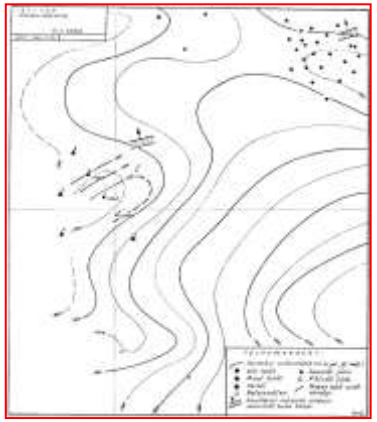
New field development plan of a HC field from the '70s on the Danube-Tisza Interfluve

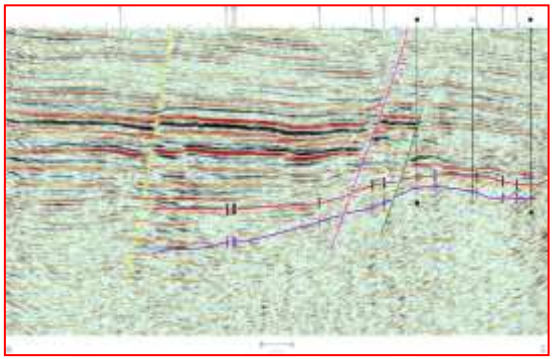
Dávid Holló, Anita Tóth
MOL Ltd. E&P Budapest

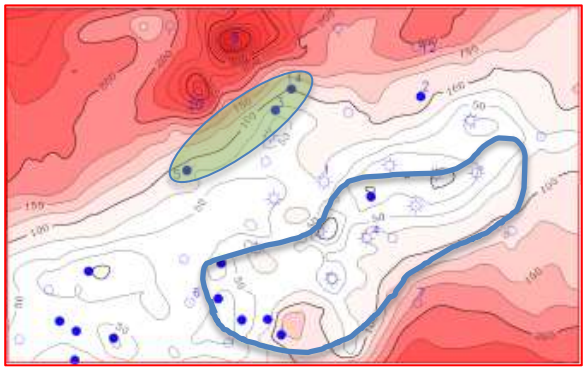
Meeting of Young Geoscientists Conference
28 March 2014, Balatonföldvár

