well as from the Northern, Southern and Central areas of Pakistan. The workers are from Swat, Kohat, Dir and A.K are very hard working and they are skilled workers for the employment in the coal mines. The workers belonging to the local population are also very hard working and they are more skilled also, but their productivity is low due to their own self-employed job in their own land, self-cultivation. The local population being educated is employed in the administration jobs at the offices.

Public Participation

Introduction

The project will mainly create a positive impact in and around the project area of lease No. ML-CKL-I-Coal (137) and ML-CKL-I-Coal (209). The leases are situated near village Katas and Dhariala at Tehsil Choa Saiden Shah District Chakwal. Since the Project in these lease areas was started in the year 1975, the inhabitants of these villages are engaged in mining and now it is the third generation working in the coal mines. The workers of underground mining, surface related jobs and administrative jobs come from these villages. The project initiated in the year 1975 the local population had to work abroad in the cities or they use to join the armed forces for their livelihood. There were no means of transportation only one bus services use to go to Chakwal, Khewra and Pind Daden Khan. The horses and donkeys were used for transportation of material. Few camels were also used for heavier loads of transportation in this hilly area. Now this area and villages are the model villages having all facilities of a modern city.

Public Consultation

The public consultation process includes numbers of personals and the inhabitants of the project area, i.e. residents of village Katas and Dhariala at Tehsil Choa Saiden Shah. The Tehsil Town Choa Saiden Shah is now the busiest town in the area. The number of villages around the Choa Saiden Shah town come to this place for their daily groceries purchases.

Different aspects and impacts on the proposed project were highlighted regarding their impacts on the physical, biological and socio economic environment of the project area.

Stake holders concerns regarding various aspects, existing environment and impacts of the project are also included in the EIA Report.

Objective of Consultation

Public consultation plays a vital role in studying the effects of the project on the stake holders and in the successful implementation and excavation of the proposed projects. Public involvement is a compulsory feature of environmental assessment, which leads to better and more acceptable decision making. The overall objectives of the consultation with stake holders is to verify the environmental and social issues that have been presumed to arise and to identify those which are not known and are unique to coal mining project.

- (1) Information dissemination, education and liaison.
- (2) Identification of Problems and needs.
- (3) Collaborative problem solving.
- (4) Reaction, comment and feedback on proposed project;
and

- (5) Documenting mitigation measures proposed by the stake holders.

Methodology

The team of experts carried out public consultations at various locations around the proposed project site. The public consultation was made with the local inhabitants of the nearby villages. Following strategy was adopted for public consultation:

- (i) Section of stakeholders for consultation of the proposed project, site and initial discussions with the residents, pedestrians and shop keeper etc.
- (ii) Meeting with the stake holders were held to document their opinions expressed during the meeting.
- (iii) All the meetings were held in open atmosphere in which participants expressed their views freely.

Issues Discussed

Following issues were discussed during the stake holders' consultation:

- (i) Overall activities of the project and their possible impacts;
- (ii) Possible impacts on natural vegetation, flora and fauna.
- (iii) Possible mitigation measures;
- (iv) Beneficial factors and involvement opportunities of the local people in the self-activities of the project.

Meeting Held with Stake Holders

Meetings were held to discuss major technical aspects of EIA for the Project of Coal Mining in the lease No. ML-CKL-I-Coal (137) and ML-CKL-I-Coal (209) with some selected stake holders as follows:

Persons interviewed:

1. Kashif Abbas s/o Syed Niaz Hussain Shah
(Resident of village Deri Syedan)
CNIC No. 37202-6801171-5
2. Atif Iqbal s/o Muhammad Iqbal Bhatti Rajpoot
(Resident of village Dalwal)
CNIC No.37202-2840102-7
3. Meesam Abbas s/o Barkaat HussainShah
(Resident of Village Deri Syedan)
CNIC No. 37202-5425698-5
4. Ghulam Haider s/o Muhammad Gulzar
(Resident of village Deri Syedan)
CNIC No. 37202-2602774-3
5. Syed Waseem Hussain Shah s/o Shabbir Hussain Shah
(Resident of village Dalwal)
CNIC No. 37202-4177496-9
6. Hashim Raza s/o Barkaat Hussain Shah
(Resident of village Dheri Syedan)

CNIC No.37202-1827580-5

7. Ishtiaq Hussain Shah s/o Sada Hussain Shah

(Resident of village Mial Sharif)

CNIC No.37202-5269793-1

8. Mujtaba Ali s/o Muhammad Asghar

(Resident of village Dulmial)

CNIC No. 37202-5838088-7

9. Muhammad Ilyas s/o Muhammad Taj

(Resident of village Dulmial)

CNIC No.37202-2703050-7

10. Ali Asghar Shah s/o Fazal Shah

(Resident of Village Deri Syedan)

CNIC No. 37202-9252443-5

After a detailed interview, following findings were made:-

- (i) The total population of the village Katas is approximately Ten Thousand Residents.
- (ii) The people of the area are doing jobs in the armed forces of Pakistan, cultivation of crops, Transportation, livestock, shops and most of them involved in the coal mining sector.
- (iii) The Rural Health Hospital is on the main road in the village, The Mine Labour Welfare Hospital at Choa Saiden Shah is free for labour treatment, 2 KM from village and Tehsil Headquarters Hospital at Katas, Choa Saiden Shah is 1 KM from the village.

- (iv) The Government of the Punjab has provided water supply scheme to the village and plenty of clean drinking water is available from the boreholes of the water supply scheme.
- (v) The residents of the village are provided Gas connection.
- (vi) The village has its own grocery shops.
- (vii) The number of persons is associated with the coal mining project and the coal mining project has up lifted the economic conditions of the local people by giving those jobs. They are benefiting in future also they will be benefiting from the coal mining project. The coal mining projects are socially and economically are beneficial to the local population.

Personal Interview

Kashif Abbas (Resident of village Deri Syedan)

- (i) The total population of the village Katas is approximately 5000.
- (ii) The Government of Punjab Dispensary at the village is not operative. The private dispensary is facilitating the village and Mines Labour Welfare Hospital at Choa Saiden Shah is 2 Km from the village. At Katas Tehsil Headquarter Hospital is 01 Km from village which is also providing the medical facility to the village population.
- (iii) Mostly people of the village are educated and are in the armed forces of Pakistan. The working class of the village is working in the mines. The livestock and cultivation of crops are being also done side by side as land holding are of small size

- (iv) The project of coal mining in this area has been the life line for the residents for many years and the local population is still benefitting from project.

General Public Consultation

A series of road side and focus group discussions were carried out with local committees in the project area to find out their opinion about the project. Both male and female respondents were included in the consultation process at the community level.

- (i) Generally people have welcoming attitude towards the project. The project will be beneficial for the local population as they will be having opportunity of jobs and it will boost the local economy.
- (ii) There are no adverse effects of the project as the project is far away from the residential area of the villages. The coal mines are beneath the surface they have no noise effect or dust effect to the local residents. The cultivated land is not affected and normal land cultivation is being done in the agriculture land.
- (iii) The Government Schools are located in all the villages imparting education up till the high school. The Mines Labour Welfare Organization is giving free high school education at the school built at the Pidh village. The numbers of private schools are educating the children. Most of the private schools are in the Choa Saidu Shah, Town.
- (iv) The Government of Pakistan has built an educational Institution of High standard that is the cadet college Katas at Choa Saidu Shah, District Chakwal.

Biological Environment

(1) Wet lands

In the lease area there is no wet land of any type. Nearby about seven kilometers from the lease area is Dhoke Talian Dam, Kot Raja Dam and Katas Raj Pond. The dams have small lakes giving a very scenic and pictorial view. The Katas Raj Pond is an archeological and sacred site for the Hindus. The river Jhelum is 25 KM on the south of the lease area.

(2) Marine

There is no marine life in the lease area.

