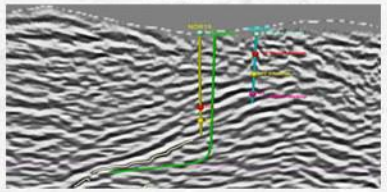
Georgia Oil and Gas Limited (GOG)



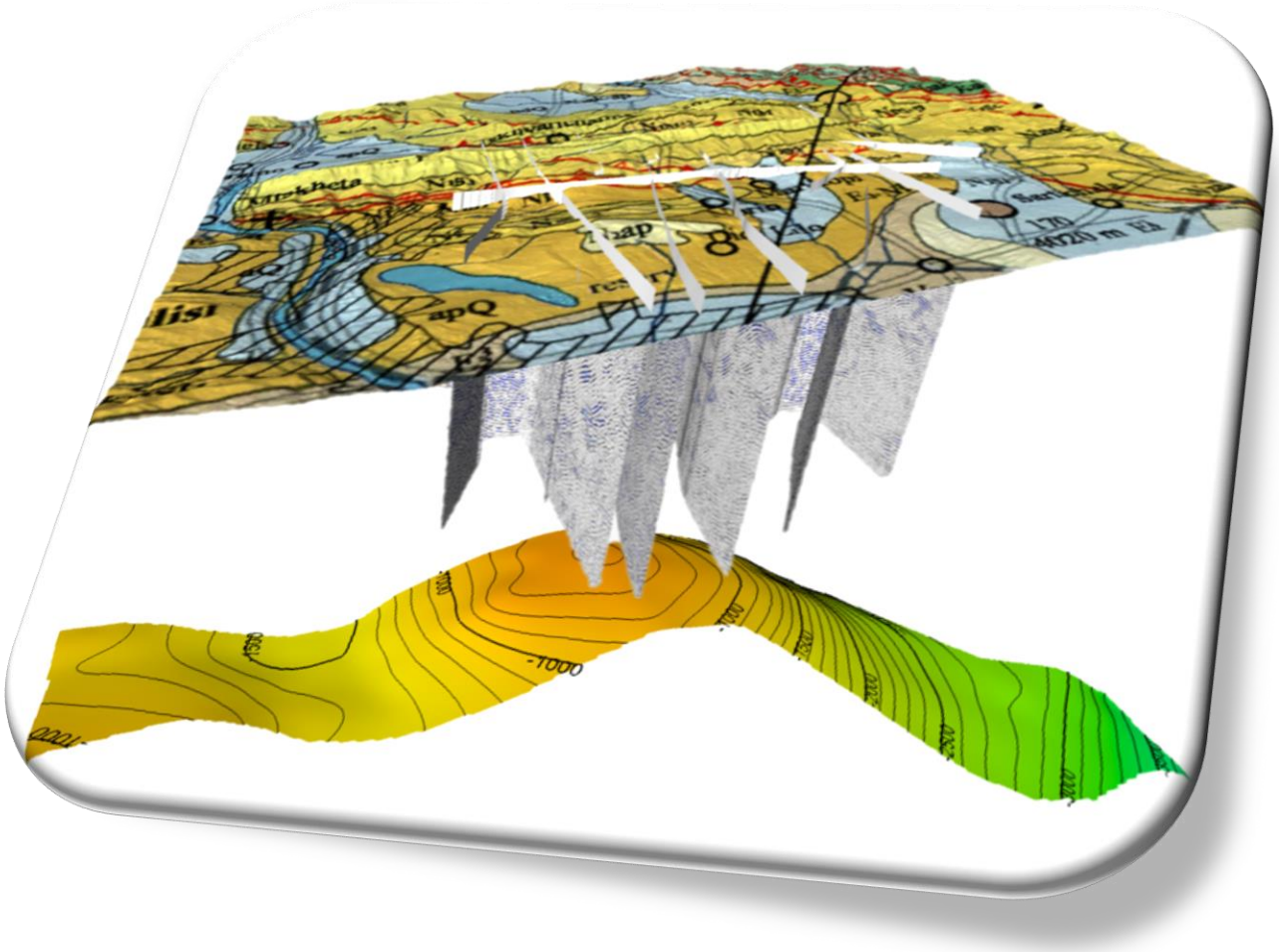
Exploration opportunities in the Kura-Kartli foreland basin (onshore central Georgia)

Paolo Pace

Georgia Oil and Gas Lunch & Learn
London, March 4th 2020

Talk Outline

- REGIONAL FRAMEWORK & LICENSES OVERVIEW
- TECTONO-STRATIGRAPHY & MAIN PSE
- DATASET
- HC PROSPECTIVITY: IDENTIFIED PROSPECTS & LEADS
- MAIN TAKE AWAY MESSAGES



Schlumberger	XI[B], IX, X
Georgia Oil & Gas Ltd.	Satskhenisi, Martkopi, N.Satskhenisi, VIII, XI[M], XI[N], XI[G], XIV, XIII, IX[A], XI[K], XI[L]
Block Energy	Norio, Satskhenisi, XI[F]
CanArgo	XI[C], XI[D], XI[E]
Frontera Resources	XII
Vectra Resources	VII[B]
VM Group (Chinese)	V, VI[A], VI[B]

Greater Caucasus Thrust System

Tendering of offshore blocks (ongoing)

Achara-Trialeti Thrust System

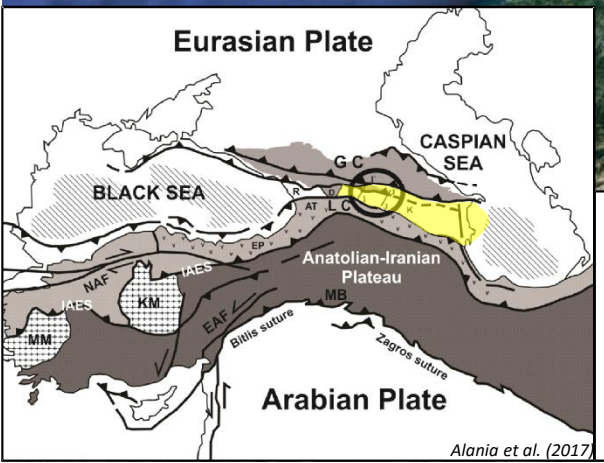
Deformed Kura Foreland Basin

BAKUSUPSA OILPIPELINE

BAKU-TBILISI-CEYHAN O&G PIPELINE (BP OPERATED)

N

10 km

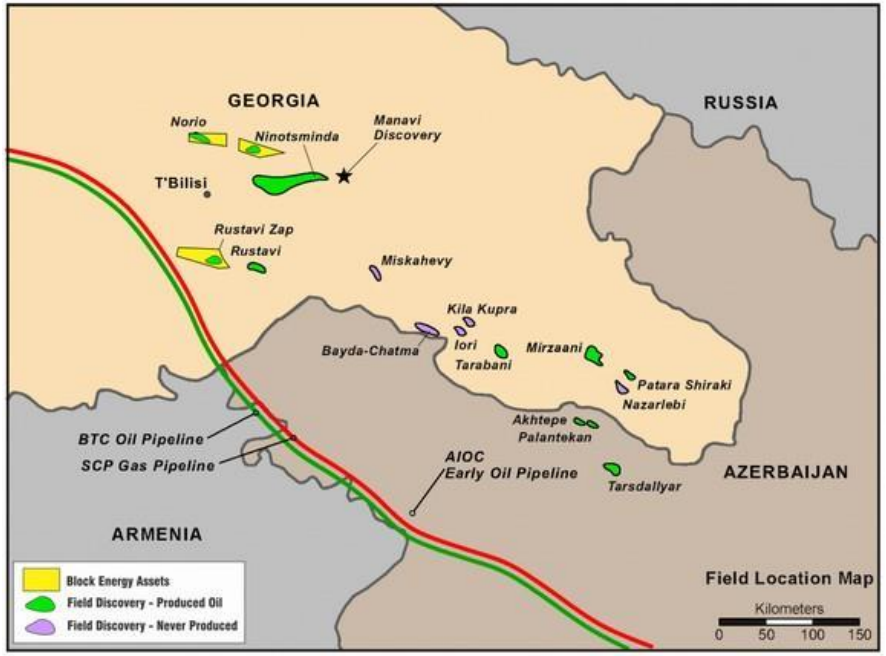


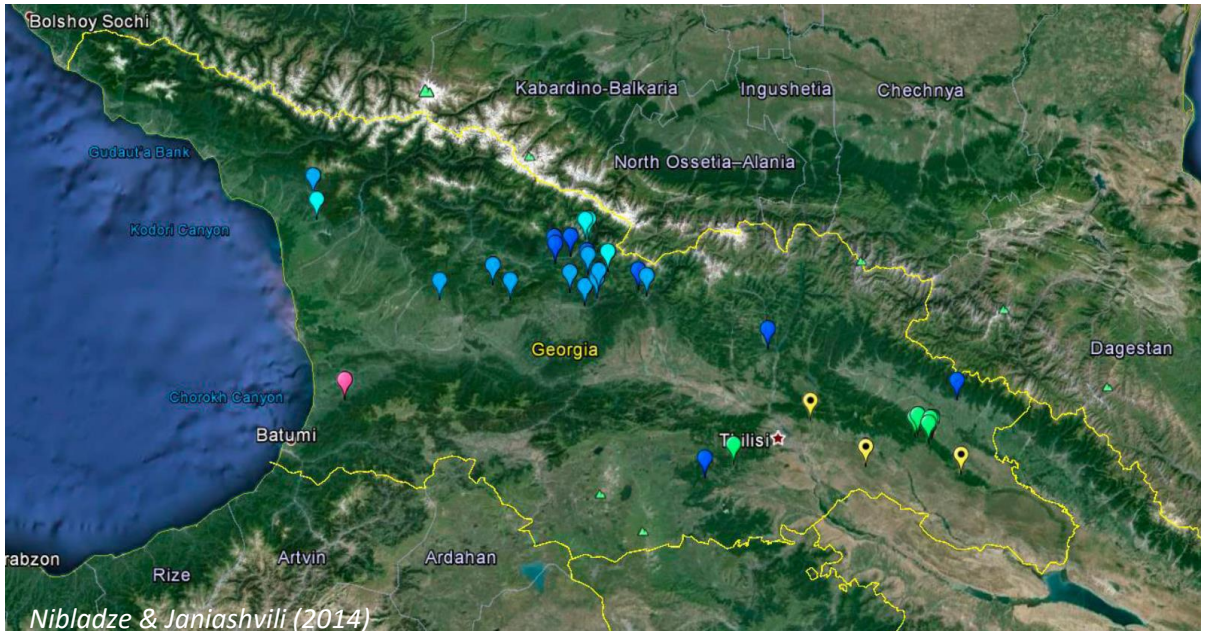
Alania et al. (2017)

Plate
Anatolide-Tauride Block
Metamorphic massif
European margin (Sakarya, Pontides, Lesser Caucasus, including arc series)
Suspected oceanic crust
Strike-slip faul
Thrust
Study area

GC: Greater Caucasus
LC: Lesser Caucasus
AT: Achara-Trialeti
R: Rioni
K: Kura
D: Dzirula
MB: Mus Basin
EP: Eastern Pontides
KM: Kirsehir Massif
EAF: East Anatolian Fault
NAF: North Anatolian Fault
IAES: Ismir-Ankara-Erzincan Suture
MM: Menderes Massif