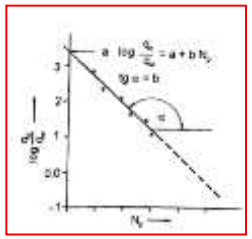
MOL GROUP

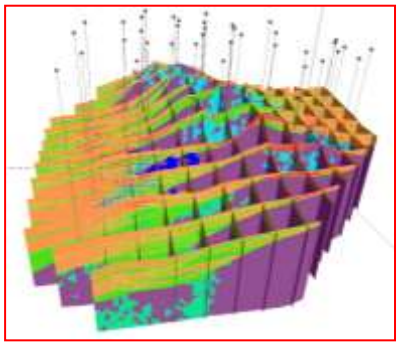
Table of contents





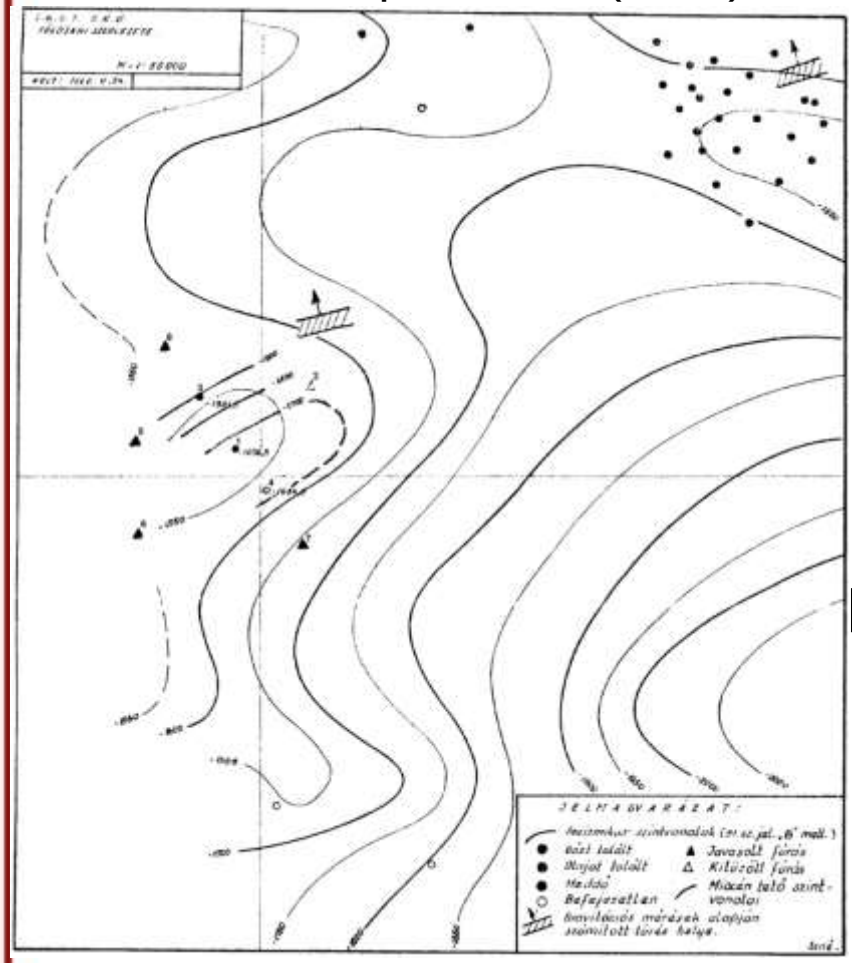






Introduction

Contour map of BPLF (1966)



Aims:

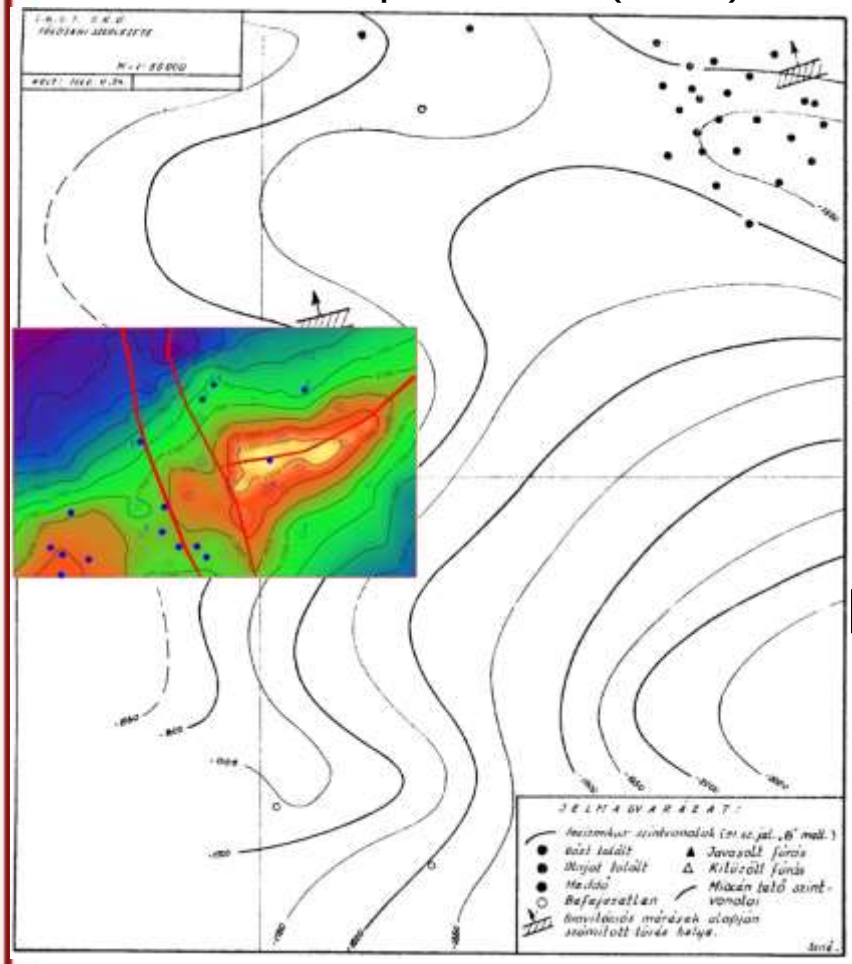
- Re-interpretation of seismic data
- 3D geological model
- Production history models
- New field development plan

Dataset:

- 2D seismic lines, picks, well logs
- Production data

Introduction

Contour map of BPLF (1966)



Re-Interpreted part of BPLF(2013)

Aims:

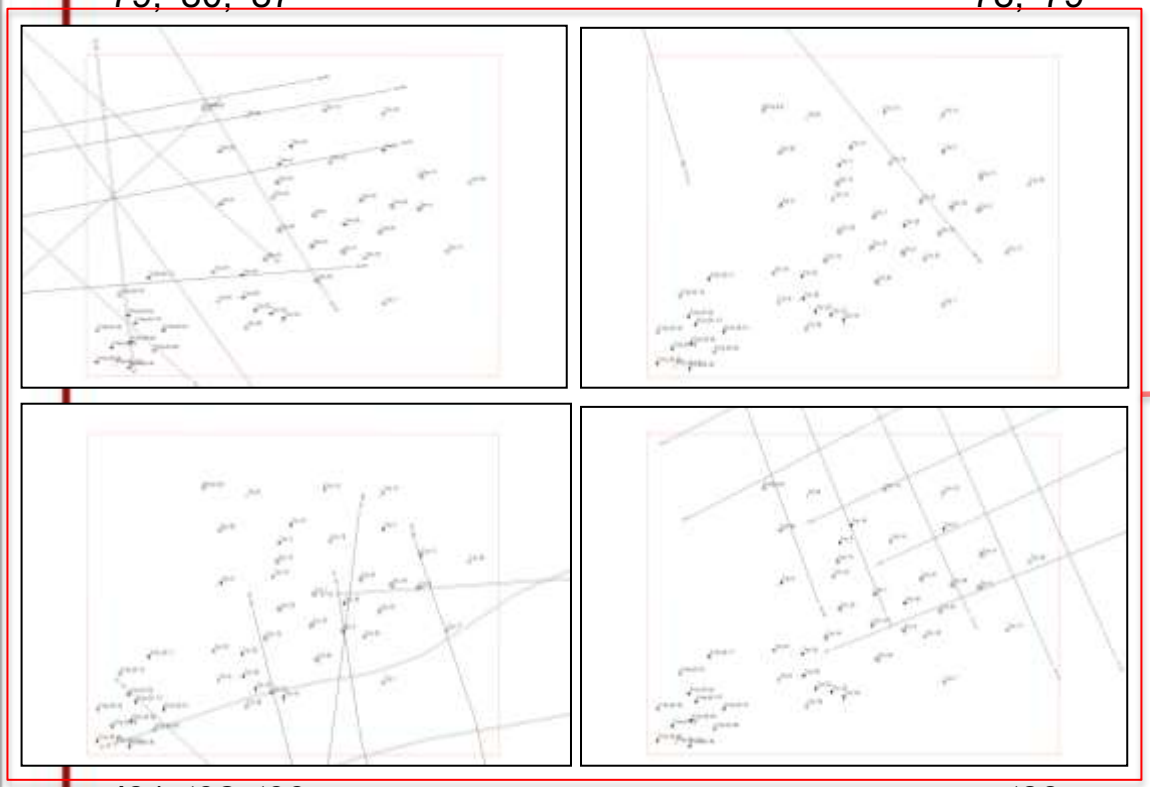
- Re-interpretation of seismic data
- 3D geological model
- Production history models
- New field development plan

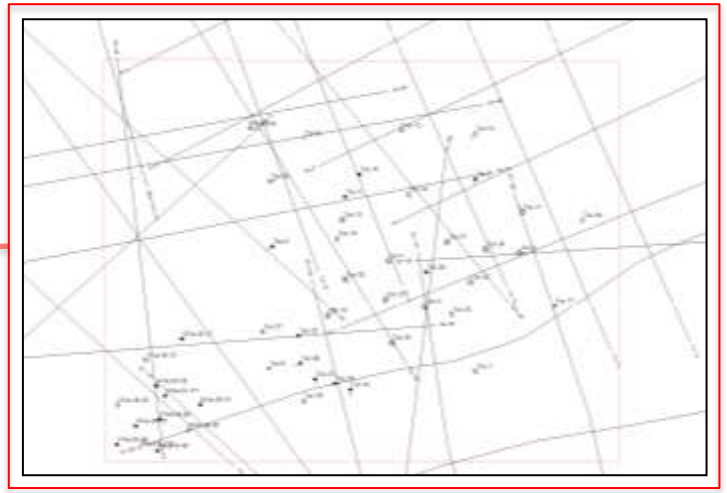
Dataset:

- 2D seismic lines, picks, well logs
- Production data

Seismic Re-Interpretation

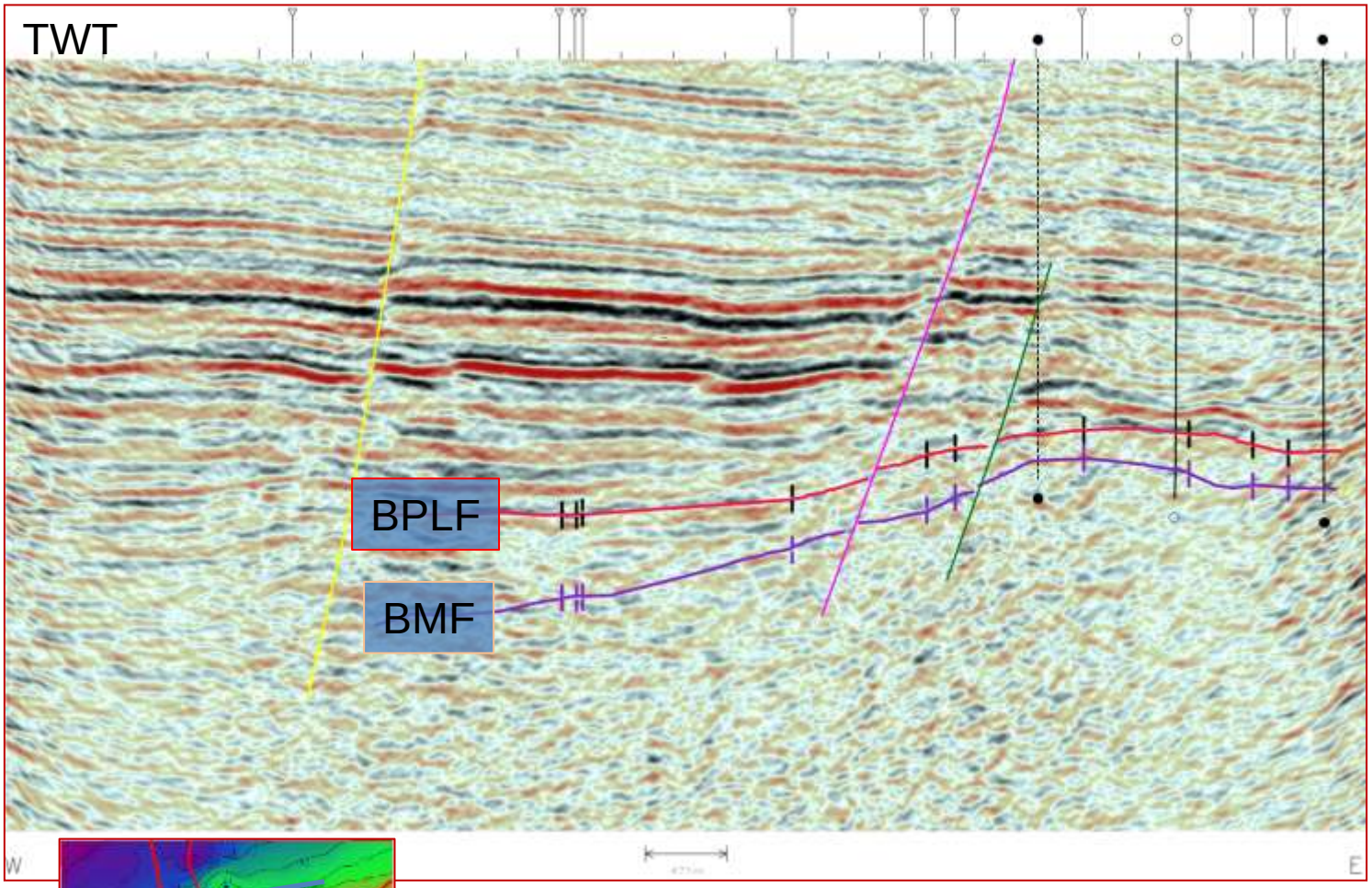
Seismic coverage map(s)

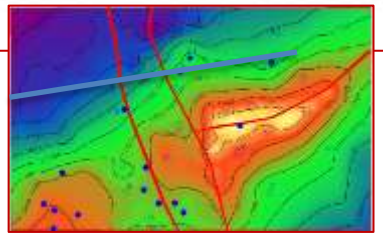




30 *2D* seismic lines
35 wells (+ 13 wells)