(3) Rivers and Lakes

There is no river or lake in the lease area. River and lakes have been discussed in the wet lands, which are in the nearby vicinity.

(4) Urban Land/ Crop Land

The urbanization of these villages in this area is very old civilization. People settled here in these areas for the rich soil pleasant climate, plenty of sub soil water and water springs. Agriculture fields growing wheat, Bajra and Maize. They developed the fruit gardens. The famous fruit is "LOKHAT" Apricot and Guava. Now with urbanization the crop land holdings are becoming smaller and smaller and cultivation of crops have gone meager.

Grass Land

The area being mountainous and hilly there is no disturbance in the grass land. The grass land is a big source of feeding of cows and goats for the local community.

Shrub Land

The hilly and mountain area being undisturbed by any human activity the shrub land is undisturbed. The different types of shrubs have wild growth. The trees include *Acacia Modesta* (Phulai), *Olea ferruginea* (Kahu), *Dodonaea viscosa* (Sanatha), while *gymnosporiroyleana* (Pataki), *Zizyphusnummularia* (Mullah), *Monotheacabuxifolia* (Gurgura), *calotropis procera* (Aak), *Zizyphus nummularia* (Jhar Ber), Chunga, Khabal, Dhatura, Jangali Paneer, Harmal, Kach Mach, Bakhra etc.

Forest

There is no forest area in the lease area. However nearby forest is known as Rakh Jhangar and Rakh Deewan. The trees and shrubs are the same as narrated. The forest is rich in the following trees and shrubs and local names are narrated below; Phulai, Kau, Sanetha, Jangali Ber, Kikar, Toot, Tali, Vehkar, Chachara, Aak, Dhaman, Paghwar, Bore, Dhreak, Safeeda and Khnughair etc. Salt range forests have different animals. They are enlisted below:-

Table : Indigenous / Naturalized Trees

No.	Botanical Names	Common Names	Family
1.	<i>Acacia Modesta</i>	Phulai	Mimosoideae
2.	<i>Acacia Nilotica</i>	Kikar	Fabaceae
3.	<i>Prosopis juliflora</i>	Walaiti Kikar	Mimosaceae
4.	<i>Zizyphus mauritiana</i>	Bair	Rhamnaceae
5.	<i>Fagonia indica var</i>	Dhaman	Zygophyllaceae
6.	<i>Saccharum Harmala L.</i>	Kahu	Poaceae

Table: Indigenous / naturalized Shrubs

No.	Botanical Names	Common Names	Family
1.	<i>Calotropis procera</i>	Aak / Akra	Asciepiadaceae

2.	<i>Rhazya stricta</i>	Sihar	Apocynaceae
3.	<i>Withania coagulans</i>	Jungli Paneer	Solanaceae
4.	<i>Ziziphus nummularia</i>	Jhar Ber	Rhamnaceae

Table: Indigenous / naturalized Herbs

No.	Botanical Names	Common Names	Family
1.	<i>Aerva javanica</i> (Burm.F.) Juss.	Boi	Amaranthaceae
2.	<i>Aristida adscensionis</i> Linn	Lappa, Lamba	Poaceae
3.	<i>Argyrolobium roseum</i> (Camb.) Jaub.	Makkan Buti	Papilionaceae
4.	<i>Caralluma tuberculata</i> N.E. Brown	Chaunga	Asclepiadaceae
5.	<i>Cynodon dactylon</i> (L.) Pers.	Khabal	Poaceae
6.	<i>Datura fastuosa</i> L.	Dhatura	Soleanaceae
7.	<i>Peganum Harmala</i> L	Hermal	Zygophyllaceae
8.	<i>Saccharum spontaneum</i> Linn	Kahi	Poaceae
9.	<i>Solanum surattense</i> Burm.	Mahori	Solanaceae
10.	<i>Solanum nigrum</i> L.	Kach Mach	Solanaceae
11.	<i>Tribulus Terrestris</i> L.	Bakhra	Zygophyllaceae

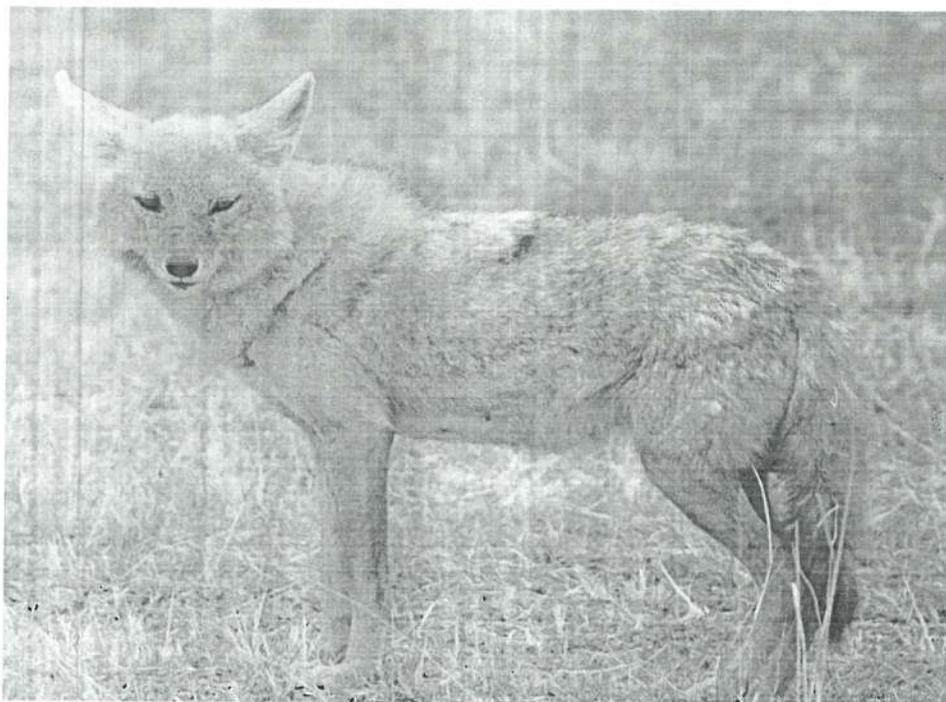
Fauna

Varieties of the wild animals are found in different tracts of the area and are of considerable importance. The mountain sheep known as (Urial) affords the best large game in the Arra range and outlying spurs. The Ravine deer or Chinkara (Indian Gazelle) generally called Hiran, occurs in the arid region of Tehsil Choa Saiden Shah. The Jackal is occasionally seen and constantly heard in all parts of the tracts. The blue rock pigeon is common especially in the Choa Saiden Shah hills. Domestic camels are also kept in Tehsil Choa Saiden Shah area. The grey partridge (tittar) is fairly common everywhere but black partridge is found very rarely.

