KHYBER PAKHTUNKHWA OIL & GAS COMPANY LIMITED

(KPOGCL)

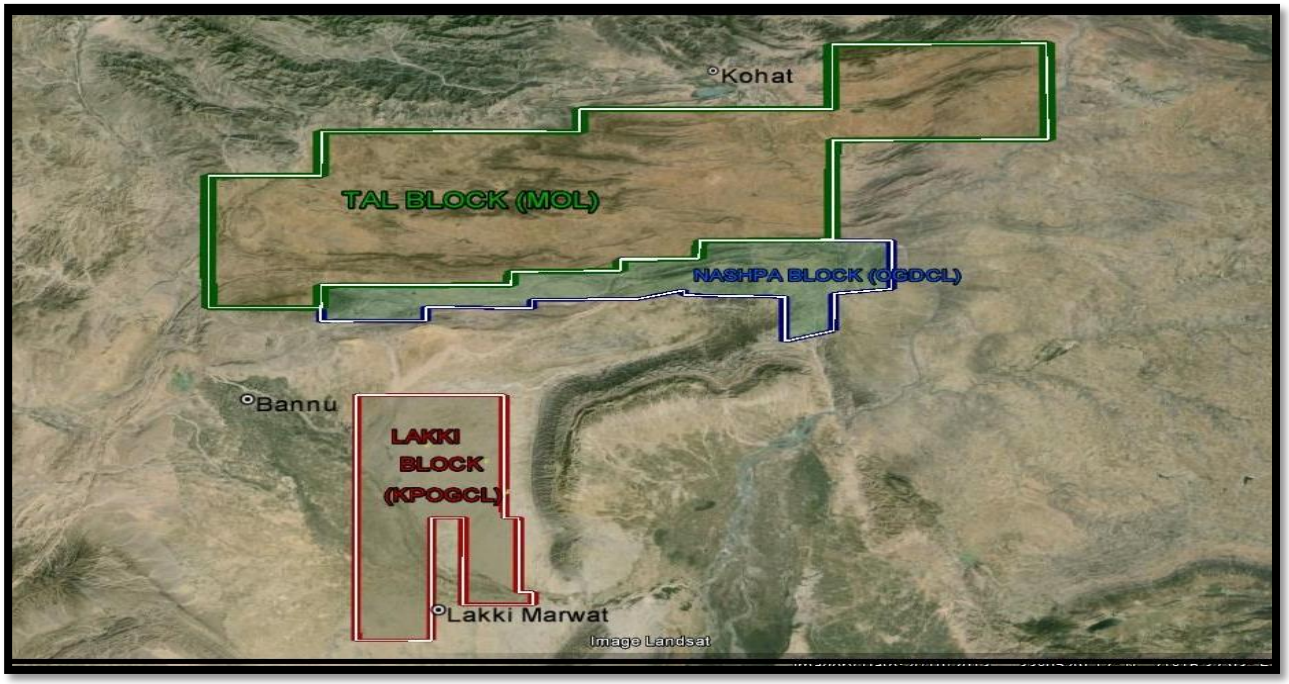
(KP Government Fully Owned & Provincial Holding Company)

KPOGCL IS SEEKING EXPRESSIONS OF INTEREST FROM NATIONAL/ INTERNATIONAL E&P COMPANIES INTERESTED IN PARTICIPATING AS JOINT VENTURE PARTNERS WITH KPOGCL

IN

LAKKI EXPLORATION BLOCK (3270-9)