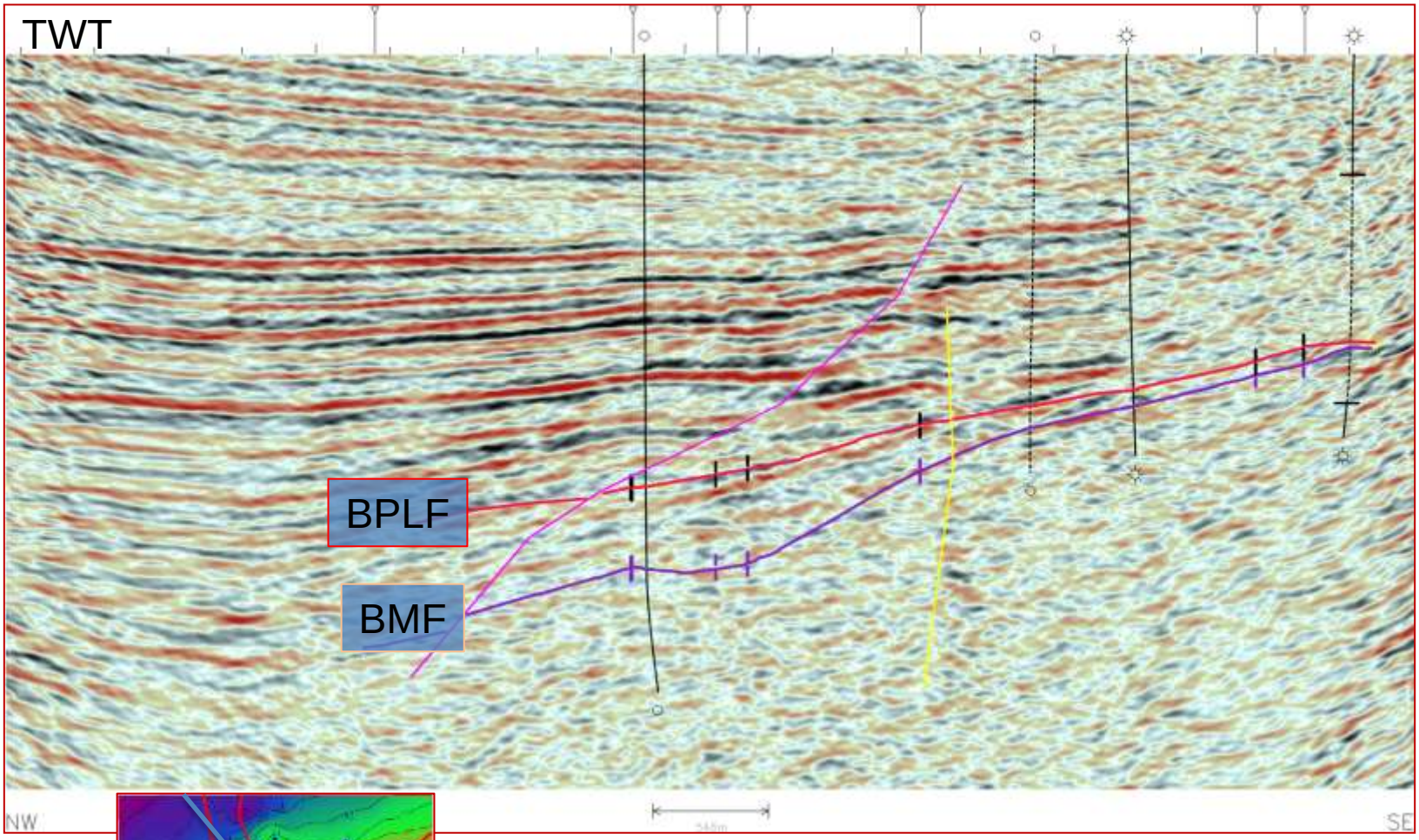
Seismic Re-Interpretation

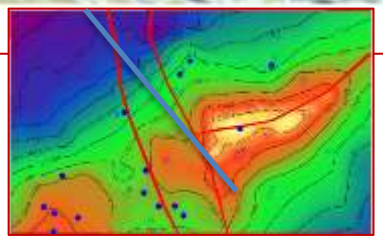




2D seismic section

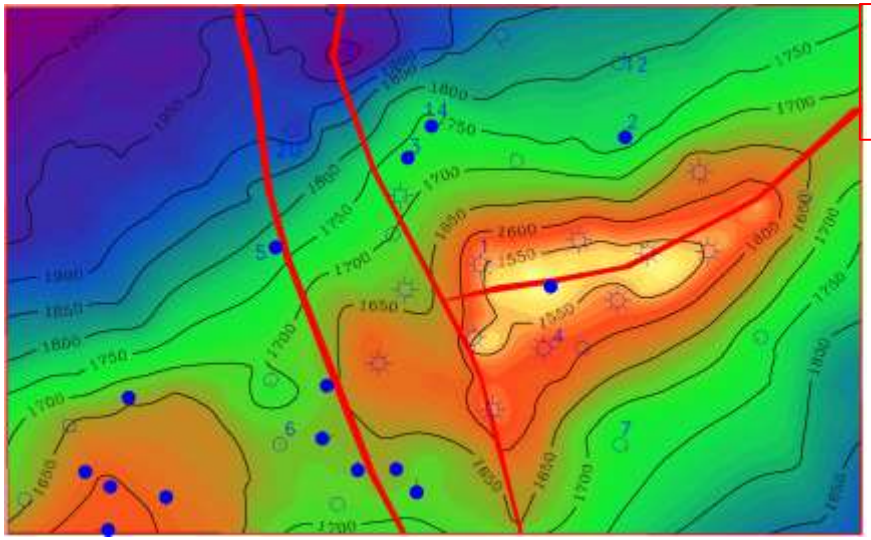