Local Fox



Red Wolf /Jackal



Rabbit / Hare

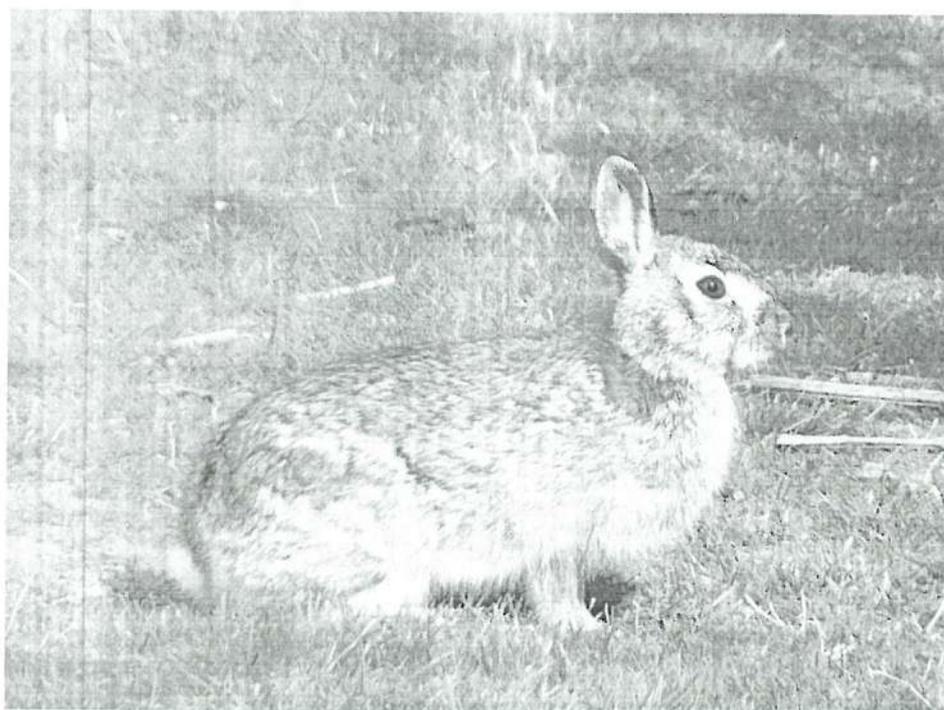


Table: Small Mammals Found in the Range Areas and Its Surrounding Area

#	Scientific Name	Order / Family	English Names	Local Name	Feeding Habit	Activity Pattern
1.	<i>Bandicota bengalensis</i>	Rodentia / Muridae	Indian Mole Rat or Rice rat	Fusli Choocha	GRN	NC
2.	<i>Golunda ellioti</i>	Rodentia / Muridae	Indian Bush Rat	Choocha	GRN	NC
3.	<i>Mus musculus</i>	Rodentia / Muridae	Common House mouse	Choohi	GRN	NC
4.	<i>Rattus Rattus</i>	Rodentia / Muridae	Common Rat	Choocha	GRN	NS
5.	<i>Funambulus pennantii</i>	Rodentia / Petromidae	Palm Squirrel	Gulehri	GRN	DR
6.	<i>Hystrix cristatus</i>	Rodentia / Hystricidae	Indian Crested porcupine	She	HER	NC
7.	<i>Herpestes edwardsi</i>	Carnivora / Herpestidae	Common Indian Mongoose	Neola	CAR	DR
8.	<i>Herpestes javanicus</i>	Carnivora / Herpestidae	Small Indian Mongoose	Neola	CAR	DR
9.	<i>Viverra indica</i>	Carnivora / Viverridae	Small Indian civet	Jungli Billi	CAR	NS
10.	<i>Hemiechinus collaris</i>	Insectivora / Erinaceidae	Long-eared hedgehog	Kundyara Choocha	CAR	NC
11.	<i>Lepus nigricolis</i>	Lagomorpha / Leporidae	Indian Hare	Khargoash	HER	NC
12.	<i>Suncus murinus</i>	Insectivora / Soricidae	Indian Musk Shrew	Chachundar	INS	NC
13.	<i>Pteropus giganteus</i>	Chiroptera / Pteropodidae	Flying Fox	Chumgadar	FRU	NC
14.	<i>Scotophilus heathii</i>	Chiroptera / Vespertilionidae	Common Yellow-bellied Bat	Chumgadar	INS	NC
15.	<i>Hipposideros cineraceus</i>	Chiroptera / Hipposideridae	Least leaf-nosed bat	Chumgadar	INS	NC

GRN=Granivore, CAR= Carnivore, HER= Herbivore, INS= Insectivore, FRU= Fruitivore, NC= Nocturnal, DR= Diurnal, NS= Non specific

Amphibians and reptiles are very important animals among the vertebrates. Out of 35 possibly occurring amphibian and reptilian species of the area, 12 species were observed or collected. The remaining species have been

recorded through secondary data obtained through discussions with the local inhabitants and consulting the previous literature citations. The amphibians are represented by six species belonging to six genera and three families. Among the reptiles, chelonians are represented by a single species belonging to family Trionychidae. Lizards outnumber all the groups of reptiles in the study area and are represented by 15 species belonging to 12 genera and six families. Snakes are the second dominant group of herptiles represented by 13 species belonging to 12 genera and six families.

Table: Amphibian and Reptilian species of Salt Range Lease and its surrounding areas

#	Species Name	Taxonomic Position	English/Vernacular Name	Activity Pattern	Status	Feeding Habits
1.	<i>Bufo stomaticus</i> * (Lutken, 1862)	Class: Amphibia Order: Anura Family: Bufonidae	Marbled Toad/ Daddoo	Non-specific (Mostly nocturnal)	A	Insectivore
2.	<i>Hoplobatrachus tigerinus</i> * (Daudin, 1803)	Class: Amphibia Order: Anura Family: Ranidae	Bull-frog/ Daddo	Nocturnal	C	Insectivore
3.	<i>Euphlyctis cyanophlyctis</i> * (Schneider, 1799)		Skittering frog/ Daddoo	Non-specific (Mostly nocturnal)	C	Insectivore
4.	<i>Fejervarya limnocharis</i> ** (Boie, 1834)		Alpine cricket frog / Daddo	Nocturnal		Insectivore
5.	<i>Sphaeroteca breviceps</i> ** (Schneider, 1799)		Burrowing frog / Daddo	Nocturnal		Insectivore
6.	<i>Microhyla Omata</i> ** (Dumeril & Bibron, 1841)	Class: Amphibia Order: Anura Family: Microhylidae	Ant frog / Daddoo	Nocturnal		Insectivore
7.	<i>Lissemys punctata andersoni</i> ** (webb, 1980)	Class: Reptilia order: Chelonia Family: Trionychidae	Indian flap-shell/ Karkooma	Diurnal		Omnivore (mostly carnivore)
8.	<i>Eublepharis macularius</i> ** (Blyth, 1854)	Class: Reptilia order: Sauria Family: Eublepharidae	Fat-tail gecko/Bindowa	Nocturnal		Insectivore
9.	<i>Calotes versicolor</i> * (Daudin, 1802)	Class: Reptilia order: Sauria Family: Agamidae	Indian garden lizard/Sedar	Diurnal	C	Insectivore
10.	<i>Laudakia</i>		Black rock	Diurnal		Insectivore

	m.melanura** (Stoliczka, 1872)		agama/Sedar			
11.	Trapelus agilis agilis** (Oliver, 1804)		Brilliant agama/ Korr Kirili	Diurnal		Insectivore
12.	Hemidactylus flaviviridis* (Rupell, 1835)	Class:Reptila order:Sauria Family: Gekkonidae	Yellow-bellied house gecko/ Korr Kirili	Nocturnal	A	Insectivore
13.	Hemidactylus brooki** (Gray, 1845)		Spotted Indian house gecko/ Korr Kirili	Nocturnal		Insectivore
14.	Cyrtopodion scaber* (Heyden in Rupell, 1827)		Keeled rock gecko/Korr Kirili	Nocturnal	R	Insectivore
15.	Cyrtopodion montiumsalsorum ** (Annandale, 1913)		Salt-range ground gecko/ Korr Kirili	Nocturnal		Insectivore
#	Species Name		Taxonomic Position	English/Verna cular Name	Activity Pattern	Statu s
16.	Acanthodactylus cantoris** (Gunther, 1864)	Class:Reptila order:Sauria Family: Lacertidae	Indian fringe- toed sandy lizard/ Kirili	Diurnal		Insectivore
17.	Mesalina watsonana** (stoliczka, 1872)		Long tailed desert lacerta/ Kirili	Diurnal		Insectivore
18.	Ophisops jerdonii* (Blyth, 1853)		Punjab snake- eyed lacerta/ Guddi	Diurnal	C	Insectivore
19.	Eutropis dissimilis* (Hallowell, 1860)		Class:Reptila order:Sauria Family: Scincidae	Striped grass skink/ Kirili	Diurnal	C
20.	Ablepharus pannonicus** (Fitzinger, 1823)	Red-tailed snake-eyed skink/Kirili		Diurnal		Insectivore
21.	Veranus bengalensis* (Daudin, 1802)	Class:Reptila order:Sauria Family: Veranidae	Bengal monitor/ Gho	Nonspecific (mostly diurnal)	A	Carnivore
22.	Veranus griseus koniczny** (Mertens, 1954)		Indo-pak desert monitor/ Gho	Nonspecific (mostly diurnal)		Carnivore
23.	Leptotyphlops macrorhynchus** (Jan, 1862)	Class:Reptila order:Serpentes Family: Leptotyphlopidae	Breaked thread snake/ saanp	Non specific		Decompos e org.matter
24.	Ramphotyphlops braminus** (Daudin, 1803)	Class:Reptila order:Serpentes Family:Typhlopidae	Brahminy blind snake/sannp	Non specific		Decompos e org.matter
25.	Eryx johnii** (Russell, 1801)	Class:Reptila order:Serpentes Family:Boidae	Indian sand boa/ Doomoi	Nocturnal		Carnivore
26.	Amphiesma stolatum** (Linnaeus, 1758)	Class:Reptila order:Serpentes Family:Colubrida	Striped keel- back/Sannp	Diurnal		Carnivore