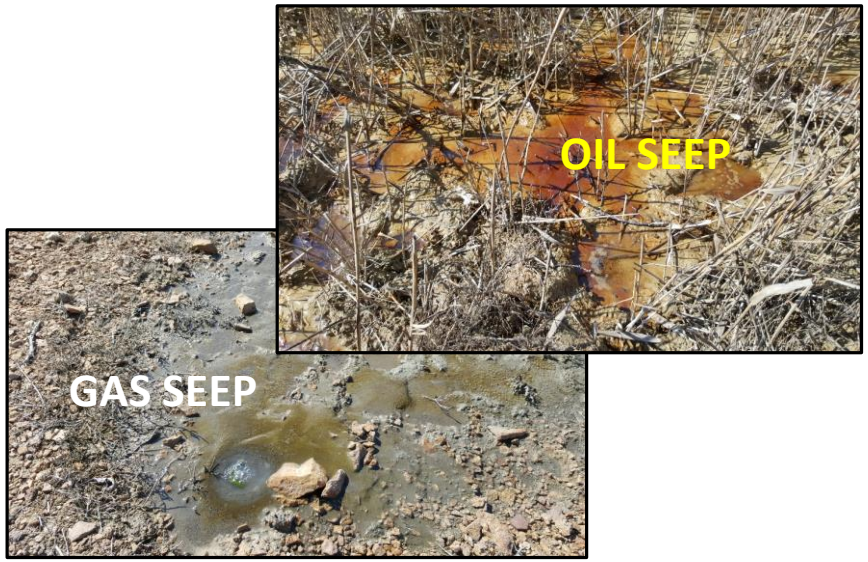
Main Fields, Discoveries & Seeps





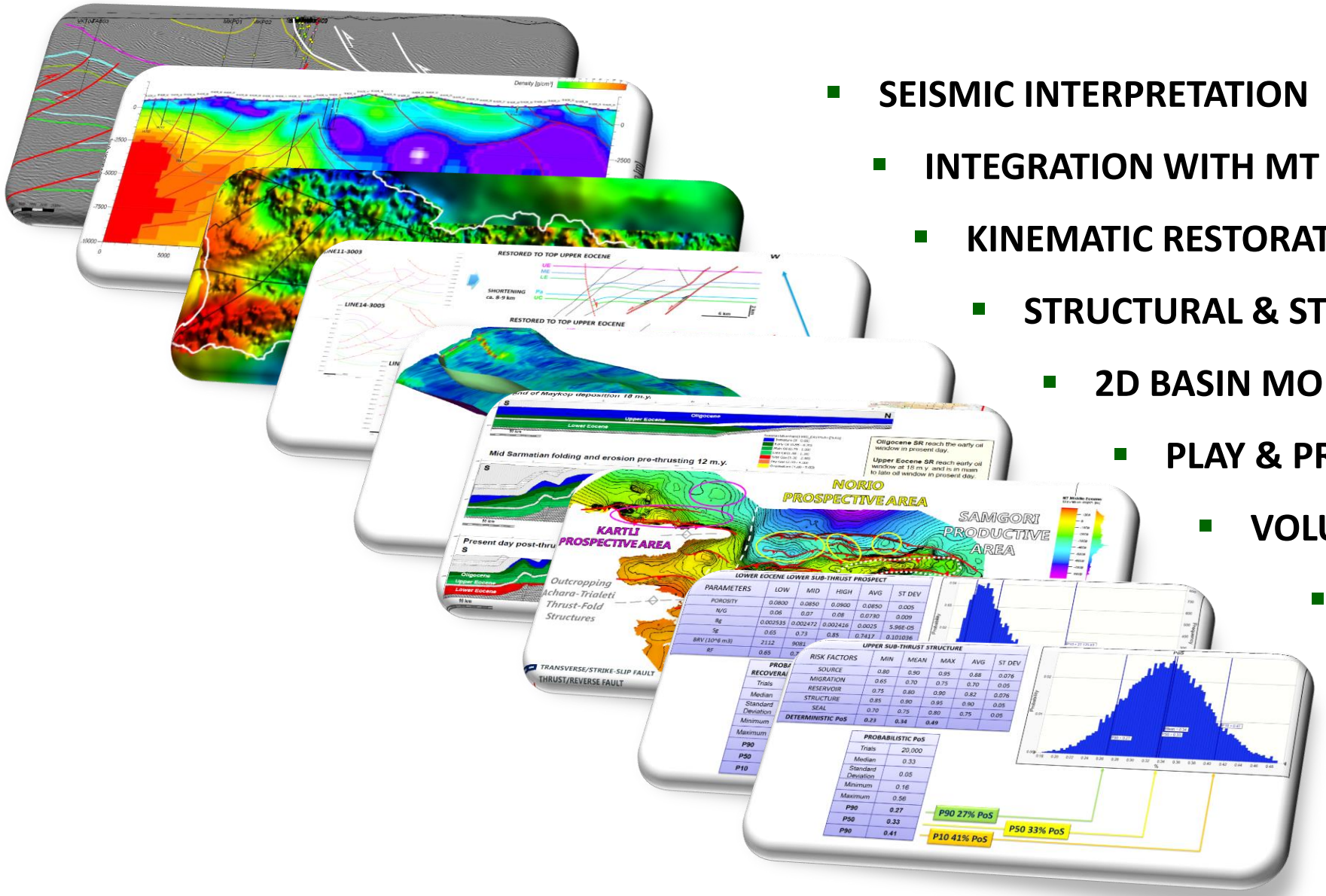
Nibladze & Janiashvili (2014)


KAVTISKHEVI-23 WELLHEAD



- **VERY ACTIVE PETROLEUM SYSTEM IN THE KURA BASIN**
- **STILL UDEREXPLORED WITH SIGNIFICANT POTENTIAL**

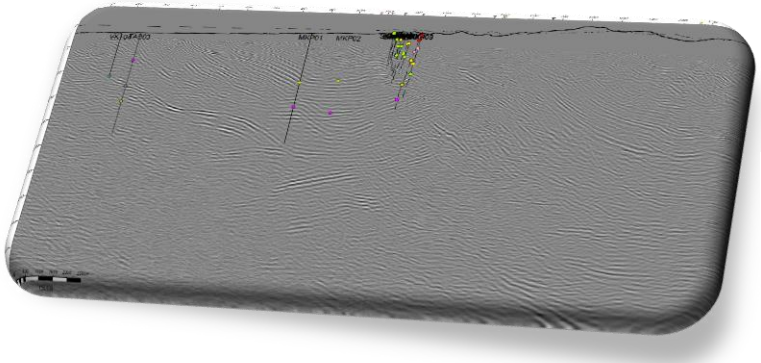
Play-Based Prospect Generation Workflow



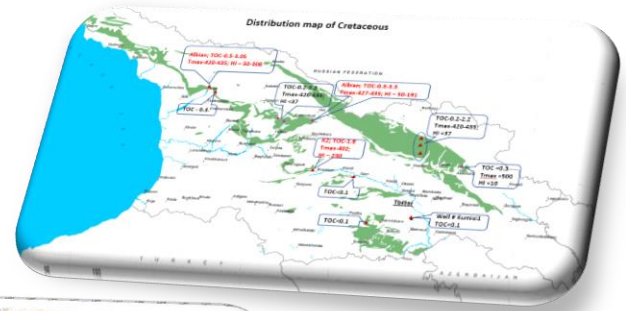
- SEISMIC INTERPRETATION
- INTEGRATION WITH MT & GRAV-MAG
- KINEMATIC RESTORATION
- STRUCTURAL & STRAIN MODELLING
- 2D BASIN MODELLING
- PLAY & PROSPECT DEFINITION
- VOLUMETRICS
- RISK ASSESSMENT

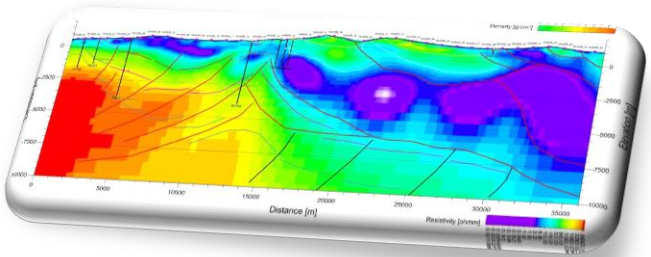
De-risking Strategy

- 2D PSTM & PSDM REPROCESSING OF VINTAGE SEISMIC
- MT ACQUISITION
- REGIONAL GRAVITY & MAGNETICS
- SOURCE ROCK EVALUATION
- 3D SEISMIC REPROCESSING
- RESERVOIR CHARACTERISATION FROM OUTCROP ANALOGUES