Seismic Re-Interpretation



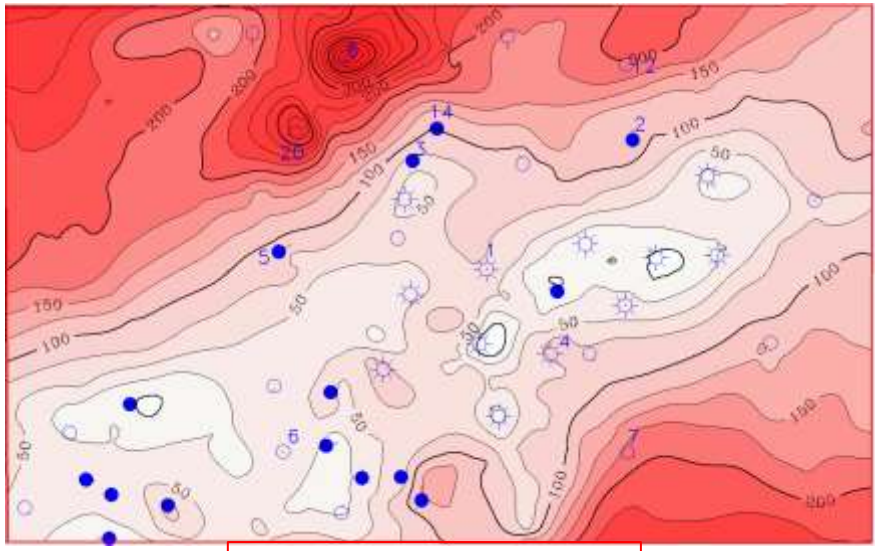


2D seismic section

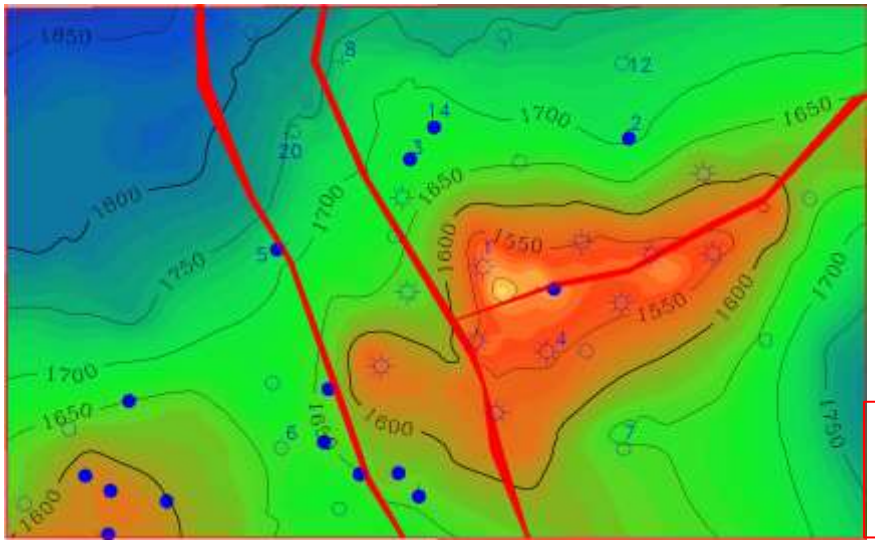
Seismic Re-Interpretation