27.	Platyceps v.ventromaculatus** (Gray and Hardwicke, 1834)	e	Glossy-bellied racer/sannp	Nocturnal		Carnivore	
28.	Platyceps r.rhodorachis** (Jan, 1865)		Cliff racer/sannp	Diurnal		Carnivore	
29.	Ptyas m.mucosus* (Linnaeus, 1758)		Rope snake or Dhaman/Dadm aar	Diurnal	A	Carnivore	
30.	Spalerosophis atriceps** (Fischer, 1885)		Red-spotted diadem snake/Sat Garrhi	Nocturnal		Carnivore	
31.	Xenochrophis p.piscator		Checkered keel-back	Non specific		Carnivore	
32.	Bungarus caeruleus** (Schneider, 1801)	c.	Class:Reptila order:Serpentes Family:Colubridae	Indian or common Krait/Sangchoor	Nocturnal	Carnivore	
33.	Naja n.naja (Linnaeus, 1758)	e	Black Cobra/ Chalyap	Nonspecific (mostly diurnal)	R	Carnivore	
34.	Echis carinatus sochureki* (Stemmler, 1969)		Class:Reptila order:Serpentes Family:Viperidae	Sochurek's saw- scaled viper/Pissi	Nocturnal	A	Carnivore
35.	Daboia r.russelii** (Shaw and Nodder, 1797)		Russel's chain viper/ Dhai Garrhi	Nocturnal		Carnivore	

Abundant (A) = Collected/observed at more than 5 sites Common

(C) = Collected/observed at 2-5 sites

Rare (R) = Collected/observed at single site

(*) = Species observed/collected by the author

(**) = Species reported in literature/secondary data

Table: List of birds observed at Salt Range Leases and surrounding Areas

Order	Family	Scientific Name	English Name	Habitats	Breeding
Accipitriformes	Accipitridae	Elanus caeruleus	Black shoulder	R	+
		Milvus	Kite	R	+

		migrans	Indian Kite			
Anseriformes	Anatidae	Anas crecca	Common	W	-	
		Aythya ferina	Teal	W	-	
		Anas platyrhynchos	Common Pochard Mallard	W	-	
Caprimulgiformes	Caprimulgidae	Caprimulgus asiaticus	Indian Nightjar	R	+	
Charadriiformes	Recurvirostridae	Himantopus himantopus	Black-winged	R	-	
	Charadriidae	Charadrius dubius	Stilt	R	+	
	Tringinae	Actitis hypoleucos	Red-wattled Lapwing		R	+
			Little Ringed Plover		W	-
			Common Sand Piper			
Ciconiformes	Ardeidae	Egretta garzetta	Little Egret	R	+	
		Bubulcus ibis	Cattle Egret	R	+	
		Egretta intermedia	Intermediate Egret	R	+	
		Egretta gularis	Large Egret	EM	-	
		Ardea purpurea	Indian Reef Heron	R	-	
		Ardea cinerea	Indian Reef Heron	W/PM	?	
		Nycticorax nycticorax	Purple Heron	LM/R	+	
		Ardeola grayii	Purple Heron	R	+	
			Night Heron			
			Pond Heron			

			heron or Paddy Bird		
Columbiformes	Columbidae	Streptopelia decaocto Streptopelia senegalensis	Ringed or collard Dove Little brown Dove	R R	+ +
Coraciiformes	Alcedinidae Meropidae Upupidae Coraciidae	Halcyon smyensis Merops philpinus Upupa epops Coracias benghalensis	White breasted Kingfisher Little green Bee-eater Blue-tailed Bee-eater Hoopoe Indian Roller or Blue Jay	R SM SM R R	+ + - - +
Cuculiformes	Cuculidae	Eudynamys scolopacea Centropus sinensis	Common Koel Pheasant Crow	SM R	- +
Falconiformes	Falconidae	Falco tinnunculus	Common Kestrel	R	-
Galliformes	Phasianidae	Francolinus Francolinus pondicerianus Pavo cristatus	Black partridge Grey partridge Indian Blue Peafowl	R R R	+ + +

Order	Family	Scientific Name	English Name	Habits	Breeding
Gruiformes	Rallidae	Gallinula chloropus	Water hen or Moorhen	R	+
		Porphyrio	Purple Moorhen	LM	+
		Fulica atra	Coot	W	-
Piciformes	Capitonidae	Megalaimahaema cephalocephala	Coppersmith Barbet	R	-
Podicipediformes	Podicipedidae	Tachybaptus ruficollis	Little Grebe	R	+
Passeriformes	Corvidae	Corvus splendens	House crow	R	+
		Dendrocitta vagabunda	Indian tree-pie	R	+
	Dicruridae	Dicrurus macrocerus	Black Drongo	R	+
	Estrildidae	Lonchura punctulata	Spotted Munia	R	?
	Hirundinidae	Hirundo rustica	Spotted Munia	W/R	-
	Laniidae	Lanius schach	Common Swallow	W	-
			Rufous-backed Shrike		
	Motacillidae	Motacilla maderapatensis	Motacilla flava	W	-
				R	+
Nectariniidae	Nectarinia asiatica	Yellow Wagtail	R	+	
Oriolidae	Oriolus oriolus	Yellow Wagtail	SM	+	

	Passeridae	Passer domesticus	Large pied Wagtail	R	+
	Ploceidae	Ploceus philippinus	Purple sunbird	R	?
	Pycnonotidae	Pycnonotus leucogenys	Golden oriole	R	+
		Pycnonotus cafer	Common	R	+
	Sturnidae	Acridotheres tristis	Sparrow Indian Baya	R	+
	Sylviidae	Orthotomus sutorrus	White	R	?
	Turdidae	Cercomela fusca	cheeked bulbul	R	?
		Myiophoneus caeruleus	Red vented Bulbul	R	-
		Phoenicurus ochruros	Common Myna	W	-
		Copsychus saularis	Tailor Bird	R	?
	Timaliidae	Turdoides caudatus	Brown Rock Chat	R	+
	Turdinae	Saxicola caprata	Blue Whistling Thrush	R	+
	Zosteropidae	Zosterops palpebrosa	Black or Indian Redstart Magpie Robbin Common Babbler Pied stone-chat or bush-chat White-eyed	R	+

(1) Uril, Leopard, Jackal, Wolf, Wild Bore(Pigs), Wild Hare, Rabits, Fox, Hedgehog, Mole are commonly seen in the forest.

The forest land is being looked after by the forest department and Flora and Fauna are undisturbed in the forest area.

