

Target Exploration

Energy Geosciences Research & Development



Curriculum Vitae of

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Summary

Dr. Muhammad W. Ibrahim, PhD. is the Director and R&D Manager of [Target Exploration Consultants](#), he is in-charge of hydrocarbon reservoir studies, prospects generation, basin analysis, concessions ranking, new-ventures evaluation, and renewable GeoEnergy research. The Petroleum Exploration and Fields Development experience of Dr. Ibrahim extends from the Proterozoic Petroleum Systems of the Infra-Cambrian Salt Basins of Oman, through the Inverted Intra-Cratonic and Zagros-Taurus Foothill Basins of the Arabian Plate and up to the Intra-Cratonic and Rift Basins of Africa.

Background

Received his *BSc* in Geology from the University of Baghdad, and worked for two years as Well Logging Geologist at Mishraq Sulphur Field and Field Geologist at the Iraqi Geological Survey on Taurus-Zagros Mountains and the Ga'ara Depression at the Western Desert of Iraq (Title page photo shows Muhammad flanked by two team members of the Iraqi Geological Survey in the Ga'ara Area).

Muhammad left Iraq to attend the Petroleum Geology M.Sc. Course of the Royal School of Mines at the Imperial College, University of London on an Iraqi MoO-IPC scholarship. The course was delivered by an exceptionally brilliant group of Middle East Geoscientists at the peak of their professional careers; such as Douglas Sherman, Graham Evans, Richard Selley and Professor Dan Gill (who later supervised Dr. Ibrahim's PhD research, to be externally examined by the eminent Middle East Geologist Harold V. Dunnington, D.Sc.).

Soon after defending his Ph.D. Thesis Dr. Ibrahim joined the Faculty of Earth Sciences (FES) of King Abdul-Aziz University, in Jeddah-Saudi Arabia as Head of Department of Petroleum Geology, and left it after 2 academic years to Kuwait Institute for Scientific Research (KISR) as Consultant Geologist.

Craving to apply his academic research in an operating oil company, Dr Ibrahim responded to an advert by Mobil Oil UK, and joined the Exploration Department of Mobil Oil Libya as Staff Geologist in 1982, where he integrated his research with the proven practices of Mobil Oil. His flair for trouble shooting, prospects generation and discovering [new oil in old fields](#) got him promoted in 1986 to "Acting Development Geology Group Superintendent" of the German Veba Oel Operations (which replaced Mobil Oil as operator) before returning to London after seven prolific years to establish Target Exploration Consultants in 1990.

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Experience I

Dr Ibrahim worked fulltime at several oil companies and academic institutes, including:

1. Faculty of Earth Sciences (FES), King Abdul-Aziz University, Jeddah, Saudi Arabia: *Assistant Professor and Head of Department of Petroleum Geology.*
 - I. *Established the department, hired staff and lectured on Petroleum Geology.*
 - II. *Led a small research group in a study of the structural evolution of [Harmaliyah Oil Field](#).*
2. Iraqi Geological Survey, Baghdad, Iraq: *Field Geologist:*
 - I. *Geological survey of Amadia, North Iraq and Gaa'ra Depression in the Western Desert of Iraq.*
3. Iraqi Minerals Exploration Company, Baghdad, Iraq: *Geophysical Well Logging Geologist, Mishraq Sulphur Field, Mishraq; Mosul, Iraq.*
4. Korea National Oil Corporation (ME), Dubai, UAE: *Exploration Geology Advisor, Exploration Team:*
 - I. *exploring and drilling KNOC's concessions and joint ventures activities in Erbil, Kirkuk and Sulaimaniyah Districts of Iraq.*
5. Kuwait Institute for Scientific Research (KISR), Kuwait: *Consultant Geologist,*
 - I. *worked on the regional petroleum geology of Kuwait and Minagish Oilfield at Environments and Earth Sciences Group.*
6. Kuwait Oil Company (KOC), Ahmadi, Kuwait: *TPL Specialist Geologist II, Subsurface Team, Research & Technology Group:*
 - I. *Proposed, designed and established the KOC's Technical Review Committee for KOC technical publications.*
 - II. *Worked on the geothermal gradients of Kuwait.*
 - III. *Led the investigation team of shallow gas incidents at Magwa Dome, and*
 - IV. *Participated in KOC's workshops on shallow heavy oil and deep Jurassic gas-light oil-condensates reservoirs.*
7. LASMO Grand Maghreb, London, UK and Tripoli, Libya: *Contract Geologist, New-Ventures Team:*
 - I. *participated in due-diligence evaluations of new fields and concessions in Ghadames, Kufra, Murzuq and Sirte Basins.*