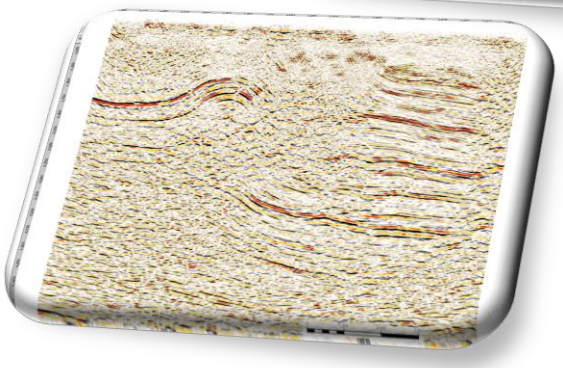


GK processing

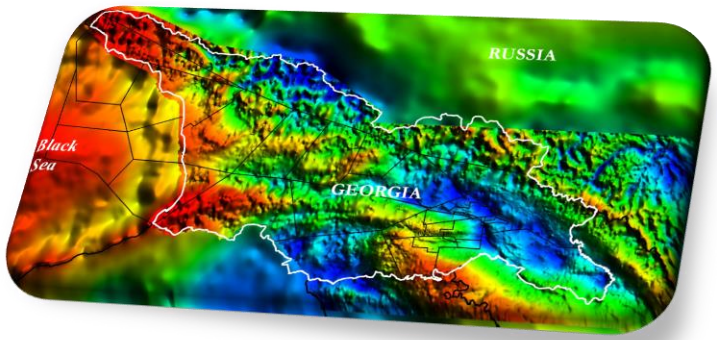




geopartner



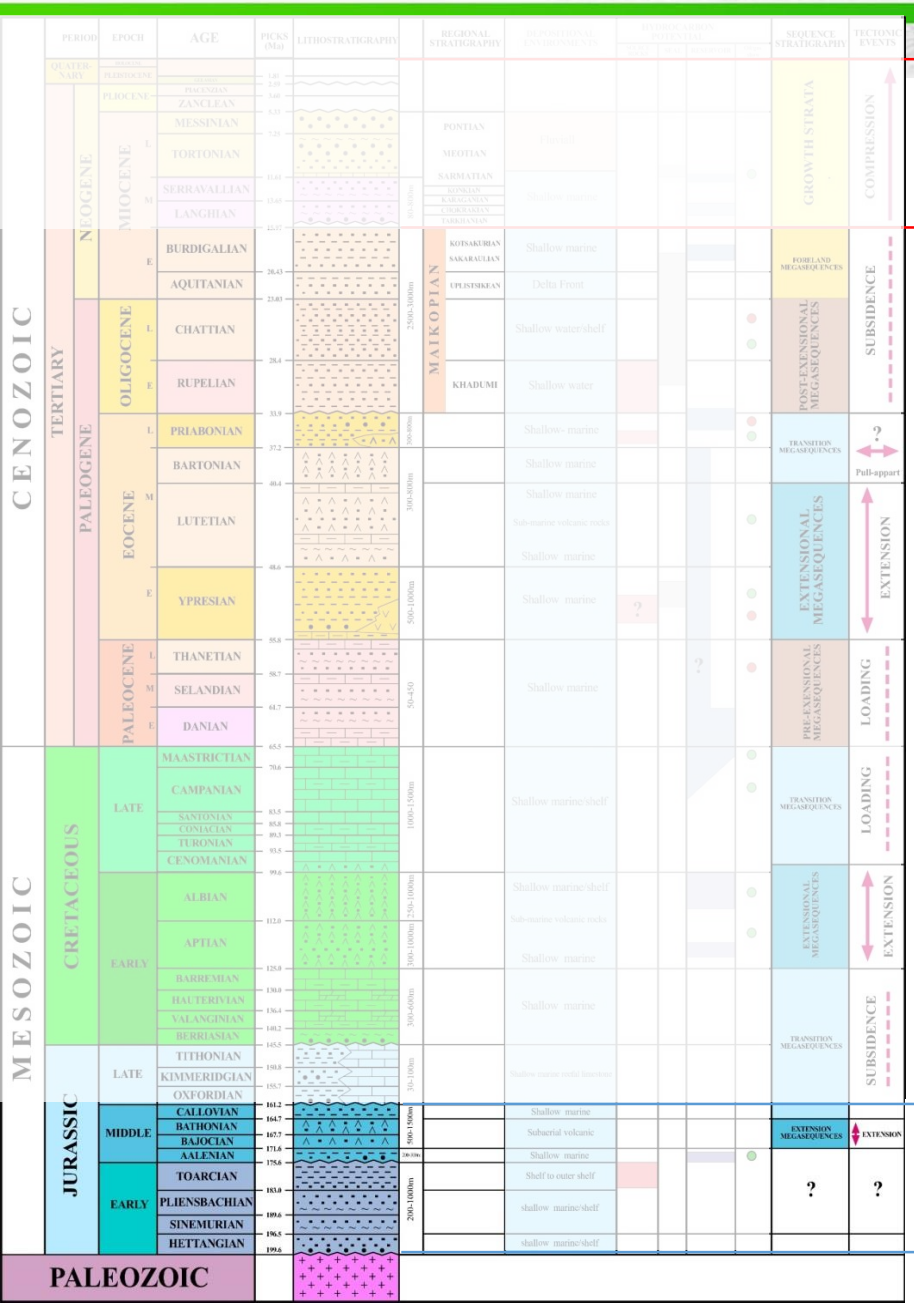
MONTAN UNIVERSITÄT LEOBEN



getech

EPI Group

Tectono-Stratigraphy

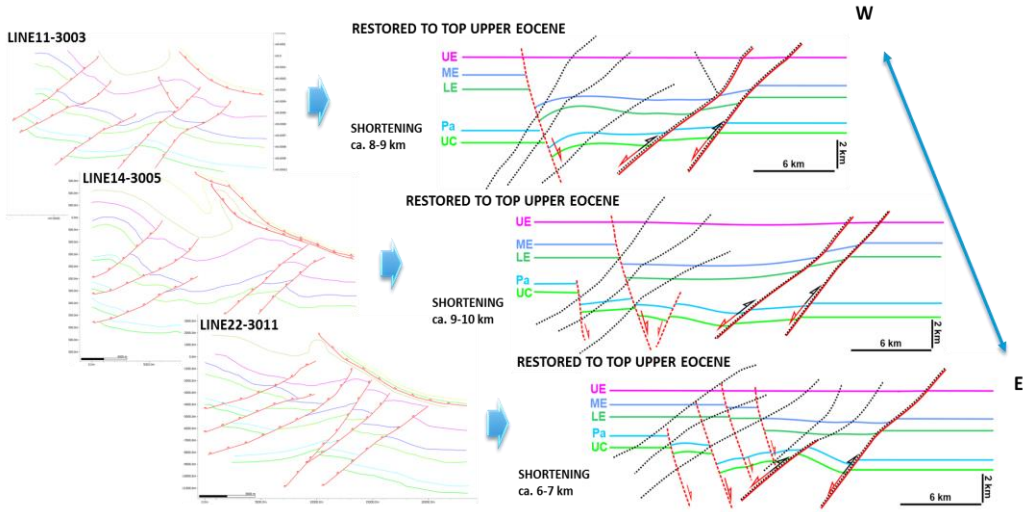


CONTRACTION & FORELAND BASIN

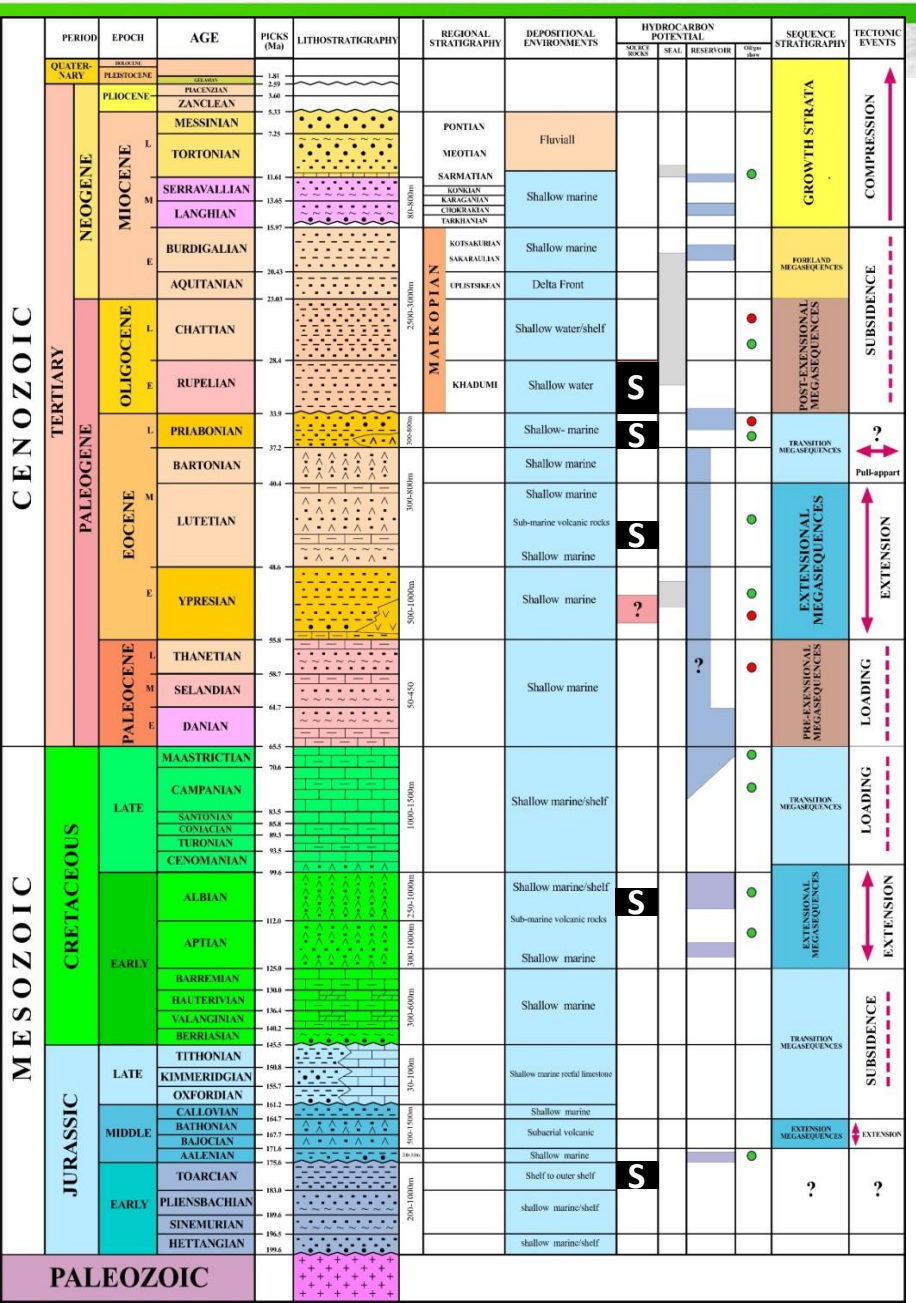
PASSIVE SUBSIDENCE WITH EPISODES OF EXTENSION

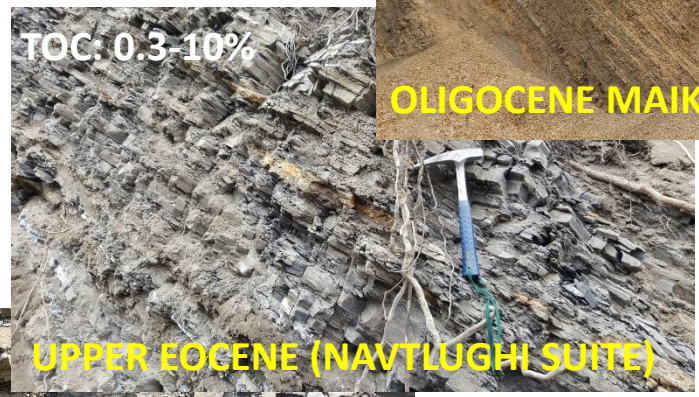
RIFTING

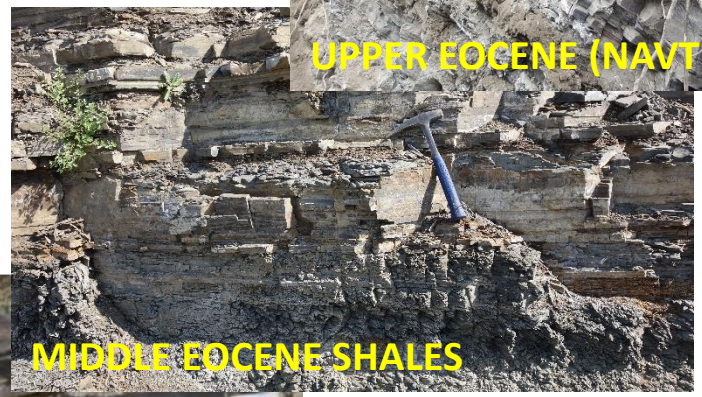
- **SEDIMENTARY SEQUENCE DOMINATED BY VOLCANOGENIC INFLUX REPEATED OVER TIME**
- **REPEATED EVENTS OF EXTENSION FROM JURASSIC TO EOCENE**
- **MAIN CONTRACTIONAL EVENT WITH THRUST BELTS DEVELOPMENT DURING MIDDLE-UPPER MIOCENE**
- **INVERSION OF PRE-EXISTING EXTENSIONAL BASINS AS TESTED VIA 2D KINEMATIC RESTORATION**