KHYBER PAKHTUNKHWA, PAKISTAN



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Brief on Lakki Block

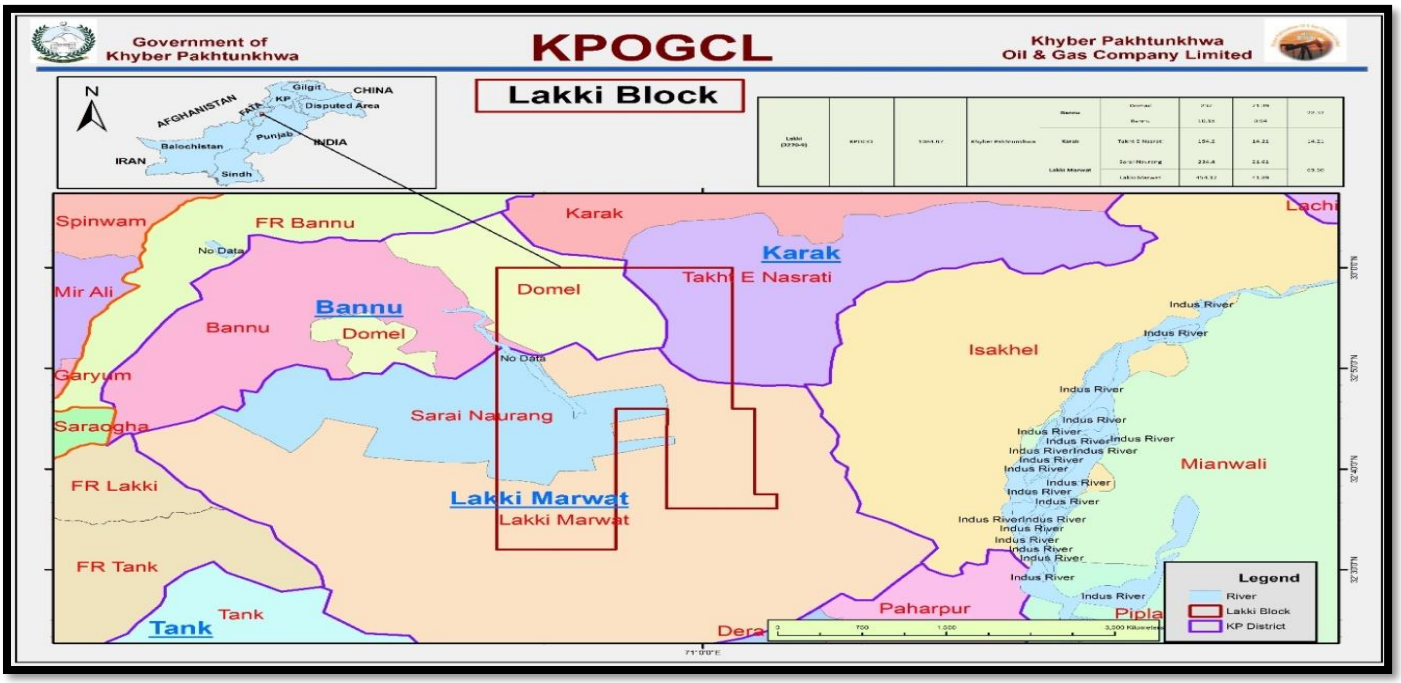
Kohat-Bannu Basin has proven and potentially viable Petroleum plays, ranging in age from Infra-Cambrian to Miocene rocks. Lakki Exploration Block (3270-9) having an area of 1084.87 Sq. km is located in Lakki Marwat (63.48%), Karak (14.33%) and Bannu (22.19%) districts of Khyber Pakhtunkhwa Province of Pakistan. The Block falls in Prospective Zone-I. Based on surrounding discoveries in Kohat-Bannu basin i.e. Chanda, Mela, Nashpa, Makori, Maramzai and Mamikhel, Lakki Block is considered to be prospective.

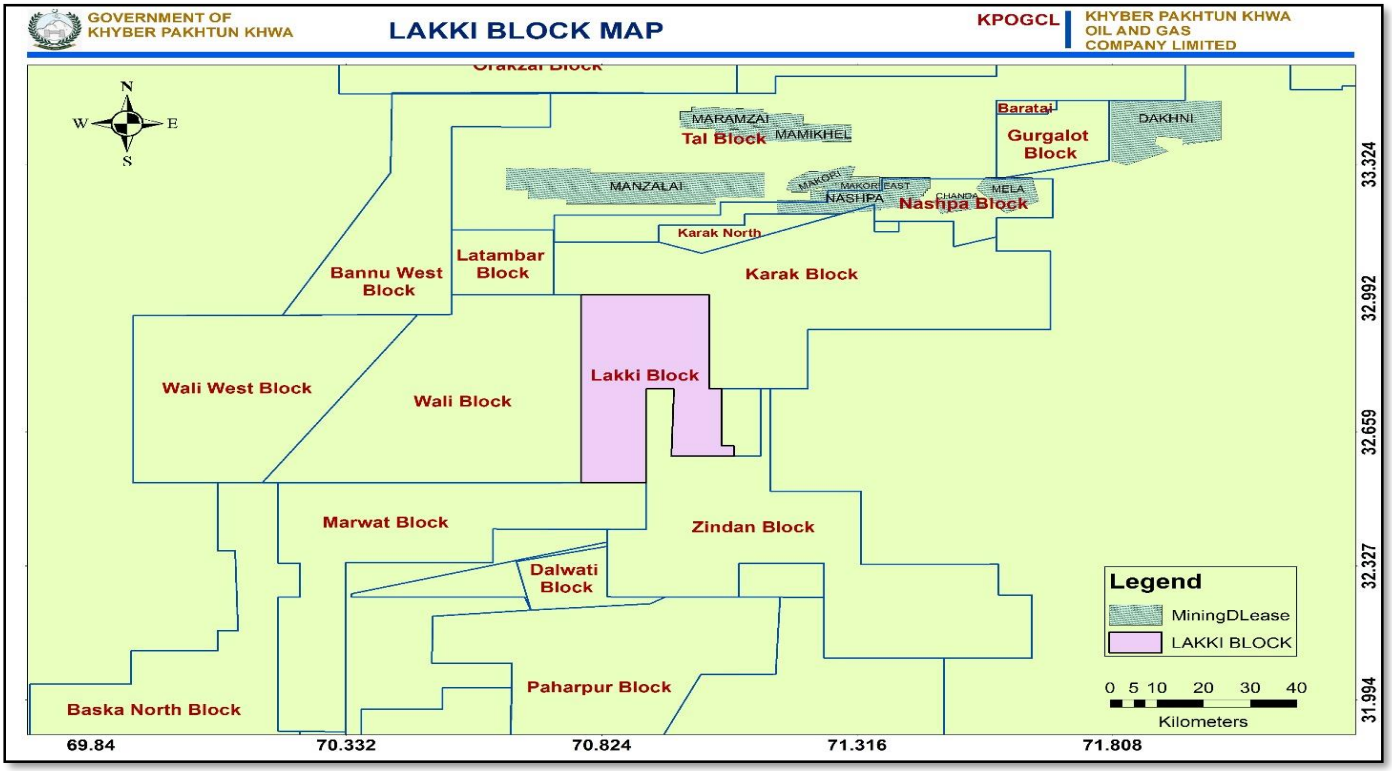
The Block is located about 200 Kilometers South west of Peshawar and 300 km southwest of Islamabad. It is easily approachable by a network of highways and concrete roads from District Peshawar, Bannu, Karak and Lakki Marwat.

