

# Appraisal of Fracture Quality in Prospective Fractured Reservoir Units in Kurdistan, Iraq

### **Product Summary**

The purpose of this product is to provide you with a major head-start in identifying potential fractured reservoirs in Kurdistan and neighbouring areas in NE Iraq, and to help you to 'high-grade' suitable target acreage during early exploration. We have capitalised on our extensive experience of fracture analysis within Cenozoic and Mesozoic reservoir units in NE Iraq to produce a succinct summary of fracture quality and a high level synthesis of fracture characteristics for each formation. A series of 56 GIS-compatible maps show spatial variation in **fracture quality, seal risk, structural complexity**, and **hydrocarbon occurrence** across the region – ideal inputs for assessing risk associated with different play components.

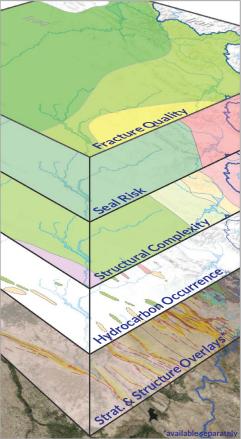
#### **Direct Relevance to E&P Challenges**

The outputs of the study are specifically aimed to provide you with:

- Appraisal of fracture quality (i.e. suitability to act as fractured reservoirs) for 43 formations in Kurdistan and NE Iraq, with supporting data.
- Vector-based GIS-compatible overlays that are simple to add to your ArcMap projects, GoogleEarth, or your preferred G&G software: map layers include fracture quality for the major reservoir units in NE Iraq, seal risk maps from Permian to Pliocene, structural complexity maps for the Cenozoic and Mesozoic stratigraphy, and locations of sub-surface hydrocarbon occurrences per reservoir formation.
- Numerically attributed overlays of the different risk elements that make it easy to weight the various risk factors, calculate combined risk, and identify attractive acreage.
- Top-down summaries for each formation, including generalised cross-sections depicting lateral and vertical variations in fracture quality, and tables summarising key information on producing fields, discoveries and sub-surface hydrocarbon shows.
- Regional structural and tectono-stratigraphic context including a summary of fracture generation episodes for Kurdistan.

Name	FracQ			Discovery	Name	FracQ			Discovery
	Appraisa	I Мар	Risk Ma	р Мар		Appraisa	I Мар	Risk Map	Мар
Bakhtiari	✓				Dokan	✓			
U.Fars (Injana)	✓				Qamchuqa	✓			
L. Fars (Fatha)	✓				Sarmord	✓			
Jeribe	✓				Balambo	✓			
Dhiban	✓				Garagu	✓			
Euphrates	✓				Chia Gara	✓			
Serikagni	✓				Barsarin	✓			
Kirkuk Group	✓				Gotnia	✓			
Pila Spi	✓				Naokelekan	✓			
Avanah	✓				Najmah	✓			
Jaddala	✓				Sargelu	✓			
Gercus	✓				Alan	✓			
Khurmala	✓				Mus/Sehkaniyan	✓			
Sinjar	✓				Adaiyah	✓			
Aaliji	<b>√</b>				Butmah/Sarki	✓			
Kolosh	✓				Baluti	✓			
Tanjero	<b>√</b>				Kurra Chine	✓			
Shiranish	<b>√</b>				Geli Khana	✓			
Pilsener/Hartha	√ ·				Beduh	✓			
Aqra	✓				Mirga Mir	✓			
Bekhme	✓				Chia Zairi	✓			
Kometan	✓								







#### **Pricing**

Single company, corporate licence:

Contact us for pricing information.







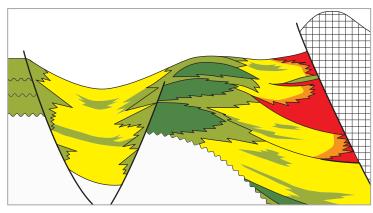


## Integrated Geoscience from Fieldwork, Satellite and Sub-Surface Data

#### **Product Details**

Our new vector-based map layers incorporate data from a wide range of sources and scales, to provide a coherent, consistent interpretation of fractured reservoir formations across the region. Our unique understanding of the interplay between litho-stratigraphy, mechanical properties and fracture style is based on a comprehensive synthesis and analysis of data from outcrop, thin-section, borehole, production, satellite imagery and extensive literature sources (including published books, scientific articles, MSc and PhD theses, Competent Persons Reports, maps, company websites, and press releases).

Our fracture quality maps draw heavily on our direct experience of fracture characterisation projects for many clients across the region, as well as our detailed, quantitative, multi-client fracture studies that span Cretaceous, Jurassic and Triassic units. Similarly, when compiling our new structural complexity and seal risk maps we have capitalised on our 25 successful field campaigns in the northern Zagros, for 14 companies, covering 40 exploration license blocks over an area of more than 20,000 sq.km.



Generalised cross-section coloured by fracture quality showing the lateral variation in predicted quality.

#### **Product Contents**

- Richly illustrated report (172 pages, 125 figures) containing the appraisal of 43 formations, field photos (sequence overviews and close-up outcrop photos), extensive tabulated data, supporting evidence, definition and discussion of "fracture quality", background concepts, methodology, and regional overviews to link litho- and mechanical-stratigraphy, and the tectonic history of Kurdistan & NE Iraq.
- Analysis of each formation is presented in terms of the quality of fractured reservoir units, and the implications for hydrocarbon exploration and production.
- 56 vector-based map overlays (shapefile and KMZ formats, compatible with ArcMap, Google Earth, and other software), showing interpreted spatial variations for Permian to Pliocene formations:
- 21 "fracture quality" maps spanning the main reservoir formations:
- 14 maps delineating seal risk for stacked reservoir formations;
- 19 maps showing the distribution of 347 hydrocarbon occurrences, from 41 formations, recorded from 104 hydrocarbon fields;
- 2 structural complexity maps (Mesozoic & Cenozoic).
- Bespoke workshops and training courses on many aspects of Zagros geology and hydrocarbon systems are also available as additional support for this product (details on request).

Find out more geospatial-research.com/zagros

**Discuss your needs** richard@geospatial-research.com