Since there is no mining in the forest area it has no impact on the forest land.

The forest land being used for mining purpose its NOC has to be taken for the Forest Department. There is no restriction for use of forest land for the mining purpose if the Forest Department has given NOC for the mining purpose.

The coal deposits or mineral deposits are not the produce of forest land. The minerals are granted by the Directorate General of Mines and Minerals, Government of the Punjab and it is the purview of the office of the Directorate General of the Mines and Mineral Department to grant the leases in the forest land after the NOC has been obtained from the forest land from the Department of Forest, Government of the Punjab.

The forest produce include all forest items in the forest as the forest produce; other than the minerals. The wood, underground water source, grazing ground and all other material belongs to forest and forest department can charge for the use of all materials in the forest to the users.

The land used for the forest for the mining purpose for the purpose of roads and paths is being charged on annual rental bases to the mining companies. The forest department notifies the rates and rents chargeable to the mining companies for the use of land in the forest area.

DEVELOPMENT SCHEME

ML-CKL-I-COAL (137)

Introduction and Brief History.

The Prospecting License for coal over an area of 617.43 acres was granted to M/s Karam Sons (Pvt) Ltd. for the period of one year on 24-12-1975 and further renewed upto 1991. The prospecting License converted into mining lease for the period of five years w.e.f 08-08-1989 to 07-08-1994 vide order dated 27-01-1991 in view of good performance of the licensee. Later on the area was further renewed for the period of 20 years w.e.f 08-08-1994 07-04-2014.

During last 50 years the lessee has made huge investments for the development and exploration work in the area. The lessee has driven 18 mines in the area, out of which at present two mines namely Mine No. 8 and Mine No. 14 are operative and productive whereas Karam Mine is temporary close due to heavy water in the mine. Rest of mines are closed due to heavy underground water, non-proving and fault mining machinery such as haulage alongwith accessories compressor, generator, dewatering machinery etc has been deployed at the site. Infrastructures, labor quarters, office building, tents has also been deployed to accelerate mining activities in the area. The lessee has also drilled four bore holes in the area where 13 inch coal seam was touched.

Briefly stated that the lessee has invested huge amount on the development of this area since the date of grant. The lessee has produced thousands tons of coal from this area and paid considerable amount to the government in shape of royalty and other taxes. The lessee also facing water problem in the mines and up till now could not be successful to control it, therefore the coal production from lease area remain low. Furthermore heavy

rain in the months of September 2006 has damaged all the working mines. Survey of the area indicates that almost 80% of the granted area consists of coal bearing formation. The intensive exploration work carried out by the lessee provided a clear picture of the potential of the area. In view of the potential of the area it has been decided to develop the area on scientific lines. Now the lessee has plan by driven of one new mine and up gradation of infrastructure facility at site and deployment of heavy dewatering machinery for controlling the underground water.

Consultants consisting of Mining Engineer, Geologist and Mining Surveyor visited our area thoroughly and prepared this development scheme. This development Scheme describes location of the area, geology of the area, working method, estimate of workable reserves, detail of personal to be employed and machinery to be installed. Next three years Phase Program of development supporting system, ventilation system.

Location of the Area.

The leased area measuring 616.43 acres is located near village Katas in District Chakwal. Topographically the area falls on survey of Pakistan Sheet No. 43-D/14. A metaled road commencing from Choa Saiden Shah to Kallar Kahar is passing very near to the granted area, therefore only 1 Km road is required to connect the area with this road which was already been constructed by the lessee. A network of 2 Km Katcha road to connect all the Operative / Closed mines to each other is also available. The traverse of the granted area is as under:-

Points	Easting (Yards)	Northing (Yards)
A	09470	41000
B	09250	40640
C	08890	40510
D	08740	40270
E	08230	39850

F	05770	40840
G	05770	40910
H	06650	40910
I	06650	41460
J	06670	41700
K	07830	41460
L	07910	41441.42
M	07786	40993.39
Total Area 616.43 Acres		

Geology of the area.

Geological investigation of this area reflects that a number of rock units are exposed in the granted area and these rocks / formations has been marked in attached geological plan and described below:-

- Alluvium
- Kamlial formation.
- Chorgali formation.
- Sakesar Lime Stone.

Nature of Deposit.

Coal in the salt range is lignitic to sub-bituminous and occurs in the basal parts of the tertiary sequence, ranging in age from 50 to 60 million years. Most of these areas have been effected by organic movements of different intensities in warping and dislocation of coal seams. The coal seam in these areas generally lenticular and range in thickness from few inches to few feet. Coal occurs within the patala formation of early Eocene age. Structurally, the coal deposit lies in the synclinal plateau bounded by eroded

anticlinal limbs. The plateau is formed by the Sakesar lime stone which overlies the patala shale.

Structure.

The area is an extreme eastern limb of salt range coal field. This part of salt range is synclinal fold running in the east-west direction. The anticlinal portion of the syncline has been weathered away and this has produced escarpment in the area.

General Stratigraphy Sequence of Salt Range.

As this area coal falls in salt range as such it is imperative to give a general stratigraphical sequence of salt range and its behavior regarding exposures of rock units. The salt range starts from Kala Bagh (Mianwali). Although the general stratigraphic sequence of different rock units throughout the salt range is same yet the exposures of different rocks units of different from place to place. These exposures of different rock units of different ages have been well indicated and shown by Dr. Gee's maps.

Status of the mines in the leased area.

Operative Mines:

Sr. No.	Mine No.	H.L (ft)	L.L (ft)	Proved/un proved	Remarks
1.	Mine No. 8	20'	1125'	Proved	Work in progress
2.	Mine No. 14	1000'	1345'	-do-	-do-

Closed Mines:

Sr. No.	Mine No.	H.L (m)	L.L (m)	Proved/un proved	Remarks
1.	Mine No. 1	-	164	Not Proved	Closed due to

					water
2.	Mine No. 2	-	102	-do-	-do-
3.	Mine No. 3	-	575	-do-	-do-
4.	Mine No. 4	-	213	-do-	-do-
5.	Mine No. 5	-	82	-do-	-do-
6.	Mine No. 6	-	214	-do-	-do-
7.	Mine No. 7	-	803	-do-	-do-
8.	Mine No. 7 B	-	394	-do-	-do-
9.	Mine No. 9	-	164	-do-	-do-
10.	Mine No. 10	-	180	-do-	-do-
11.	Mine No. 11	-	100	-do-	-do-
12.	Mine No. 12	-	426	-do-	-do-
13.	Mine No. 13	-	425	-do-	-do-
14.	Mine No. 15	-	66	-do-	-do-
15.	Mine No. 16	-	279	-do-	-do-
16.	Mine No. 17	-	200	-do-	-do-
17.	Karam Mine	-	170	-do-	-do-
18.	Ilyas Mine	-	190	-do-	-do-

Reserves Estimation.

The previous explorative and geological information available have been studied together with the amenability and potential of coal in the running mine. This can be inferred that fairly good reserves of coal exist in the granted area. The Geo-mining area data so obtained is manipulated for estimation of the coal reserves which is as follows:-

Total granted area	=	616.43 acres
Coal bearing area	=	493.14 acres
Average workable seam thickness	=	1 feet
Specific gravity	=	1.5

Magnitude of estimated	=	21451178.4
Coal Reserves	=	716039.28 tons
Recoverable Estimated coal (75%)	=	537029.46 tons

Mining System.

Long wall advancing system is being adopted as working method. This method of working is prevailing at most of the collieries and mines in the salt range and proved economical and suitable in our condition because of the following advantages.

1. It needs less investment on opening and development working.
2. Mine waste from main heading and roof ripping can easily be packed in goaf area.

The mine will be allotted a definite area called a coal mines field so that systematic and planned working of the available deposits could be done. The mine field will be developed in the form of panels along the strike of coal and each panel will be divided into four long wall faces Width of each panel will be 30 meters length and 30 meters width. Each long wall mine would be developed phase wise.