Investment Opportunity in Lakki Block

KPOGCL is looking forward to farm out its 49% working interest to leading E&P Companies to facilitate KPOGCL regarding Geological, Geophysical and Engineering studies along with initial 1-2 Exploratory Wells Drilling program and further on production set-up. Work Program has already been started since September 2016. Capex spending for this program is estimated at USD$55 which includes the studies along with the initial well.

Location Map of Lakki Block





Silent Features of Lakki Block

- Situated in already proven Kohat-Bannu Basins, which is currently production 55 % of overall Pakistan's Production of Oil;
- Construction of the first refinery is under planning in Kohat Area which will reduce the cost of transportation and time to market the crude oil which would pave path to decrease in per barrel cost of production as currently the major 50% of Opex for E&P companies is transportation; further more trucking costs are estimated at $2.75 per barrel while oil treatment and processing is estimated at $2.08 per barrel. Per Barrel cost considering Opex Vs Production of other E&P Companies operating is $6 per BOE;
- Overall drilling success ratio is 1:2:8 in this region;
- IRR is estimated in the vicinity of 35%-40% considering reservoir reserves;
- KPOGCL offers full proof security with other necessary security clearances for expats working in the province along with all logistics support;
- KPOGCL is fully committed to facilitate in Exploration & Production activities in shape of technical and Non-Technical.

Economic Modeling & Financial Indicators

The Lakki Block project economics has been calculated on a 15 year projected time frame, which is a norm for Khyber Pakhtunkhwa and Potwar basins. The IRR over this period is expected to be 29.4%, whereas the NPV is US$ 25 million at a discount rate of 15%. Key assumptions are taken for arriving at economic viability are as follows: This economic calculation based on a sustained rate from day 1 till the end of 15 years is not in line with the production of any field.

- Petroleum Policy 2012 will be in vogue.
- P10 (i.e. 10% Probability of Success) Oil production of 4,000 Barrels Per Day but only 1/3 of the production (i.e. 1400 BPD) has been taken for economic analysis. Lowered production is assumed to be on a very conservative side.
- P10 Gas production of 25 MMCFD but only 1/3 of production (8.75 mmcfd) is taken for economic analysis.
- LPG (Liquefied Petroleum Gas or Cylinder gas) production not included in the economic analysis. Although Khyber Pakhtunkhwa Oil and Gas is very rich is Pentane/Butane (LPG)
- Success ratio of 35% assumed.

Lakki Block Project Economics for 15 years	US $ Million
Revenue	439
Gas	145
Oil	294
CAPEX	55
OPEX	57
Royalty	55
Tax	131
Total Expenses	297
Net Cash Flow	142
Present Value @ 10%	45
Present Value @ 12.5%	33
Present Value @ 15%	25
IRR	29.4%
NPV	25