Contour map of BPLF *(time)*

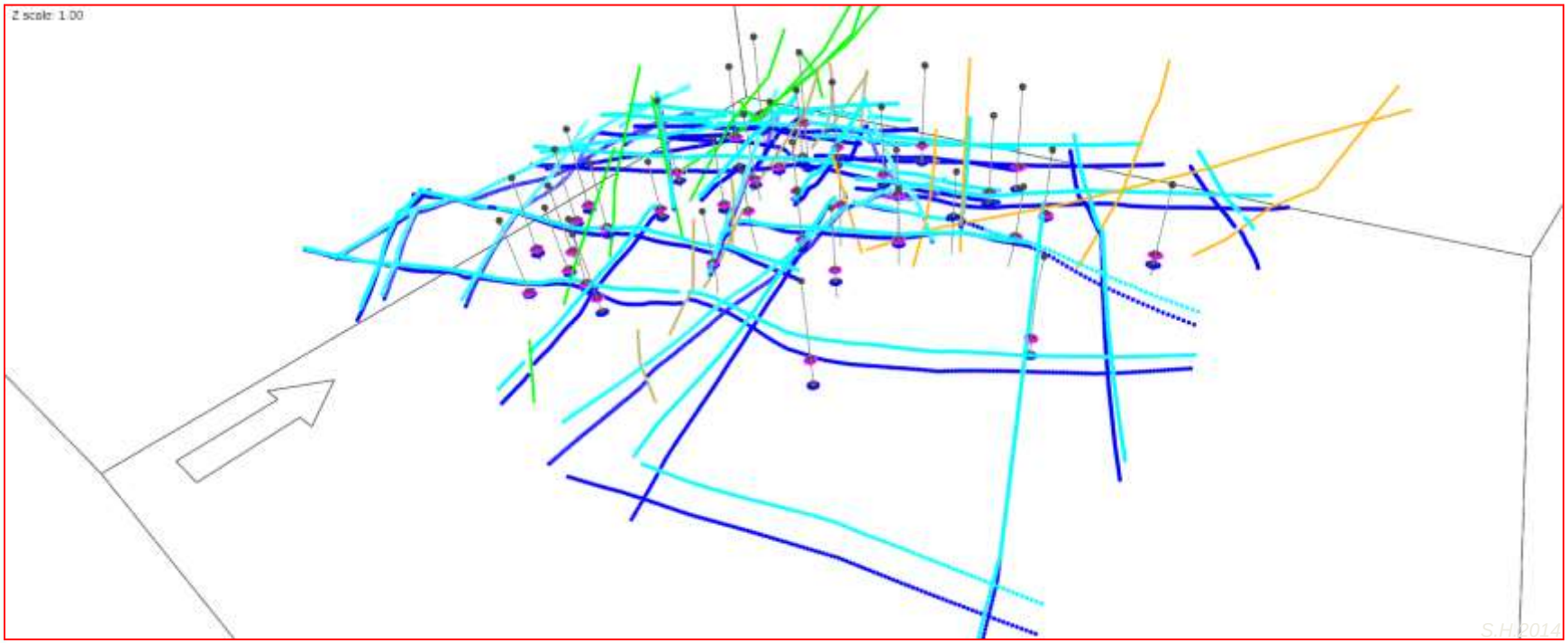


Isopachous map of miocene *(time)*

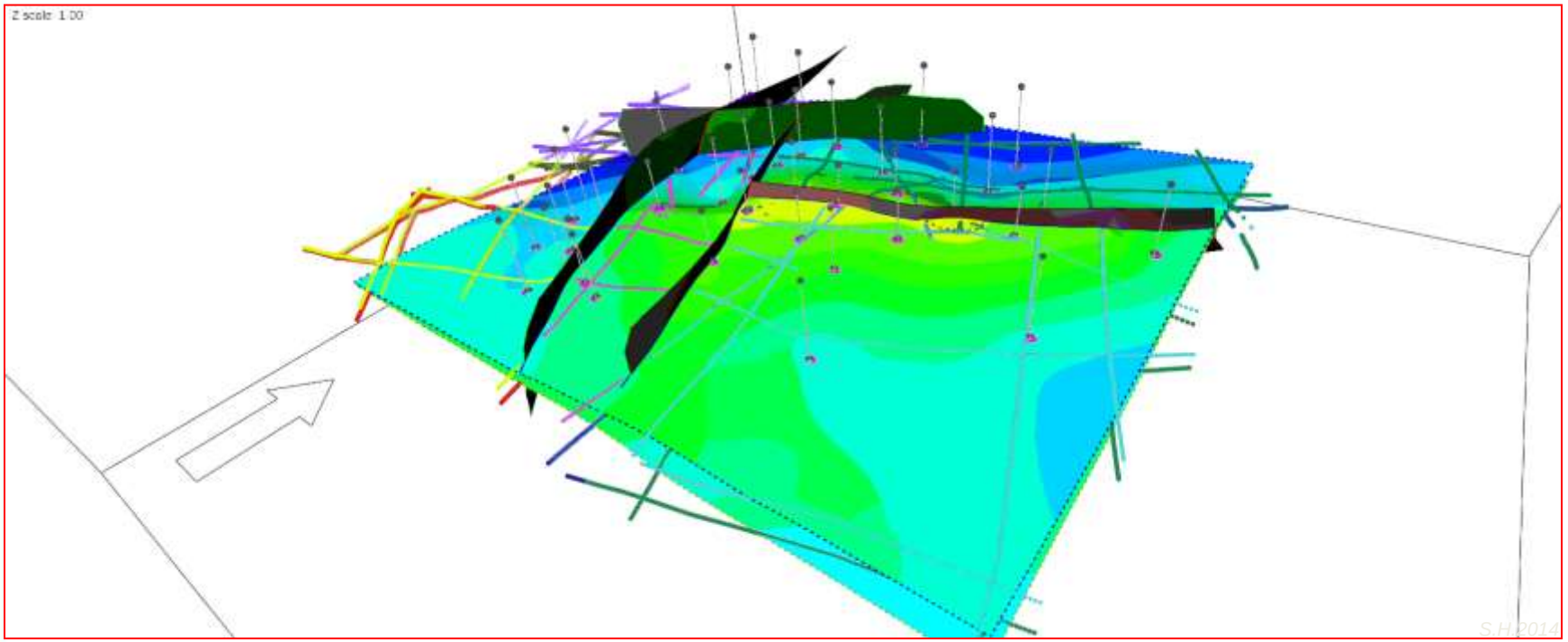


Contour map of BMF *(time)*