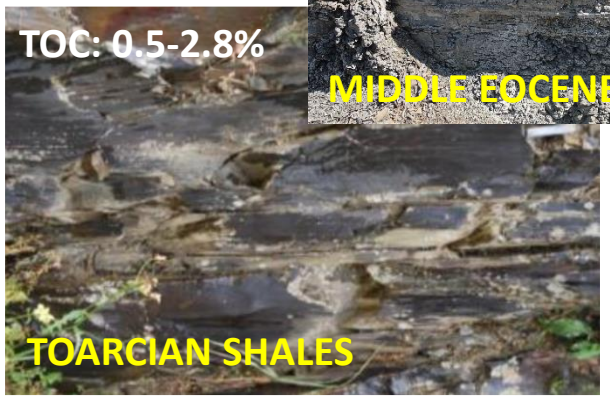


PSEs: Main Source Rocks

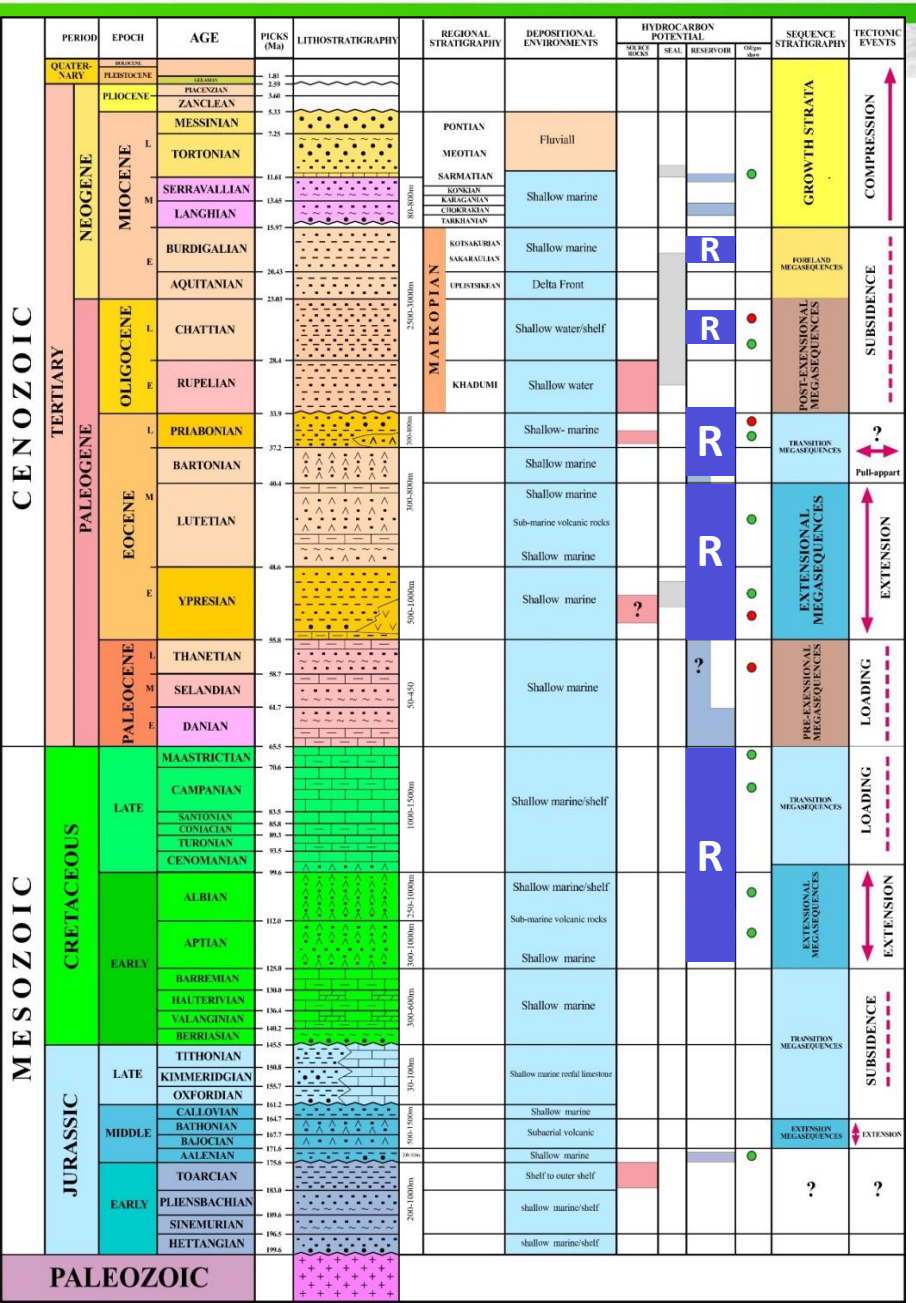


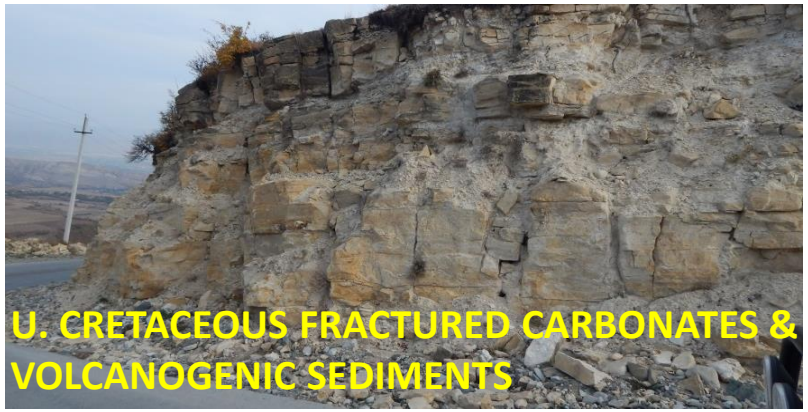


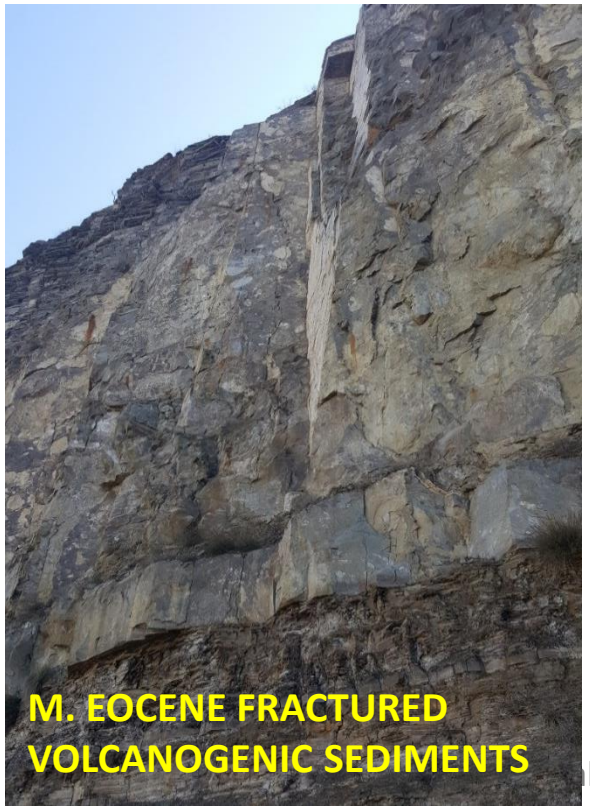




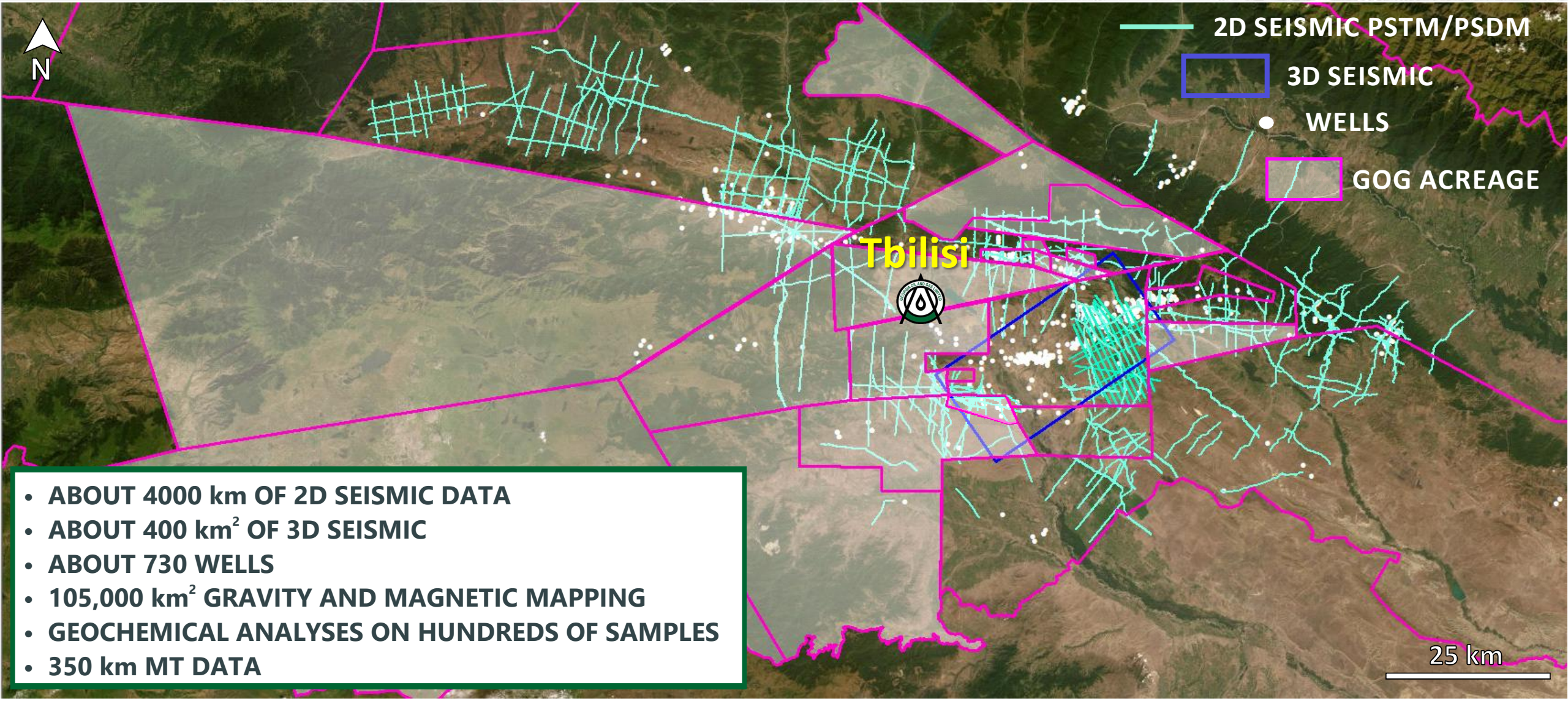
PSEs: Main Reservoirs





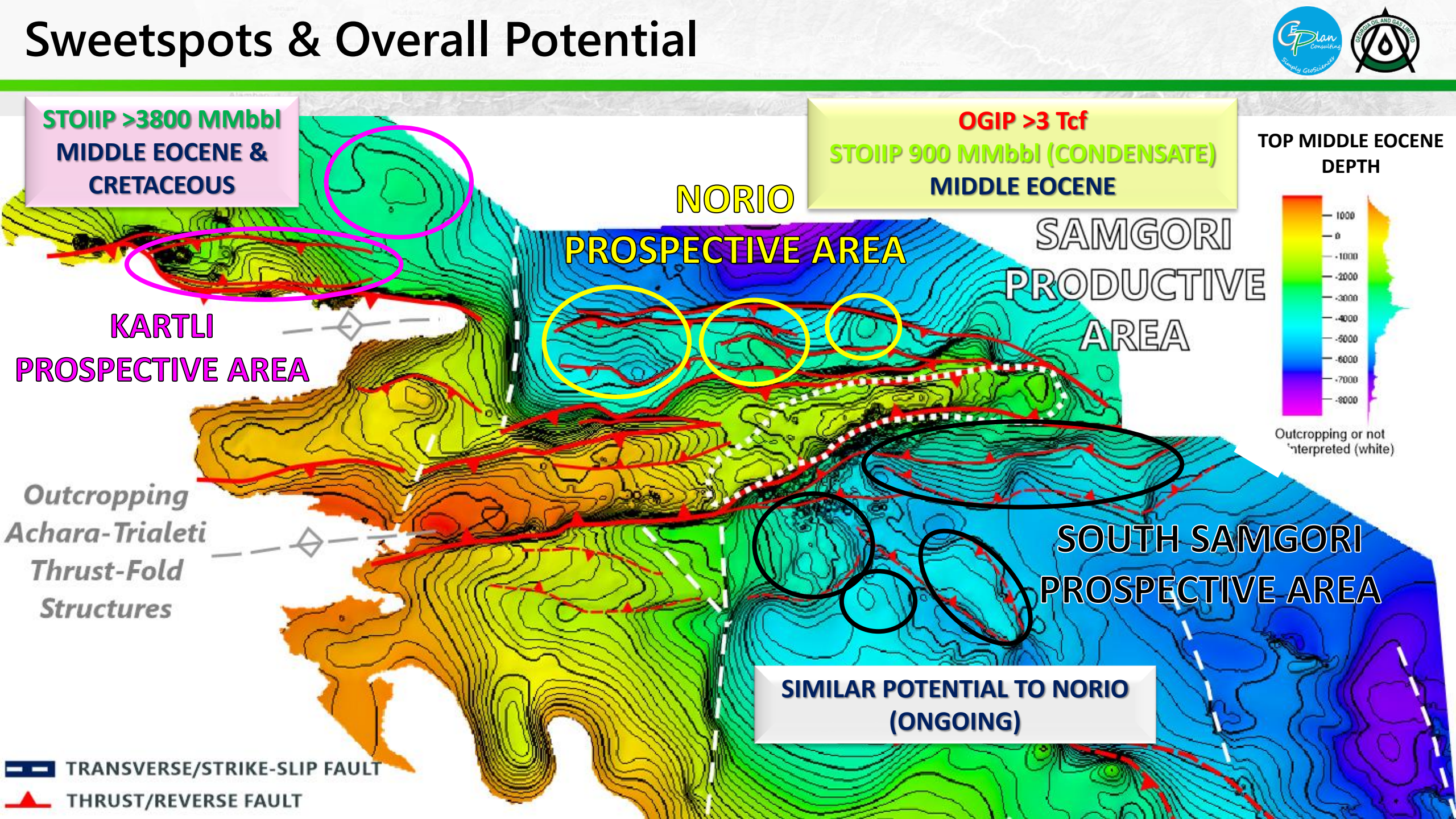