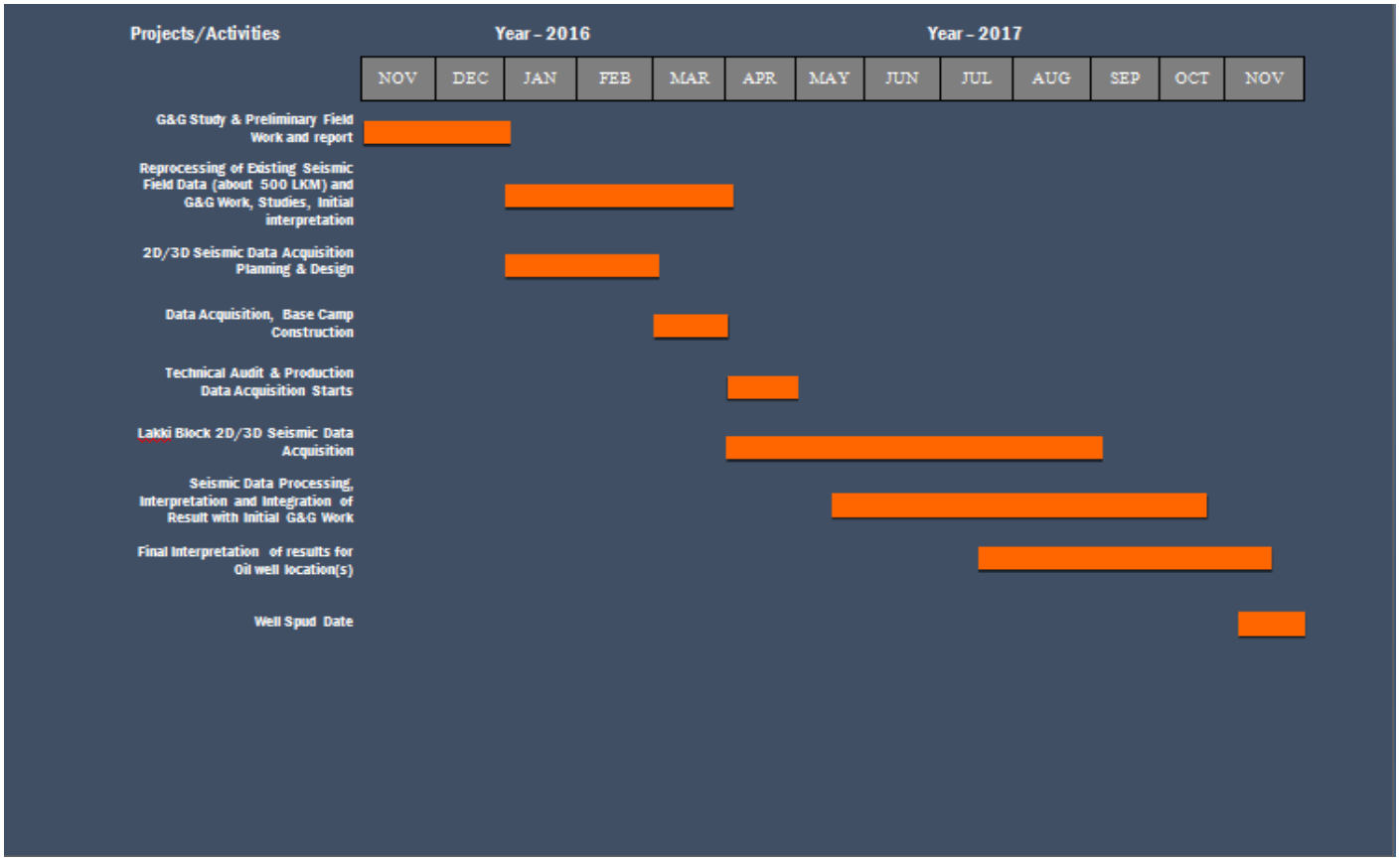
~ Current indicators does not include LPG's Production

Oil prices are assumed at $40/Barrel and Gas price $3/MMBTU for the economic analysis, which are highly conservative. Although KPOGCL has taken low oil prices but the prices should rise by 2018. At one time the price of oil was over $ 100 per barrel and gas prices were $6.8 per MMBTU.

Project Highlights

- Oil and Gas producing fields nearby
- Block area: 1084.87 Sq. km
- Capital Expenses $ 55 Million (3 years)
- Surface Facilities Cost $ 10 Million (4th year @ production start)
- Expected Oil: 1400/ 4000 BBL/D (35% taken for IRR/NPV)
- Expected Gas: 09/ 25 MMSCFD (35% taken for IRR/NPV)
- Expected LPG: 100 Tons/D (not included in economics)
- IRR: 29.4% | NPV: MM US$ 25 Million @ 15% Discount Rate
- E&P life-cycle ~15 Years

Work Plan for Lakki Block



Petroleum System of the Block

Since the Lakki Block is adjacent to Tal and Nashpa Blocks of MOL and OGDCL which are highly prolific (productive) blocks and that is further substantiated by the occurrence of active Oil (Kundal) and Gas (Wandazalo Gas Seep in Bitani Range) seepages around the block. Therefore, there is high probability of significant discoveries in the Lakki Block. KPOGCL expects both oil & gas discoveries from this block.