The goaf behind worked out coal will be fully packed with debris obtained from stone parting between the coal seam roof ripping and floor denting. Excessive waste material (if any) would be transported to the surface. Entries and heading are supported by the three piece timber sets whereas on the face immediate and temporary supports provided by the plank put on the two wooden prups would be replaced by wooden chocks to act as permanent supports. The chocks are erected three feet apart. As already mentioned the chock and space behind the face will fully packed by debris

Drainage of Water.

Coal mines in our area contain water therefore heavy duty submersible pumps has been installed for drainage.

Supporting.

The high level and low level entries are being supported by round timber prups having 10 cm dia in the shape of the three pieces timber set at a distance of 60 cm. For further safety of main road ways ten meter wide coal pillars are being left along the side of all entries. The faces are being worked out with full extraction and the controlled settling of roof will be allowed. The faces will be supported by timber prups followed by wooded chawks on chess board formation system.

Ventilation.

The climate and elevation above the seam of the leased area facilitate natural ventilation upto 500 feet. As there will be reasonable distance between the low level and high level, therefore the air will flow naturally through the mine. To maintain the natural ventilation the road ways will be kept straight and the stoppage will be packed carefully. Exhaust fans and blower fan would be installed at every mine to maintain proper ventilation.

Packing material would be obtained from the same mine while performing different maintenance operation i-e roof denting, floor heaving etc. To maintain the natural ventilation roadways are kept straight and stoppage are packed carefully.

Machinery and Equipment's.

We will undertake all out efforts to run the mining project using modern machinery and equipment's. The following mining machinery is available at site.

1. Compressor along with accessories
- 02.

2. Haulage with accessories	02.
3. Engine with Generators	04.
4. Drill Machine	01.
5. Water pumps	10.
6. Exhaust Fan	01.
7. Mine Tubs	04.

Technical personals employed.

Highly qualified and experienced personal have already been engaged for supervision of mining operation. Subject area being already operational specific requisite number of supervisory and junior cadre has been engaged. Detailed of available technical personal and other manpower is as under:-

1. Mining Engineer Consultant	01.
2. Surveyor	01.
3. Haulage Operator	02.
4. Qualified Mine Sirdar	02
5. Electrician	02.
6. Account clerk / Munshi	01.
7. Chowkidar / Waterman	01.

Details of roads infrastructure and other facilities to the staff.

Road Network.

As mentioned above that well maintained all whether truck able katcha work has already been constructed by the lessee to connect the entire operative as well as closed mines with each other.

Other infrastructures and facilities.

Sufficient residential facilities to the staff and labour already been provided at site which includes the following.

1. Labour quarters	21 Nos.
--------------------	---------

2. Office / Staff room	01
3. Portable water storage tank	03
4. Haulage Room	01
5. Machinery Room	01
6. Store	01
7. Mosque	01

Drinking Water

A natural drinking water spring is available for the mine workers near the granted area. The quality of water is fairly good and best for health. However a portable storage tank has already been provided at site.

Safety Wearing.

Safety helmets goggles, gloves, shoes and allied items will also be provided to the workers for their safety and facility.

PHASE PROGRAMME

Phase 1 (01-06-2014 to 30-11-2014)

1. Further drivage of Mine No. 8 L.L from 591 feet to 940 feet.
2. Further drivage of Mine No. 8 H.L from 21 feet to 70 feet.
3. Further drivage of Mine No. 14 H.L from 911 feet to 960 feet.
4. Further drivage of Mine No. 14 L.L from 951 feet to 1000 feet.
5. Purchased and installation of one exhaust fan for Mine No. 1
6. Repair of all existing road.
7. Purchase of 10 Safety helmets.
8. Construction of one water tank in the leased area.

Phase 2 (01-02-2014 to 31-05-2015)

1. Further drivage of Mine No. 8 L.L from 941 feet to 990 feet.
2. Further drivage of Mine No. 8 H.L from 71 feet to 120 feet.
3. Further drivage of Mine No. 14 H.L from 961 feet to 1010 feet.

4. Further drivage of Mine No. 14 L.L from 1001 feet to 1050 feet.
5. Purchase of one new spare generator.
6. Construction of one labour quarter in the area.
7. Construction of small workshop in the area.

Phase 3 (01-06-2015 to 30-11-2015)

1. Further drivage of Mine No. 8 L.L from 991 feet to 1040 feet.
2. Further drivage of Mine No. 8 H.L from 121 feet to 170 feet.
3. Further drivage of Mine No. 14 H.L from 1011 feet to 1060 feet.
4. Further drivage of Mine No. 14 L.L from 1051 feet to 1100 feet.
5. Installation of new PPD Mine NO. 1 H.L and developed upto 50 feet.
6. Construction of road upto new PPD Mine No. 1 H.L.
7. Construction of one labour quarter at new PPD Mine No. 1 H.L.
8. Purchase one one blower fan.

Phase 4 (01-12-2015 to 31-05-2016)

1. Further drivage of Mine No. 8 L.L from 1041 feet to 1090 feet.
2. Further drivage of Mine No. 8 H.L from 171 feet to 220 feet.
3. Further drivage of Mine No. 14 H.L from 1061 feet to 1110 feet.
4. Further drivage of Mine No. 14 L.L from 1101 feet to 1150 feet.
5. Further development of new PPD Mine No. 1 H.L from 51 to 100 feet.
6. Purchase of 10 more safety helmets
7. Construction of water tank at new PPD Mine No. 1 H.L.

Phase 5 (01-06-2016 to 30-11-2016)

1. Further drivage of Mine No. 8 L.L from 1091 feet to 1140 feet.
2. Further drivage of Mine No. 8 H.L from 221 feet to 270 feet.
3. Further drivage of Mine No. 14 H.L from 1111 feet to 1160 feet.
4. Further drivage of Mine No. 14 L.L from 1151 feet to 1200 feet.
5. Further development of new PPD Mine No. 1 H.L from 101 to 150 feet.
6. Repair of all existing road.

7. Purchase of one safety lamp.

Phase 6 (01-12-2016 to 31-05-2017)

1. Further drivage of Mine No. 8 L.L from 1141 feet to 1190 feet.
2. Further drivage of Mine No. 8 H.L from 271 feet to 320 feet.
3. Further drivage of Mine No. 14 H.L from 1161 feet to 1210 feet.
4. Further drivage of Mine No. 14 L.L from 1201 feet to 1250 feet.
5. Further development of new PPD Mine No. 1 H.L from 151 to 200 feet.
6. Purchase of one gas detector.

DEVELOPMENT SCHEME

ML-CKL-I-COAL (209)

Introduction and Brief History.

The area granted is situated to the north and north-west of Dhariala, District Chakwal and falls on the topographic sheet No. 43/D-13. The granted area is connected by 8 Km long katcha truckable road which connects metalled Choa Saiden Shah Kalar Kahar metalled road survey data of the traverse of the granted area starting from point 'A' and ending at point 'E' inform of Easting and Northing Coordinates are as under:-

Points	Easting (Yards)	Northing (Yards)
A	3404200	1043840
B	3404200	1045140
C	3403000	1045140
D	3402515.38	1045159.38
E	3402514	1043840

Geology

The Leased area falls in the eastern salt range region. The granted area covers formations like kamliyal formation Sakesar lime stone, namal and patala formation. The patala formation is not exposed in the leased area however; it is present in the subsurface coal occurs within the patalashale formation of early ocean age structurally the coal deposits lie in the synclinal palteaus. The skesar lime stone over lies the patala shale which contain the coal deposit of this area. The coal seam in this area is ranging from a few inches to 20 inches is present the coal has been closed as high volatile, sub bituminous and is high in ash and sulphur contents. It deteriorates badly during the storage and is liable to spontaneous combustion during hot weather.