Dataset

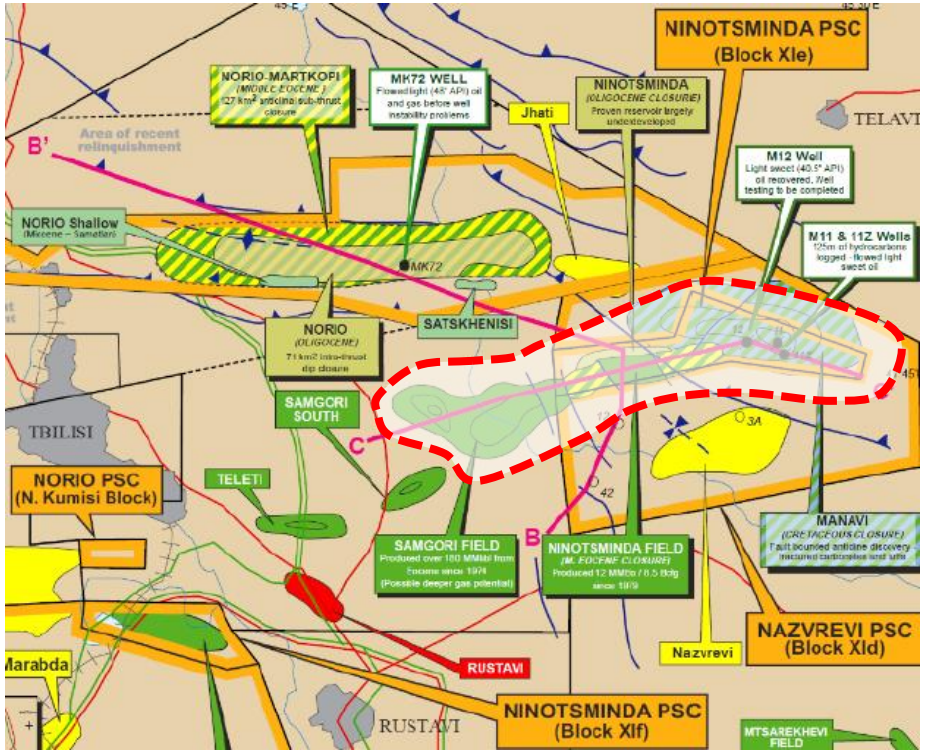


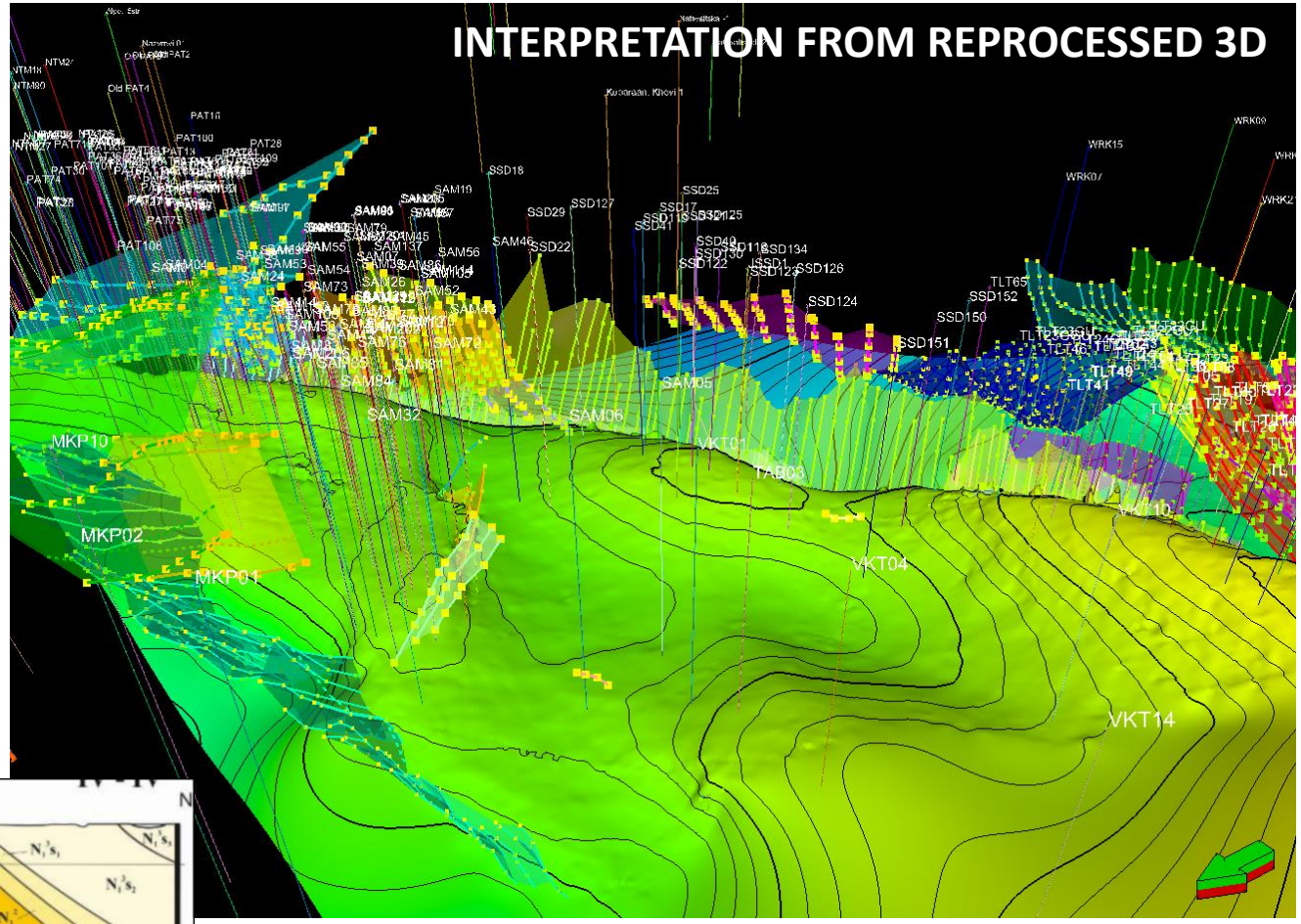
- ABOUT 4000 km OF 2D SEISMIC DATA
- ABOUT 400 km^2 OF 3D SEISMIC
- ABOUT 730 WELLS
- 105,000 km^2 GRAVITY AND MAGNETIC MAPPING
- GEOCHEMICAL ANALYSES ON HUNDREDS OF SAMPLES
- 350 km MT DATA