The Petroleum System of Lakki Block as shown in Figure: 1 is based on Kundi X-1 & Chonai X-1 drilled by PPL in 1990 & Petro Canada in 1995 respectively, adjacent to the Lakki Block and other pertinent information gathered from LMKR Data Base working as data repository for Director General Petroleum Concession DGPC and LMKR. The components of Petroleum System as per Oil industry practice are as follows:

- **Source Rocks**

  Primary Source: Patala & Chichali and Salt Range Formations, Secondary/ Potential. Source: Jatta Gypsum.

- **Reservoir Rocks**

  Reservoirs rocks include Lockhart, Datta, Lumshiwal and Chichali Formation as primary reservoirs while Tobra and Khewra Sandstone are considered as secondary reservoirs. In this area these petroleum systems are already producing Oil & Gas. All 4 primary reservoir rocks are promising systems and have delivered oil & gas in Khyber Pakhtunkhwa and Potwar. This has increased confidence level of the KPOGCL professionals and BOD, which also comprises of geologists and experienced professionals.

- **Seal Rocks**

  Seal rocks; include Bahadur Khel salt and intra-formational shale.

- **Traps**

  Existence of structural traps

An Effective petroleum system as proven by several oil and Gas seepages and discoveries has increased overall confidence level of the professionals. Recent (August 2016), geological mapping has further enhanced the confidence level of KPOGCL. Negotiation with potential JV partners is being undertaken for Farming out ca 30 percent working interest in the Block.

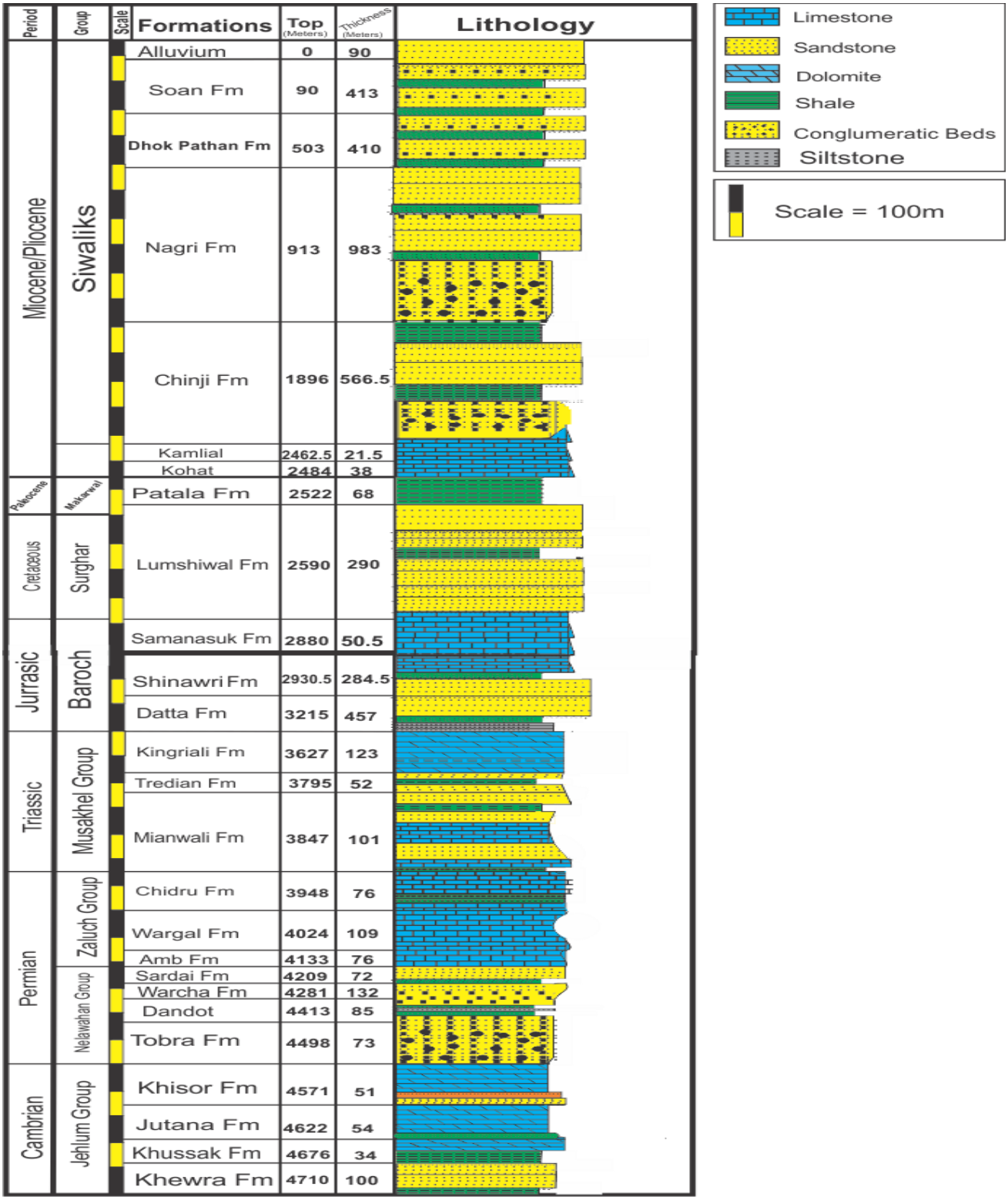
Lakki Block Petroleum System

Rock	0.50 Encouraging	0.60 Very Encouraging	0.70 Favorable	0.80 Very Favorable
Source Rock		x		
Reservoir Rock				x
Seal Rock		x		
Trap Rock	x			