Method of Mining.

Method of mining is long wall advancing we have driven two mines (Mine No. 2 & Mine No. 3) and to prove workable coal seam ranging from few inches to 20 inches. The coal has been extracted by use of hand piks for handling coal from faces to the surface, We have installed diesel driven direct haulage at the mines.

Roof Support and Lighting.

Seasonal wood is used for supporting the roof and sides. Three piece set of timber are suitable in main entries, side galleries and seal faces, timber chokes is also employed at five feet interval. The haulage road is lightened with the help of electric lights installed at a distance of every 50 feet.

Ventilation.

Electric driven exhaust fans of 30000 cubic feet per minute capacity have been installed for the ventilation of mines. The air in the mines is controlled to be distributed with the help of doors, walls and bracketing etc.

Transport and Water Supply.

For supply of stores and timber used in mines we are maintaining the one Bedford Truck and one for water tanker sufficient quantity of drinking water is supplied to worker from dulmial with the help of water tanker.

Buildings.

We have constructed sufficient numbers of quarters for the accommodation of staff and workers in addition of this we have constructed one labour barrack in this area.

Medical Facilities.

One room is maintained as a dispensary under a qualified dispenser. Those who cannot be provided medical aid by the dispenser we are provided at mines labour welfare hospital Choa Saiden Shah.

Technical Person Employed.

All prospecting development and mining operation have been supervised by technical staff, Mining Engineer, Surveyor and Mine Sirdars.

Status of the mines in the leased area.

Operative Mines:

Sr. No.	Mine No.	H.L (ft)	L.L (ft)	Proved/ un proved	Remarks
1.	Mine No. 1	1397'	1804'	Proved	Work in progress
2.	Mine No. 2	1948'	2100'	-do-	-do-
3.	Mine No. 3	1023'	1092'	-do-	-do-
4.	Mine No. 4	836'	1066'	-do-	-do-

Closed Mines:

NIL

Phase Program.

Phase No. 1

1. Drivage of low level of Mine No. 2 for 25 m.
2. Drivage of high level of Mine No. 2 for 25 m.
3. Opening of three new galleries towards left of low level of Mine No. 3.

4. Further drivage of low level of Mine No. 3 for 25 m.
5. Further drivage of high level of Mine No. 3 for 25 m.
6. Purchase of new rail lines.
7. Purchase of one new drill machine.

Phase No. 2

1. Further Drivage of low level of Mine No. 2 for 25 m.
2. Further Drivage of high level of Mine No. 2 for 25 m.
3. A new Haulage mine will be started.
4. Purchase of one new compressor for new mine.
5. Further drivage of low level of Mine No. 3 for 25 m.
6. Construction of one new labour quarter.

Phase No. 3

1. Development of new proposed mine with rail track.
2. Widening of low level of Mine No. 2.
3. Further drivage of low level of Mine No. 2 upto 25 m.
4. Further drivage of high level of Mine No. 2.
5. Further drivage of low level of Mine No. 3 upto 25 m.
6. Further drivage of HIGH level of Mine No. 3 upto 25 m.
7. Opening of two galleries towards right of low level of Mine No.

Phase No. 4

1. Further drivage of low level of Mine No. 2 upto 25 m.
2. Further drivage of high level of Mine No. 2 upto 25 m.
3. Further development of new proposed mine with haulage track.
4. Further drivage of low level of Mine No. 3 upto 25 m.
5. Further drivage of high level of Mine No. 3 upto 25 m.
6. A big water tank will also be constructed for both mines labour.

Phase No. 5

1. Further development of low level of Mine No. 2 upto 25 m.
2. Further drivage of high level of Mine No. 2 upto 25 m.
3. Further development of new proposed mine with haulage track.
4. Further drivage of low level of Mine No. 3.
5. Further drivage of high level of Mine No. 3 upto 25 m.
6. Purchase of one generator of 100KVA for electricity.

Machinery and Equipment's.

We will undertake all out efforts to run the mining project using modern machinery and equipment's. The following mining machinery is available at site.

1. Compressor along with accessories	02.
2. Haulage with accessories	07.
3. Engine with Generators	04.
4. Drill Machine	04.
5. Water pumps	02.
6. Exhaust Fan	04.
7. Mine Tubs	09.

Technical personals employed.

Highly qualified and experienced personal have already been engaged for supervision of mining operation. Subject area being already operational specific requisite number of supervisory and junior cadre has been engaged. Detailed of available technical personal and other manpower is as under:-

1. Mining Engineer Consultant	01.
2. Surveyor	01.
3. Haulage Operator	07.
4. Qualified Mine Sirdar	04
5. Electrician	04.

- | | |
|---------------------------|-----|
| 6. Account clerk / Munshi | 04. |
| 7. Chowkidar / Waterman | 01. |

Environmental Impacts and Mitigating Measures for Coal Mining.

1. Underground mining has generally no impact on the surface on air quality, noise pollution.
2. On the surface machinery use is of the following types:-
 - a. Compressor driven by Diesel Engine or Electric motor.
 - b. Haulage Diesel Engine or Electric motor is used for Hauling tubs.
 - c. Generator driven by diesel engine for electric supply or WAPDA electrics supply. The engine driven have noise pollution but it does not exceed PEQS. The mitigating measures suggested are that noise pollution is controlled and does not exceed the PEQS noise standard.

The Underground Water

The underground coal mine water is categorized of the two qualities:-

- a. Pure Drinking Water
- b. Contaminated water in the coal mining having mild acidic particles and sulphur particles carbon ashes shales. Usually the underground water is confronted at the shallow depths up to 120 ft. This water resource is used for the drinking water and for bathing purpose for the workers and has 'NO' Environmental Impact. The contaminated water is stored in the open to sky sumps and the water is dried with the sun heat and it evaporates and seeps into the cracks of the hills. The contaminated water which is mineralized is of small quantity. It has been suggested that this contaminated water should not be thrown into the NALLAs or water channels. The sumps be

made to collect the water and water be dried into the sumps. The water collected in the sumps evaporates and seeps into the geological system in which it is naturally filtered through the sand stone into the sub soil.

c. **Transporting Vehicles.**

All transporting vehicles be monitored regularly to ensure that engines are in sound working condition and are not emitting smoke. The engine should be kept properly tuned and maintained in good working condition so that exhaust emission are minimized.

d. **Under Ground Safety of the Workers.**

The underground work and safety of the workers at the mines is the jobs of the office of the Chief Inspector of Mines. The implementation of the Mines Act, 1923 and " The Coal Mines Regulation 1926". The consolidated Mines Rules, 1952 and the Coal Mines Pithead Bath Rules, 1946 govern the coal mines. The regular inspection are conducted by the Inspector of the Mines to keep the working conditions safe in the mines. The underground machinery and tools used for excavation of coal are enlisted below:-

- (1) The coal cutter use coal cutting picks manual.
- (2) The electric coal picks and hammer picks.
- (3) The pneumatic coal picks and hammer picks.
- (4) The pneumatic drill machines.
- (5) The de-watering of mines electric driven motor-pumps.

- (6) The electric power for the above mentioned machines and tools.

The machinery and tools used are regularly checked and maintained by qualified staff.

The managers appointed are certified person by the Chief Inspector of Mines who are educated in the safety of mines and safety of the workers.

Conclusion

The coal mining project being an underground working beneath the surface is an environmental friendly project. The surface used for the mine entries beneath the surface is of two inclines size width 7 feet and height 6 feet (7'ft x 6'ft). The two Haulage rooms, one Generator room and Labour Quarters for forty eight workers a barrack type construction is built at the mine site. There is a platform for piling of mine debris and stacking of coal. The coal stacked is being immediately transported to the consumer. The all-weather road is constructed and is attached to the metelled road to the mine for transportation of material and coal.