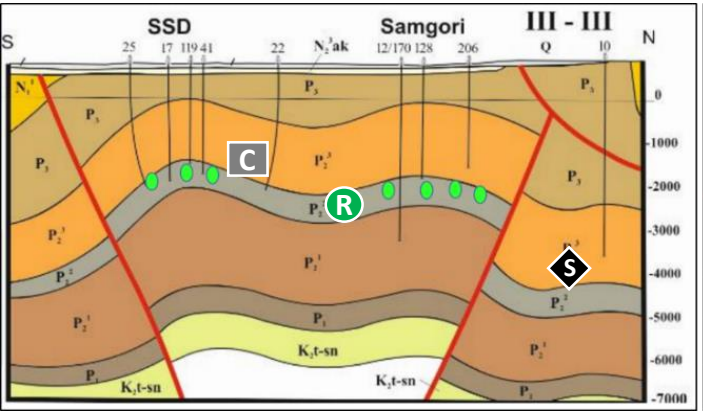
Sweetspots & Overall Potential

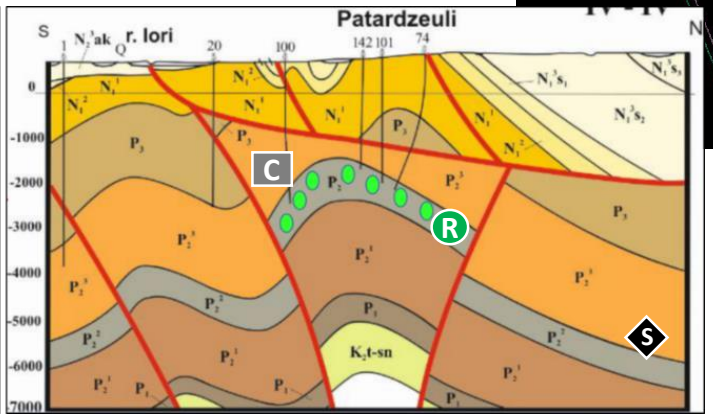


Play Concept: Samgori Fields









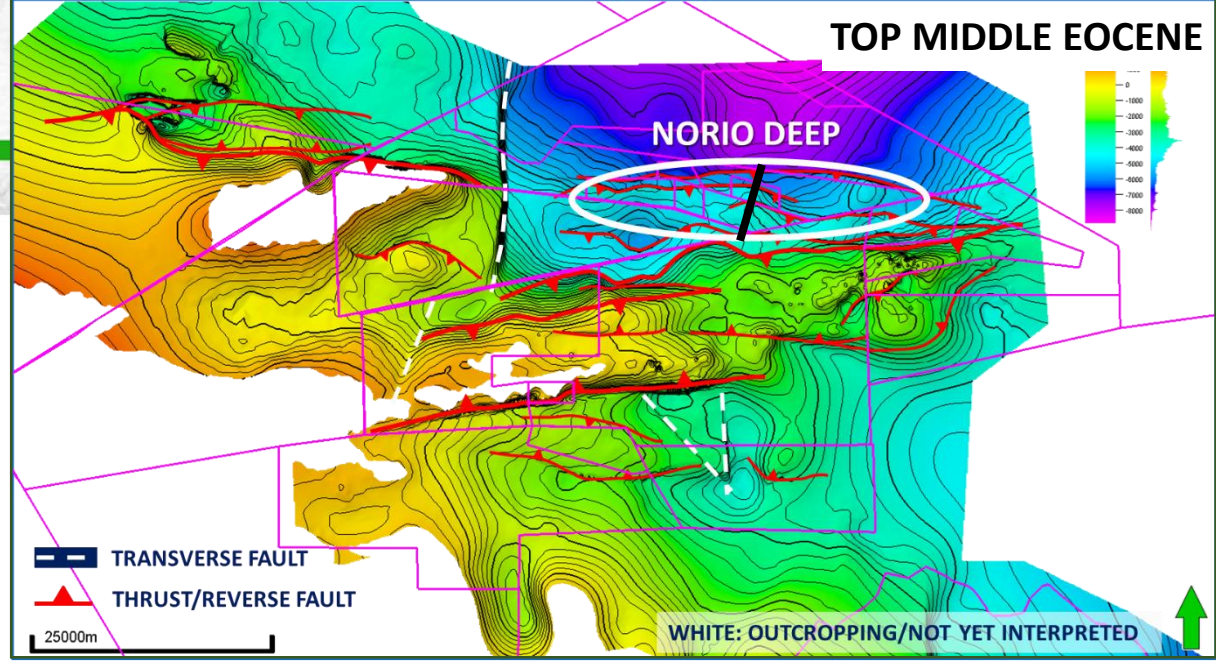
Norio Samgori Lookalike Deep

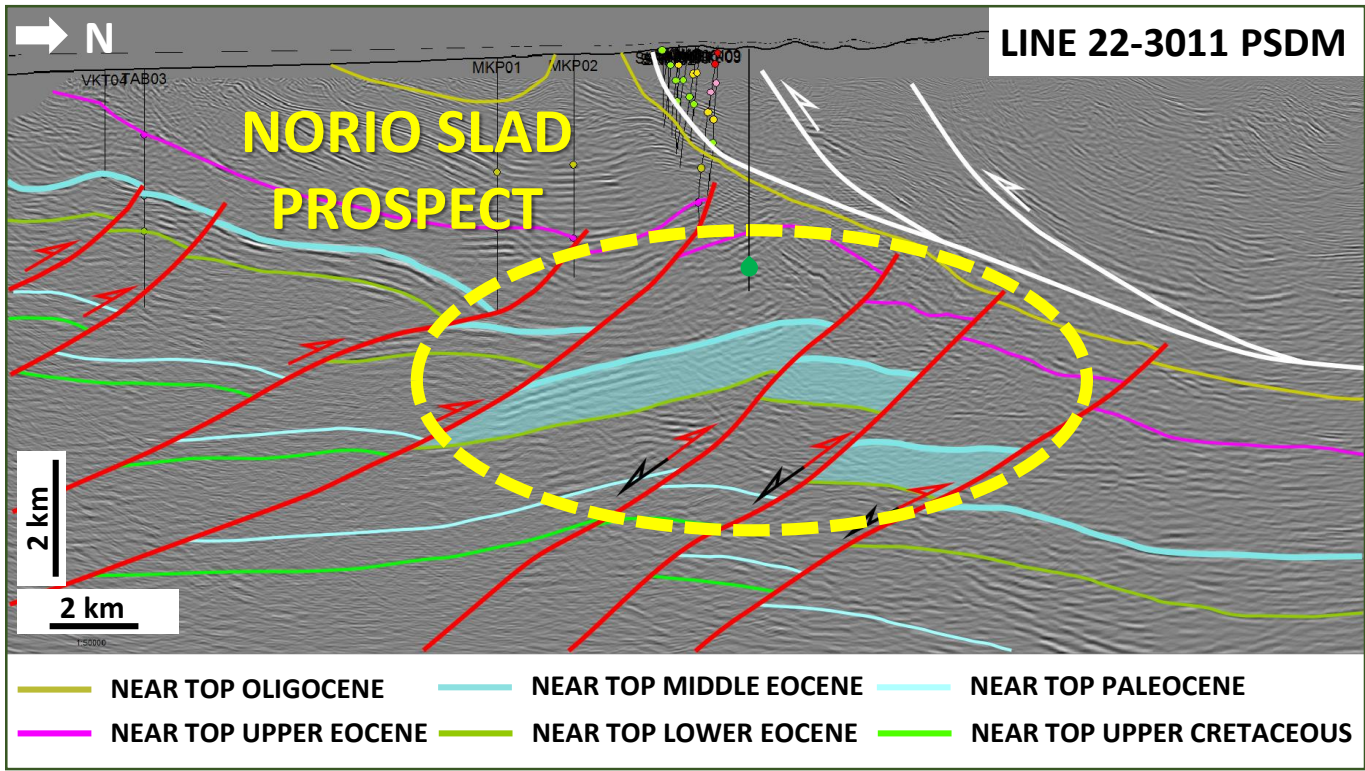
- **SOURCE:** UPPER EOCENE SHALES
  POTENTIAL INTRA-MIDDLE EOCENE SHALES
- **RESERVOIRS:**
  - MIDDLE EOCENE VOLCANOGENIC SANDSTONES, TUFFS AND SILTSTONES (FRACTURED RESERVOIR) PRIMARY TARGET
  - UPPER & LOWER EOCENE AS SECONDARY TARGETS
- **SEAL:** UPPER EOCENE SHALES
- **TRAP:**
  - SUB-THRUST INVERSION STRUCTURE
  - CULMINATION AT 3780 TVDSS
  - 7 x 35 km (MAX WIDTH x ALONG-STRIKE LENGTH)
- **BLOCKS:** XIm, XIc, NORIO, SATSKHENISI, MARTKOPI

>3 Tcf (P50) OGIP SCEN. 1

900 MMbbl (P50) STOIIP CONDENSATE SCEN. 2

MIDDLE EOCENE (UNRISKED)