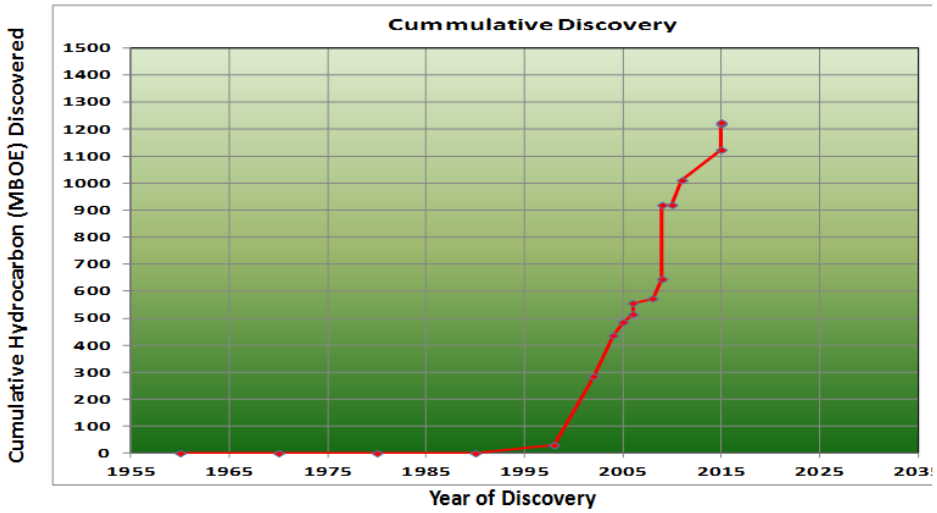
$$\boldsymbol{Probability\ of\ Success\ (POS)\ =\ 0.6\ x\ 0.8\ x\ 0.6\ x\ 0.5\ =\ 14.4\ \%}$$

Based on the information gathered during Geological Fieldwork and data review a probability Of Success has been estimated to be over 14%