The drinking water supplied to the workers at the mine site is stored in the pre-fabricated water tanks. The pithead baths are constructed for the workers. The total land used is Three Acres maximum for a mine working.

Thus, The Environmental Impact is very negative and mining of coal from beneath the surface is recommended for the mining project.

SCHEDULE IV

[See Regulation 8(2)(a)]

Application Form

1.	Name & Address of Proponent	Karam Sons (Pvt) Ltd. House No. 5, Street No. 19, Sector F-6/2, Islamabad. Project Office: Choa Saiden Shah, District Chakwal.	Phone No.0346-5495555 Project Office: 0342-5035301	
2.	Description of Project	Coal Mining (Excavation and sale of coal).		
3.	Location of Project	Lease No. ML-CKL-I-Coal(137) near village Katas, , Tehsil Choa Saiden Shah, District Chakwal. ML-CKL-I-Coal (209) near village Dhariaala, Tehsil Choa Saiden Shah, District Chakwal.		
4.	Objective of Project	To produce & sell coal		
5.	IEE/EIA attached?	EIA report Attached		
6.	Have alternative sites been considered and report in IEE/EIA?	No, We can only work within the lease area.		
7.	Existing Land use	Lease No. ML-CKL-I-Coal(137) 616.43 acres, ML-CKL-I-Coal (209) 453.63 acres granted by the Director small scale mining / licensing authority,	Land Requirement	No

(209)

REVISED PLAN SHOWING THE
 AREA GRANTED TO M/S. KARANI SONS
 (PVT) LTD. FOR MINING LEASE FOR
 COAL NEAR DHARIALA DISTRICT CHAKWAL.

NO. MIL. CKL - I. COAL (209)

POINTS	EASTING	NORTHING.
A	34,04200 yds	10,43840 yds.
B	34,04200 "	10,45140 "
C	34,03000 "	10,45140 "
D	34,02515.38 "	10,45159.38 "
E	34,02514.00 "	10,43840.00 "
TOTAL AREA 453.63 ACRES		

SHEET NO. 43-D/13

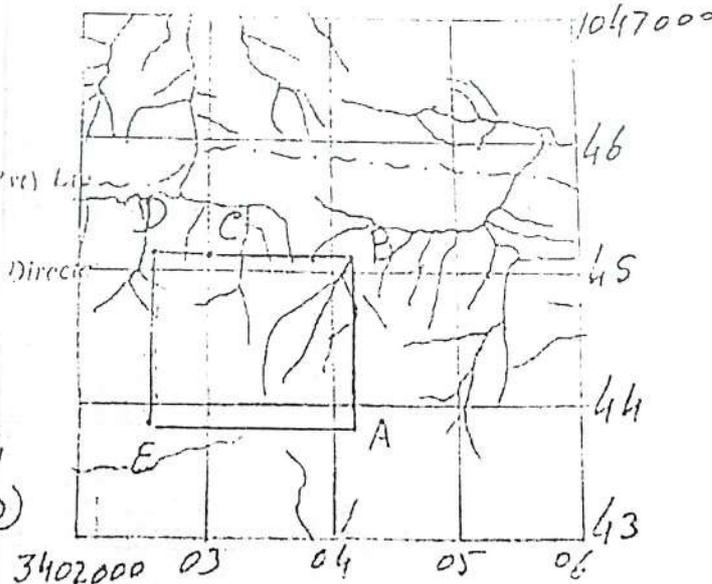
SCALE = 1" = 5000'

Accepted

M. Hamid

2-4-11

M/S. Karani Sons (Pvt) Ltd



PREPARED BY:

M. Hamid
 28/3/2011

(MUHAMMAD HAMID)
 DRAFTSMAN

M. A. R. S. S.
 Survey & Drawing Officer
 Director General of Mines & Minerals
 29/3/11

(137)

Registered.

Directorate General of Mines & Minerals,
Punjab, Lahore.

Dated Lahore, the 22.11.2016.

Notification:-

No. DGM&M/ML.CKL.I.Coal (137)/16:- In pursuance of Rule-112 of the Punjab Mining Concession Rules-2002, it is hereby notified that the Licensing Authority has been pleased to renew the mining lease for Coal over an area of 616.43 acres near Katas in District Chakwal granted to M/s Karam Sons (Pvt) Ltd., 63/1-B, Civil Line Railway Road, Sargodha for a period of 30 years w.e.f. 08.08.2014 to 07.08.2034 under Rule-134 of the Punjab Mining Concession Rules-2002.

Director Small Mines Assistance/Titles,
Punjab, Lahore.

To

The Manager (Works),
Government of the Punjab,
Printing Press, Lahore with the request
to publish this Notification in the Punjab
Gazette.

Director Small Mines Assistance/Titles,
Punjab, Lahore.

Copy to:-

1. M/s Karam Sons (Pvt) Ltd., 63/1-B, Civil Line Railway Road, Sargodha.
2. The Chief Inspector of Mines, 153-Shahjamal Colony, Lahore.
3. The District Coordination Officer Chakwal.
4. The Deputy Director (SSM), District Complex Ghaziabad, Chakwal.
5. The Chief Statistical Officer, Federal Bureau of Statistics Energy & Mining Statistics Section Plot No. 17-G/8 (Markaz), Islamabad.
6. Manager GIS, Hqr's Office, Lahore.
7. Mr. Zaheer Abbas (Assistant Director), Hqr's Office, Lahore.
8. The Account branch.
9. P.A to Director General Mines & Minerals, Punjab, Lahore.
10. Director Information Division, Mines & Minerals, Punjab, Lahore.
11. The Misc. file.

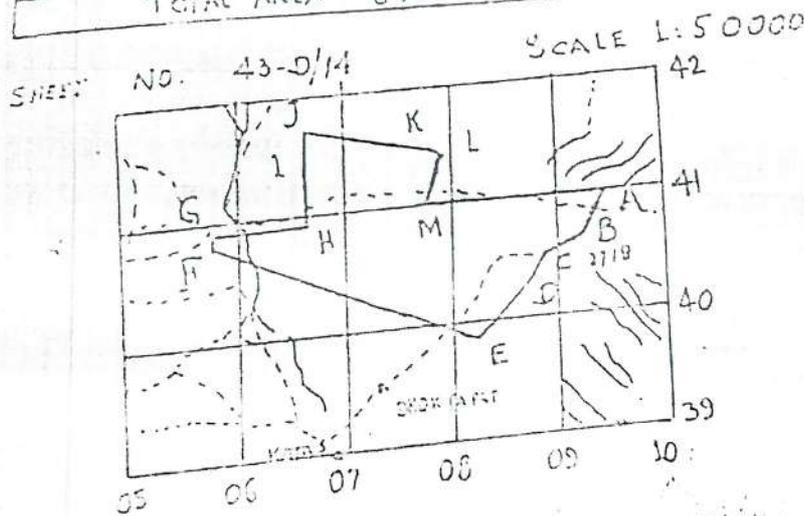

Assistant Director (Mines & Minerals)
For Director Small Mines Assistance / Titles
Punjab, Lahore.

SHOWING THE AREA GRANTED TO M/S
 AM SONS LTD. FOR MINING LEASE OF COAL
 IN KATAS DISTT. CHAKWAL.

FILE NO. ML-CKL-I-Coal(137)

D A T A

POINTS	EASTINGS (YARDS)	NORTHINGS (YARDS)
A	09470	41000
B	09250	40640
C	08890	40510
D	08740	40270
E	08230	39850
F	05770	40840
G	05770	40910
H	06650	40910
I	06650	41460
J	06670	41700
K	07830	41460
L	07910	41441.42
M	07786	40993.39
TOTAL AREA = 616.43 ACRES		



APPROVED BY: *[Signature]*
 OFFICE: *[Signature]*
 DISTRICT: *[Signature]*
 CHAKWAL