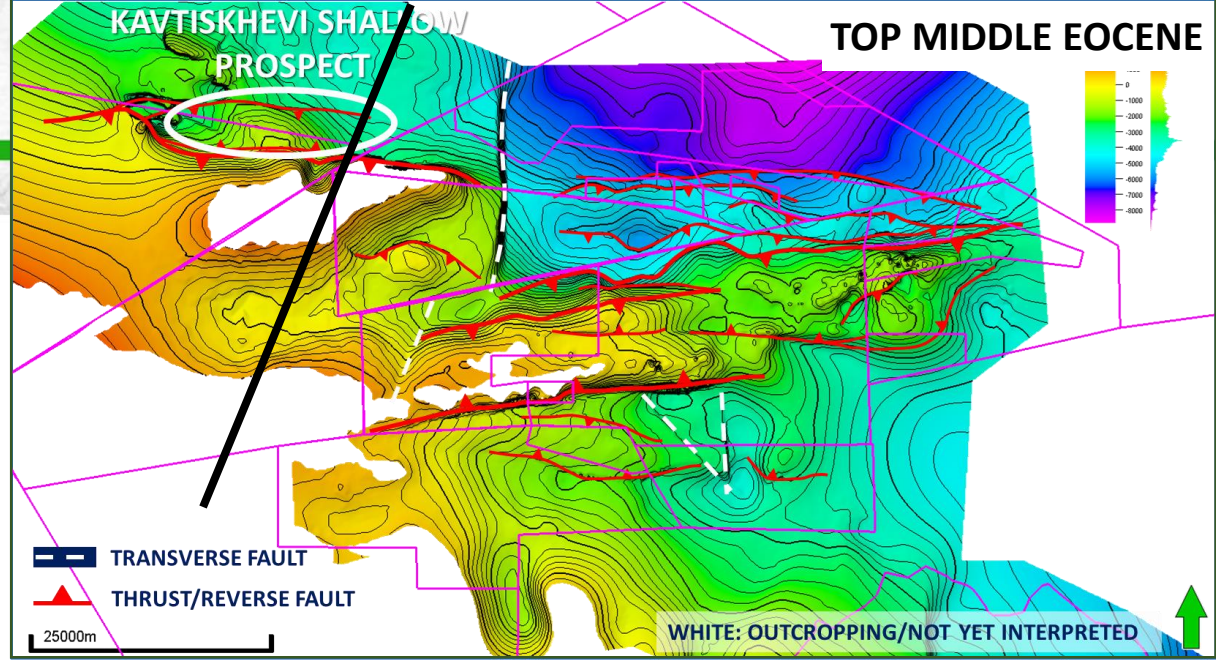


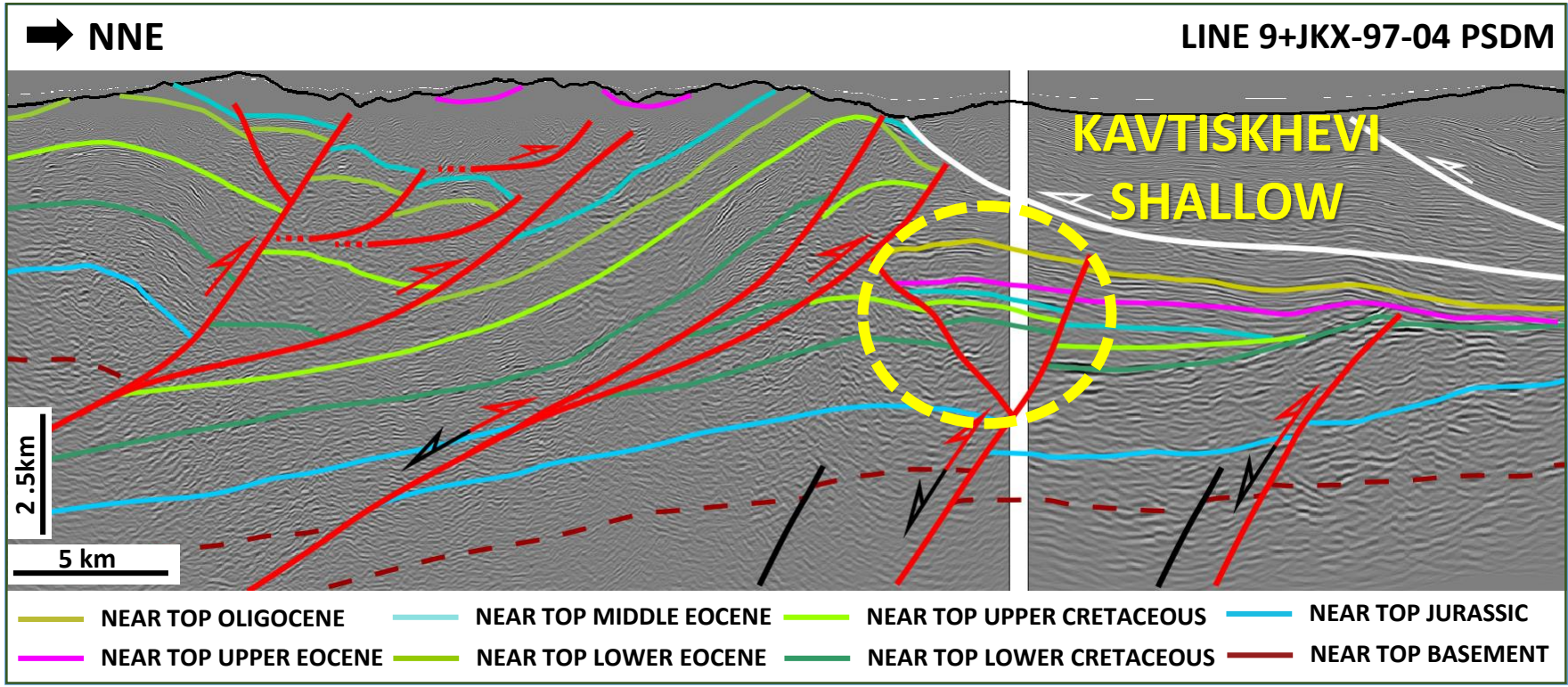
Kavtiskhevi Shallow Prospect

- **SOURCE:** UPPER EOCENE SHALES
- **RESERVOIRS:**
  - MIDDLE EOCENE VOLCANOGENIC SANDSTONES, TUFFS AND SILTSTONES (FRACTURED RESERVOIR) PRIMARY TARGET
  - UPPER CRETACEOUS CARBONATES AND TUFF-SANDSTONES (FRACTURED RESERVOIR)
- **SEAL:** UPPER EOCENE SHALES
- **TRAP:**
  - SUB-THRUST INVERSION STRUCT.
  - CULMINATION AT 1000 TVDSS
  - 4.5 x 19 km (MAX WIDTH x ALONG-STRIKE LENGTH)
- **BLOCKS:** XI, VIII

2400 MMbbl (P50) STOIIP

MIDDLE EOCENE + U. CRETACEOUS (UNRISKED)



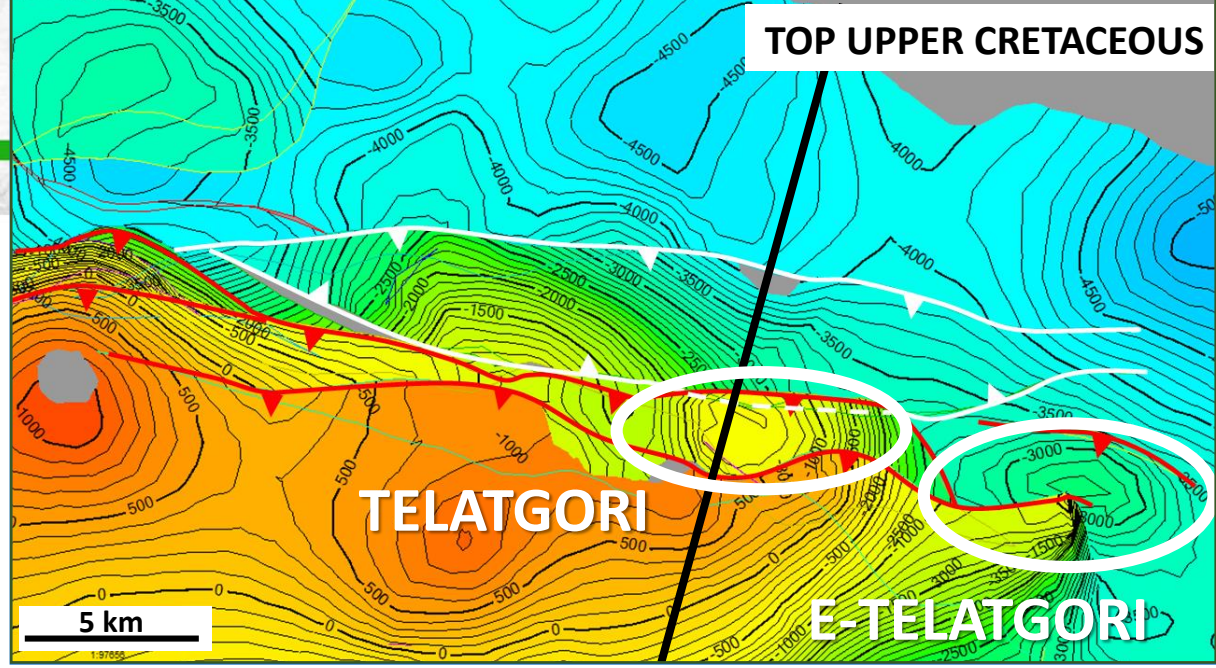


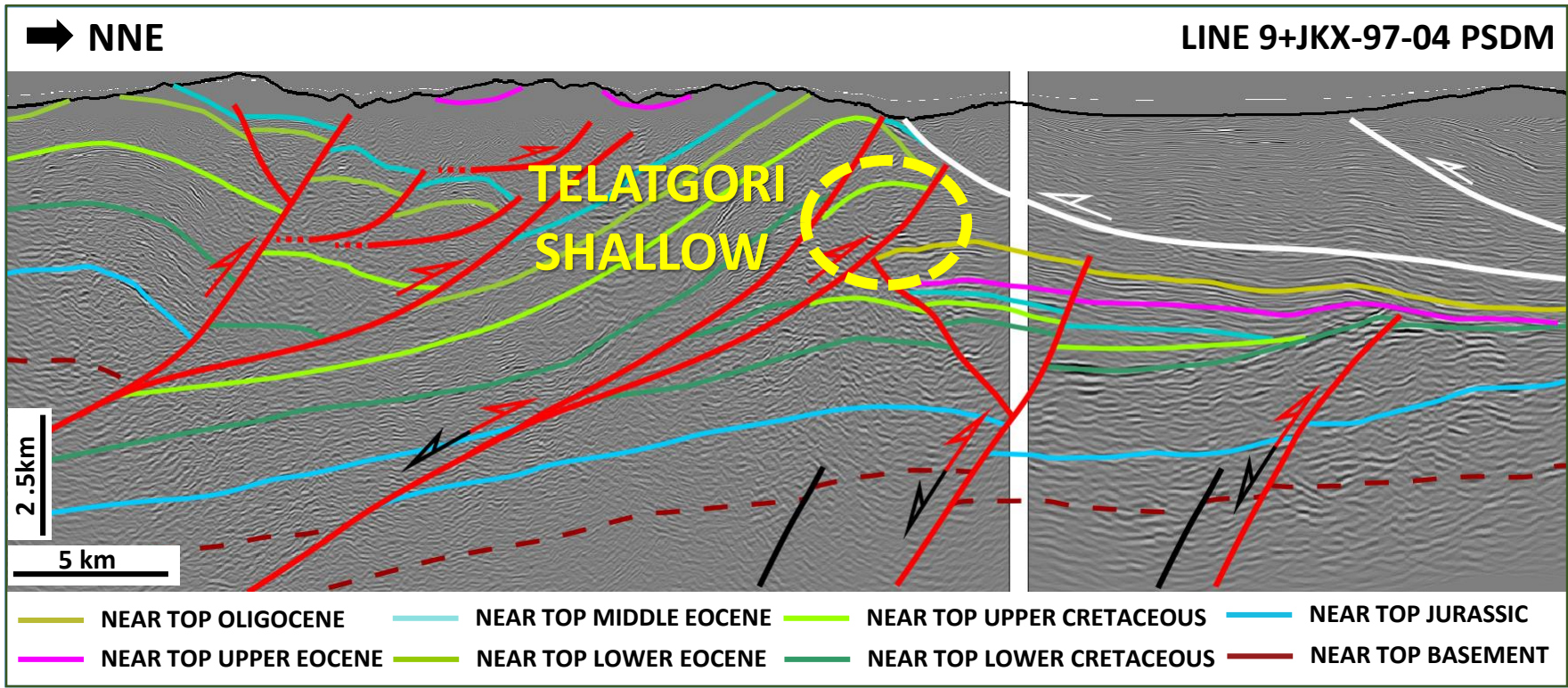
Telatgori & East-Telatgori Leads

- **SOURCE:** UPPER EOCENE SHALES
- **RESERVOIRS:**
  - UPPER CRETACEOUS CARBONATES AND TUFF-SANDSTONES (FRACTURED RESERVOIR)
- **SEAL:** INTRA-FORMATIONAL CRETACEOUS SHALES AND MARLS + LOWER EOCENE SHALES
- **TRAP:**
  - SUB-THRUST THRUST-RELATED ANTICLINE
  - CULMINATION AT 580 TVDSS
  - 2.5 x 6 km (MAX WIDHT x ALONG-STRIKE LENGHT)
- **BLOCKS:** XI, VIII

660 MMbbl (P50) STOIIP

MIDDLE EOCENE + U. CRETACEOUS (UNRISKED)