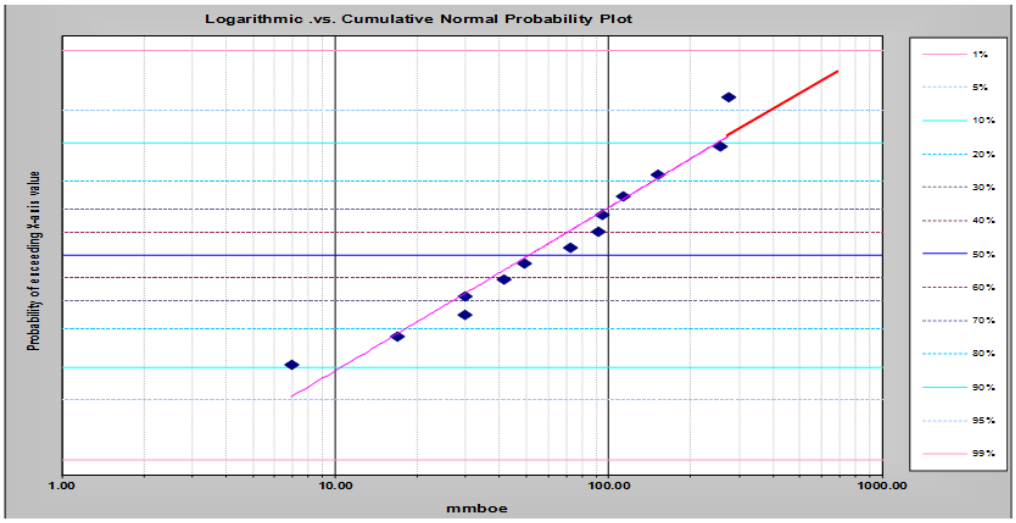
Generalized Stratigraphic Colum



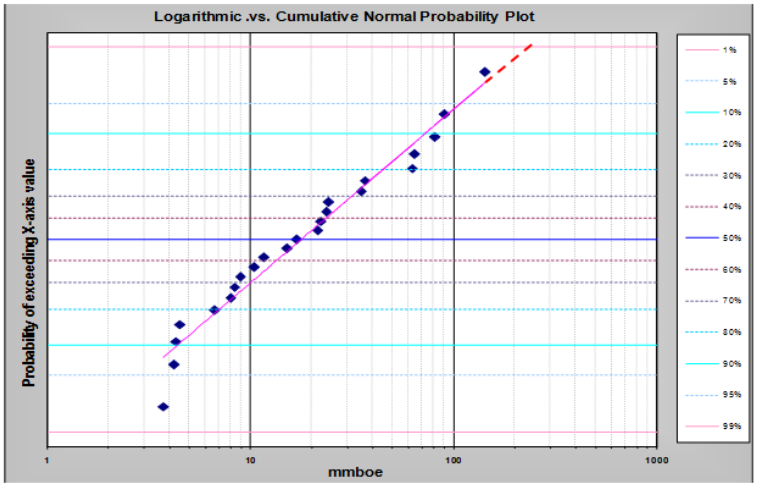
Trans Indus Basin, Creaming Curve by Year, Cumulative discovered H / C



TRI Basin, Field Size Distribution plot vs probabilities of finding expected field size



Potwar Basin, Field Size Distribution plot vs probabilities of finding expected field size



Policy Focus

Investment Protection & Mechanism in place to ensure consistency

The Government of Pakistan has adopted consistent Policies & Rules, aimed at promoting foreign investment in upstream petroleum sector, with the view to exploit indigenous hydrocarbon resources in an optimal manner with lucrative incentives for the investors as specified in the following Petroleum Policies.:

- Pakistan Petroleum Policy 1994 to 2012
- Pakistan Onshore Petroleum Exploration & Production Rules 2009 & 2013.

Foreign investment is fully protected under foreign investment protection law of 1976 passed by the Parliament, under which the Government guarantees and full safeguard to foreign investments in Pakistan. The Governments have been providing policy package of liberal incentives to enhance exploration activities in the country, the latest of which was introduced in 2012.

Policy Incentives offered by Government of Pakistan

The country has been zoned based on their relative prospectively and Geological risk. Onshore areas are sub-divided in three zones; ZONE-I high risk - high cost areas, ZONE-II medium risk - high to medium cost areas and ZONE-III low risk - low cost areas.

Moreover, the following policies are in place to incentivize the investors in special circumstances.

- Low BTU Gas Pricing Policy 2012
- Tight Gas (Exploration & Production) Policy 2011
- Marginal/ Stranded Gas Fields: Gas Pricing & Criteria and Guidelines 2013

Facilitation offered by Government of Khyber Pakhtunkhwa via KPOGCL

- Coordinate and Execute Concession and JV Agreements
- Provision of Petroleum Technical Data (access to Data Rooms)
- Office setup and Manning in Pakistan
- Hire G&G, Seismic and Drilling Rig Services

Security

Owing to the needs of the province the law and order situation in the province has been much improved. Confidence level has increased for National and International Oil companies thus a number of E&P companies are now working in Khyber Pakhtunkhwa due to relentless efforts of both Federal and Provincial Governments. The local and foreign investors are enjoying safe and secure law & order environment, 07 Seismic crews and 10 rigs are presently working in Khyber Pakhtunkhwa. Expats are frequently visiting KPK, wherein they work and supervise their exploration and production operations. Security & logistics coordination is one of the mandates of KPOGCL. KPOGCL help operations in once dormant Exploration Blocks like Kohat, Marwat, Orakzai, Tirah, Paharpur, Baska North, Latambar, Pezu, Kulachi, Karak North, Baratai & Peshawar etc. these blocks are now active.

The following major steps are taken to ensure adequate security

Energy Apex Committee headed by Chief Minister Government of Khyber Pakhtunkhwa;

Energy Security Steering Committee (ESSC) headed by Home Secretary;

Process in place for Security Clearance from Ministry of Interior, Board of Investment, Home Department and Security Risk Analysis;

Focal Person in 11 Corps HQ;

Process for NOCs to KPOGCL from 11 Corps;

1. Quarterly meeting with 11 Corps by KPOGCL;
2. Provide security coverage to Foreigners and local official of the E & P companies operating in the province.

Management Team

Raziuddin (Razi)
Chief Executive Officer (CEO)

Masters in Engineering from, Michigan and MBA from New York, USA, with +45-year experience in Upstream, Midstream and Downstream Oil & Gas Industry nationally & internationally. He held top management positions in large public & private energy sector companies. He has +15 years of experience as CEO/MD/Advisor in major/large energy companies. He worked as Advisor- Energy & Power- Orion Group Bangladesh. He Also worked as MD/CEO NLC Energy, OGDCL and Attock Refinery, Advisor- Royal Commission, Chief Energy Wing.