Experience II

8. **LASMO International, London, UK: Contract Geologist, North Africa New-Ventures Team, London, UK.**
 - I. *Worked on Paleozoic prospects generations in all basins of North Africa.*
9. **MOBIL Oil Libya, Tripoli, Libya: Staff Geologist, worked as Concession 12 Geologist, there he:**
 - I. *Conducted a regional prospects generation review of the petroleum geology of Mobil's concessions in Sirte Basin, and*
 - II. *Generated new prospects and participated in few oil and gas discoveries in East, Central and West Sirte Basin.*
10. **OMAN Oil Company E&P (OOCEP), Muscat, Oman: Senior Exploration Geologist with Field Development, New-ventures and Joint-ventures Groups. Involved in:**
 - I. *Exploration and development of AbuButabul tight gas field and discoveries in Block 60, East Oman.*
 - II. *Discovered missed, bypassed or underestimated gas reservoir in the Upper Permian Khuff Carbonate Formation while working on the older primary clastics gas reservoirs of AbuButabul Field.*
 - III. *Member of due diligent technical review team of the giant West Qurna Oilfield New-venture-Iraq.*
 - IV. *Technical reviews of Joint-Ventures within Oman, and*
 - V. *Evaluation and frontier exploration of sub-volcanic and unconventional oil prospects in Block 42, NE Oman.*
11. **VEBA Oel Operations, Tripoli, Libya: Acting Superintendent of Development Geology Group, Exploration Department:**
 - I. *Proposed, coordinated and produced with Robertson Research International a regional geochemical source rocks evaluation of eastern Sirte Basin for the Libyan National Oil Corporation.*
 - II. *Identified the contribution of Dolomite to the production of small fields in Block 12.*
 - III. *Contributed to the discovery of an oolitic build-up atop of the main Farroud carbonate reservoir of Ghani Oil Field, Sirte Basin, which nearly doubled the oil reserves of the reservoir.*
 - IV. *Identified the contribution of Fractured Volcanics to the Gargaf reservoir of Ora (Tagrifit) Oilfield in Block 13, and*
 - V. *Led Re-evaluation Taskforce Team of all Small and Shut-in Fields of VEBA Oel Operations.*

Experience III

Dr. Ibrahim established [*Target Exploration Consultants*](#) at the Royal Borough of Kensington and Chelsea, London, in 1990 where he organised geoscience courses, geological field-trips, Middle East and North Africa (MENA) Oil & Gas Conferences, Iraqi Petroleum (IPC) Conferences, and has been working and/or leading G&G teams at Target offices in London or at private, national and international oil companies' offices in or outside the UK, including:

12. AMOCO Overseas, Houston, USA: *Evaluated the Geology and Reserves of Giant South Iraq Fields, Geology of West Iraq; Geothermal Gradients of Iraq, and Geology and Prospectivity of Kuwait Projects.*
13. BULA Resources, Dublin, Ireland: *Geological and Geophysical Study of EPSA Block 4 of West Iraq, and Evaluation and ranking of West Iraq Concessions Project.*
14. DNO, London, UK: *Concessions Evaluation of EPSA Block 1 in West Iraq, Sudan Block 14 and Syrian Blocks 6 & 7.*
15. Norsk Hydro (C/O Petroteam), Oslo, Norway: *Evaluation of Fields Development Opportunities in Iraq.*
16. PETRONAS Carigali, Kuala Lumpur, Malaysia: *Led a due diligence G&G team in a DPSA Project of a giant Iraqi Oilfield.*
17. RAVEN Energy, London, UK and Dubai, UAE: *Evaluation of New-venture Opportunities in Onshore Iraq, Libya, Oman, and Offshore Tunisia and Arabian Sea of Sharjah.*
18. ROC OIL, Sydney, Australia: *Evaluation and geostatistical ranking of [**135 Libyan Exploration Concessions**](#).*
19. UNOCAL, Houston, USA: *Petroleum Geology and prospectivity of Eastern Syria and Northwest Iraq.*

Membership

Dr. Ibrahim is (or was) a member of AAPG, ESG, ESSL, GSO, IGS, PESGB (Chairman of Middle East Special Interest Group 2021-P), SPWLA and SPE (IT Chairperson and Board Member of Kuwait-SPE Chapter 2008-09). He is a regular presenter and session chairman at AAPG, EAGE, GEO; Iraqi Petroleum, Middle East and North Africa Oil & Gas, and SPE conferences.



Research

Apart from prospects generation and discovering new oil and gas fields, Dr Ibrahim's research interests includes:

- I. Basin modelling by integrating source rocks type, quality, maturations, hydrocarbon generation and migration with charging, trapping and leaking of hydrocarbons in response to burial, geothermal gradient, with evolution, closing and/or breaching of conventional and unconventional reservoirs.
- II. Impact of regional tectonics and structural evolution of the traps on saturations, reservoir quality and gas/oil/tar-mat/water contacts of conventional and unconventional hydrocarbon reservoirs.
- III. Impacts of global climatic changes, high temperatures, sand and dust storms (SDS), and gas seepages on the HSE of petroleum operations, and sustainability of renewable GeoEnergy projects in MENA Countries.
- IV. Meteorite impacts as prospective structural hydrocarbon traps and source of Rare Earth Minerals.

Patents & ©

Dr Ibrahim conceived, compiled and applied for USA Patent for his Compensated Geothermal Gradients-Extrapolated Surface Temperature Intercepts ([CGG-ESTI©](#)) method and software for collecting Bottom Hole Temperatures (BHTs) of exploration and development wells, calculating, analysing and mapping their geothermal gradients in search of geothermal gradients anomalies of hydrocarbon entrapments at potential hydrocarbon "[un-discovery wells](#)" and [geothermal prospects generation](#) in mature basins. The software was tested and successfully applied on blocks in onshore and offshore Louisiana-USA, North Sea and Morecambe Bay-UK, west-southwestern Iran; Iraq, eastern Jordan, Kuwait; Libya, offshore Nigeria, eastern Syria and northern Saudi Arabia.

Dr Ibrahim conceived, programmed, compiled and possesses the copyright of several in-house [software packages](#) for analysing and interpreting of Wireline Logs, Drilling Mud Gas Logs, and Structural Evolution of Hydrocarbon Traps.

Publications

Dr. Ibrahim [published](#) on regional petroleum geology, basin analysis, structural evolution of basins, source rocks and traps; hydrocarbon prospects generation, meteorite impact structures; geothermal gradients and SDSs.

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University of Baghdad



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