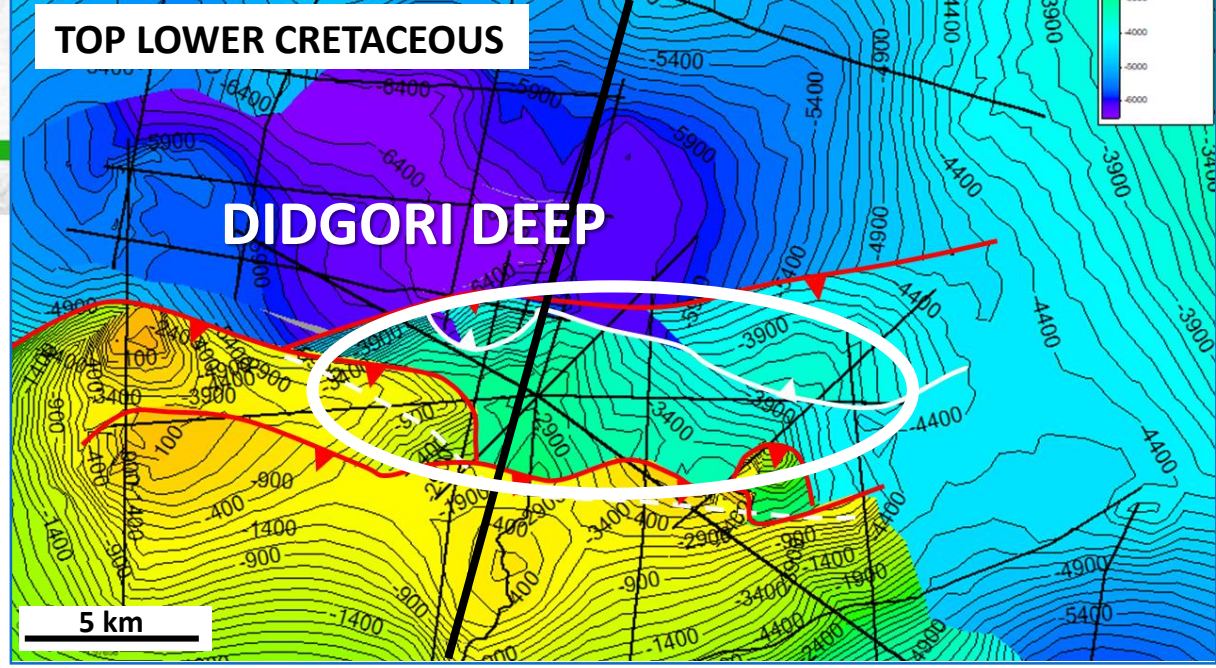


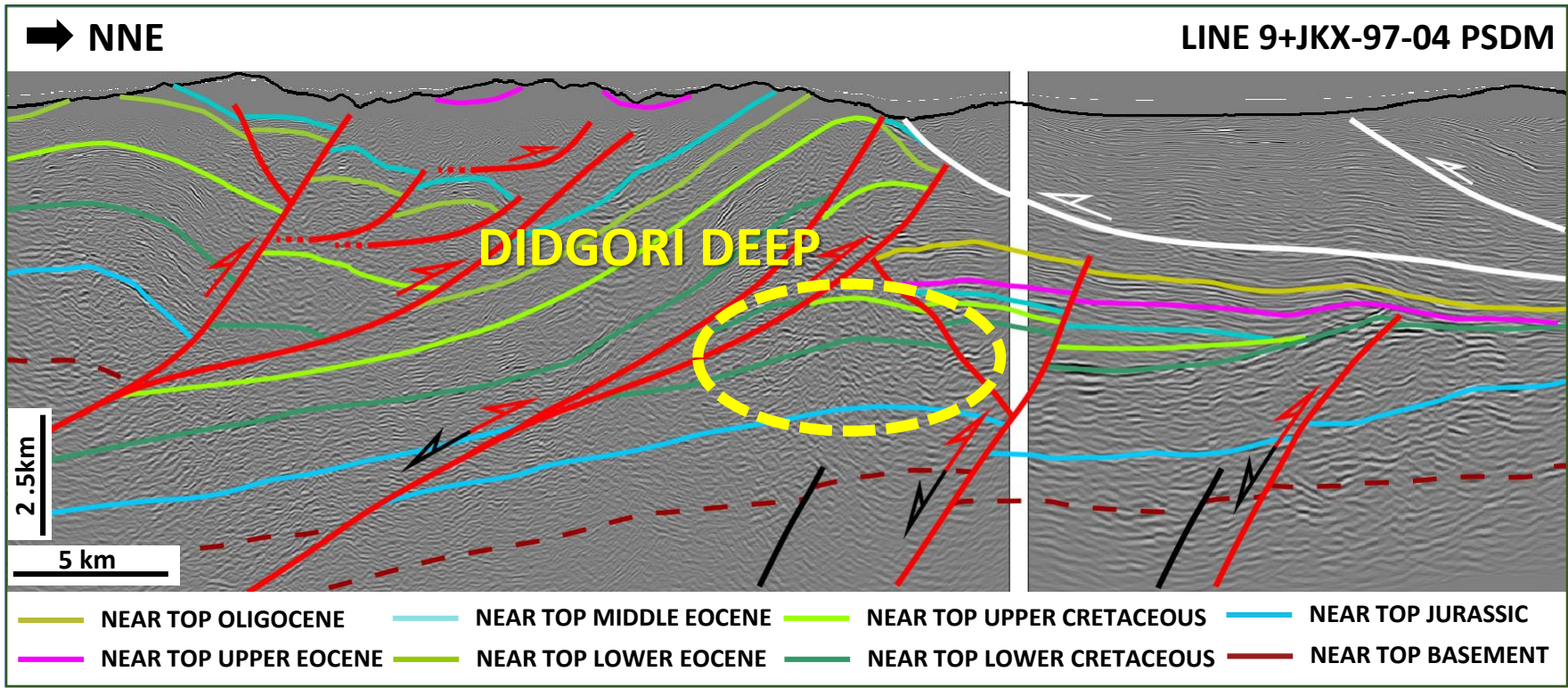
Didgori Deep Lead

- **SOURCE:** POTENTIAL JURASSIC SHALES
- **RESERVOIRS:**
  - LOWER CRETACEOUS TUFF-SANDSTONES AND VOLCANIC ROCKS (FRACTURED RESERVOIR)
- **SEAL:** INTRA-FORMATIONAL CRETACEOUS SHALES AND MARLS
- **TRAP:**
  - SUB-THRUST THRUST-RELATED ANTICLINE
  - CULMINATION AT 2500 TVDSS
  - 5 x 13 km (MAX WIDHT x ALONG-STRIKE LENGHT)
- **BLOCKS:** XI, VIII

800 MMbbl (P50) STOIIP

L. CRETACEOUS (UNRISKED)

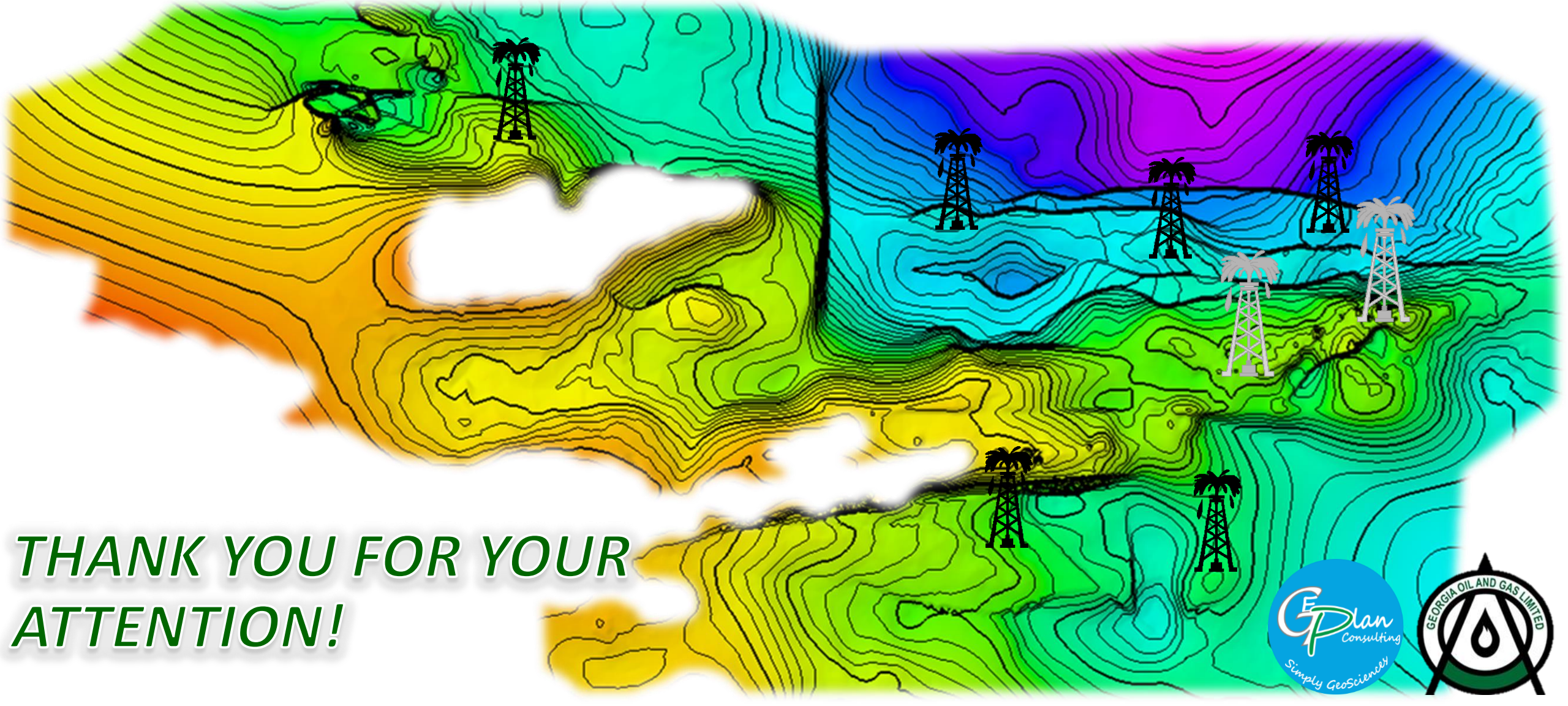




Main Take Away Messages

- A CONSIDERABLE AMOUNT OF REPROCESSED TIME- AND DEPTH-MIGRATED SEISMIC DATA WERE INTEGRATED AND INTERPRETED FOR THE FIRST TIME THROUGHOUT THE KURA-KARTLI BASIN
- THE INTERPRETATION WAS CONSTRAINED BY SEVERAL WELL TOPS, BY SURFACE GEOLOGY MAPPED IN DETAIL CORROBORATED BY GRAV-MAG
- A SERIES OF ATTRACTIVE EXPLORATION TARGETS WERE IDENTIFIED WITH SOME OF THEM (NORIO) CONSIDERED TO BE SIMILAR TO THE SAMGORI FIELDS (SAMGORI LOOKALIKE) IN WHICH >200 MMbbls WERE PRODUCED
- THE MAIN RESERVOIR IS CONSIDERED TO BE THE MIDDLE EOCENE FRACTURED VOLCANOGENIC SEDIMENTS BUT POTENTIAL WAS IDENTIFIED ALSO IN THE UPPER EOCENE AND UPPER-LOWER CRETACEOUS
- THE IDENTIFIED TRAPS ARE THRUST-RELATED FOLDS OR INVERSION STRUCTURES IN SUB-THRUST POSITION
- POTENTIAL ADDITIONAL DRILLING CANDIDATES ARE ADDED TO THE PROSPECT PORTFOLIO BY ONGOING INTERPRETATION OF ADDITIONAL SEISMIC DATA DURING THE PROGRESS OF THE EXPLORATION WORK PROGRAMME

"There is no blue without yellow and without orange, and if you put in the blue, then you must put in the yellow and orange too, mustn't you?" (V. Van Gogh)



THANK YOU FOR YOUR ATTENTION!

GEOPlan Consulting
Simply GeoScience

GEORGIA OIL AND GAS LIMITED