- Chairman, Vision-2025 Government of Pakistan Working Group Energy
- Chairman, 11th 5-Year Plan, Government of Pakistan Working Group Energy

Synopsis of his experiences as follows:

- Crisis, Change & Contingency Management.
- National Policy Development & Budgeting, National Energy Security Plan & Vision.
- Financial engineering/re-structuring, structuring, Financial Close, Privatization & Deregulation, Energy Economics, Pricing.
- Oil & Gas Exploration and Production, Crude Oil Refinery, Petroleum Products & Oil Marketing and Trading, Petroleum Products & Oil Logistics & Storage.
- Joint Venture formations, Interaction/hired international legal advisors, financial advisors and insurance advisors.
- Interaction/hired international PMC and Owners Engineers, Project Management, EPC LSTK of mega projects on fast track.
- International Investment Induction (Debt & Equity).

Also Worked as International Energy Consultant

- Exploration & Production (on shore, off-shore, swamps).
- Oil Refining (BMRE, Greenfield), Petroleum products marketing, IPPs.
- LNG Terminal with Power Plant, Mega-Projects development.

- National policies/studies/Plans.

Companies in Pakistan, Egypt, Saudi Arabia, Nigeria, UK & UAE. Worked with OGDCL, LMKR, Landmark Graphics, Hampson & Russell, TGS/Guide, Spectrum Geo UK, Fecto-LPEB/CNPC China, POL Pakistan and KJO Saudi Arabia for Project Management, seismic services setup/operations. Key Expertise include: Seismic Data Processing, Data Acquisition, Data Management, Interpretation, E&P Blocks Evaluations, Prospect Generation, Advisory role, QA & QC, etc. He is an accomplished team player with successful proven track record at offices/ fields and at remote projects while managing multi-tasking teams. Help almost all E&P companies in Pakistan for many success wells.

Javed Ghafoor

GM Finance

FCA (Pak), CPFA (UK) and CFA (USA) Finalist.
+21 years' finance and operations experience as overall. **+**11 years as senior management positions and **+**7 years in Oil & Gas Sector.
Results oriented, Finance Executive with global experience as CFO / Board Director / Director Finance / Procurement in Energy, Investment management, Telecom and media in diverse business environments in over 15 countries (Europe, Asia and Africa). His field of competencies are; Financial Reporting/Accounting, Business Planning & Budgeting; Strategic Planning; Treasury & Funds management; Procurement; Supply chain; Cost Optimization; Business Process Re -Engineering; Valuation; Taxation. Software skills: SAP, Oracle, Hyperion, Sun Accounts, MS Excel, Microsoft Great Plains, FRX.

Muhammad Haneef

GM Petroserve

Experienced Geophysicist

(Master Degree in Geophysics, from Quaid e Azam University Islamabad Pakistan-1989, Professional Certificate in Computer Application – 1989, and various on job trainings/workshops for 25-Years of versatile experience in Oil & Gas Exploration, Services/ Operations. +15-Year Experience as key management positions. Setup, Supervised and Worked on several oil exploration Services Projects for local and International E& P.

NOUMAN AKBAR
Deputy General Manager HR, Marketing & Corporate Affairs

MBA and Gold Medalist from International Islamic University Islamabad 2004. +12 Years of international operational oriented, oil and gas professional. Worked at
OiLSERV and large companies including Weatherford, Atkins and Sanjel. Specialize in strategic and corporate planning, human resource management, system development,

management reporting and analysis, due diligence, audit, safety, quality & change management, compliance lead and certified ISO, OHSAS and API leader. Partner with functional leaders (VPs) / CEOs to successfully drive multiple support functions, consultancy assignments and projects resulting in improved business growth, customer satisfaction and profitability.

Nasir Riaz (CSOT)
Geologist

(Master degree in Geology from Azad Jammu Kashmir) and (MS in Energy Management) from COMSAT University Islamabad, Pakistan.

+15 years' experience in upstream Oil & Gas Industry nationally & internationally.
He worked as Sr. Geologist with Research Exploration Group in HDIP and Director Marketing with leading British Mining Company in Indonesia. He involved in different Basin evaluation projects of HDIP, Hydrocarbon Development Institute of Pakistan. He has good experience in company polices and corporate affairs

Amjad Ali
Manager Exploration – (PG)

Geologist (Master degree in Geology from University of Peshawar, Pakistan -1998). +16-year experience oil & gas industry and worked for RDC International Islamabad. Mineral Testing Laboratory, Nativus Resources Islamabad, Petro-services Islamabad, Ministry of Petroleum & Natural Resources, Islamabad, Integrated Petroleum Consultant Islamabad. He had been team leader of a group of G & G people while working for PAIGE in Pashin Basin. He also worked as Operations / Wellsite geologist for Couple of years with OGDCL. He is successful negotaiator regarding Oil and Gas Exploration Business. Well experienced in Government affairs and concession management. He is well aware of HSE related matters in field operations.

Hamid Hussain
(Manager Field Geology) - Geologist

(Master degree in Geology from University of Peshawar, Pakistan- 2002) +14-year experience in upstream Oil & Gas Industry (Yemen, Iraq & UAE). He worked in leading Oil & Gas industry companies.

CONTACT US

For further information, please contact:

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