3D Geomodel *(depth)*

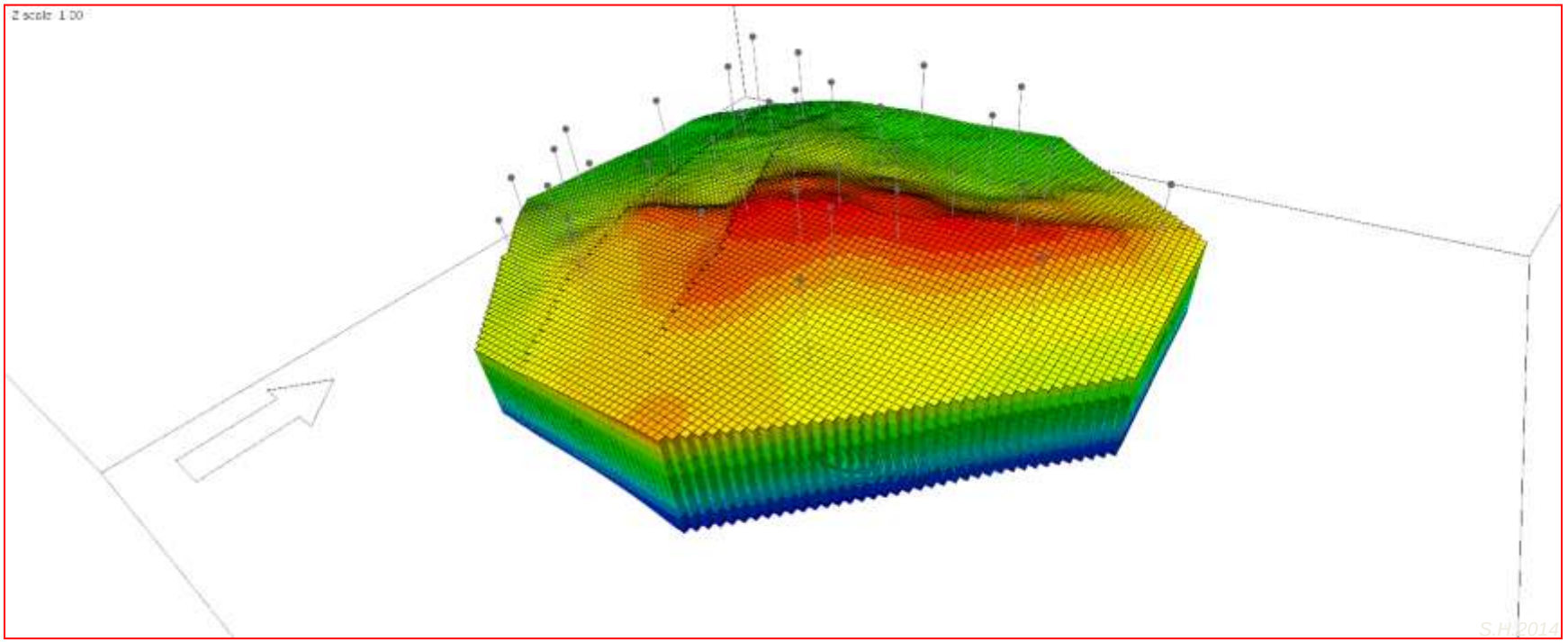


3D Geomodel *(depth)*



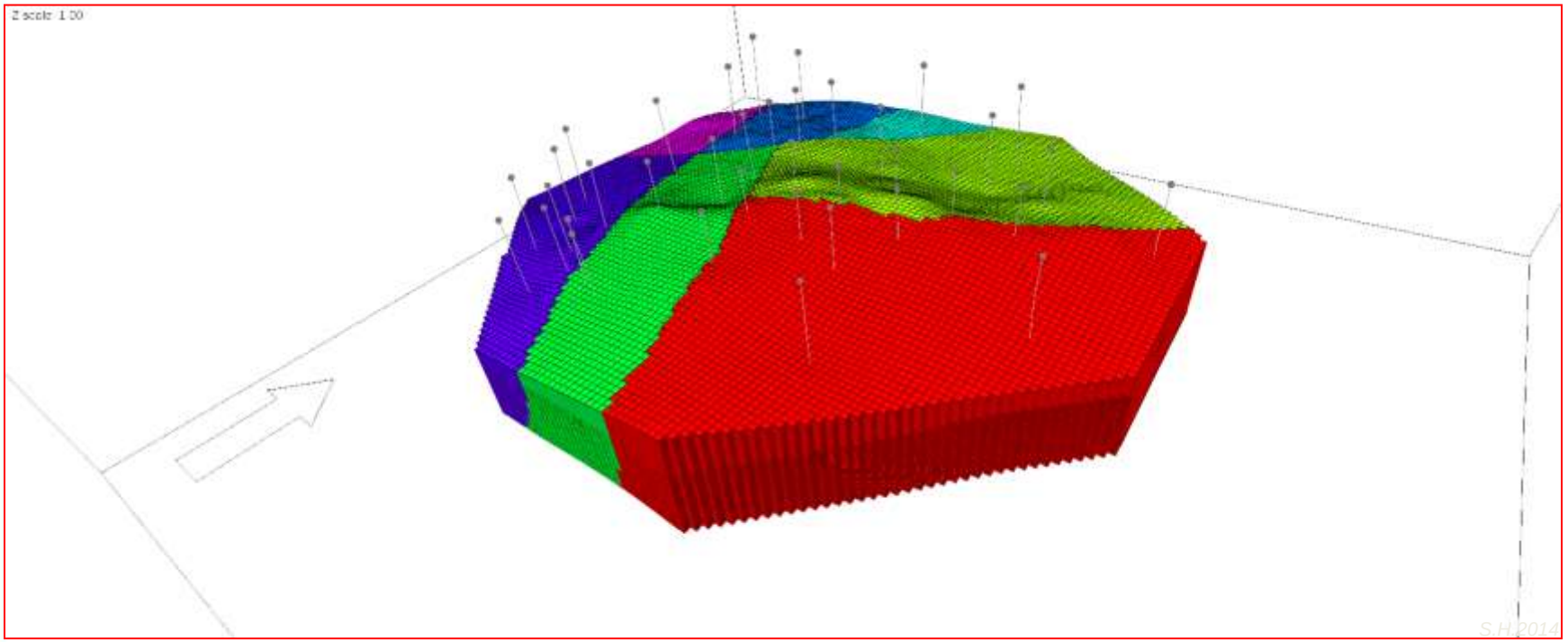
MOL GROUP

3D Geomodel *(depth)*



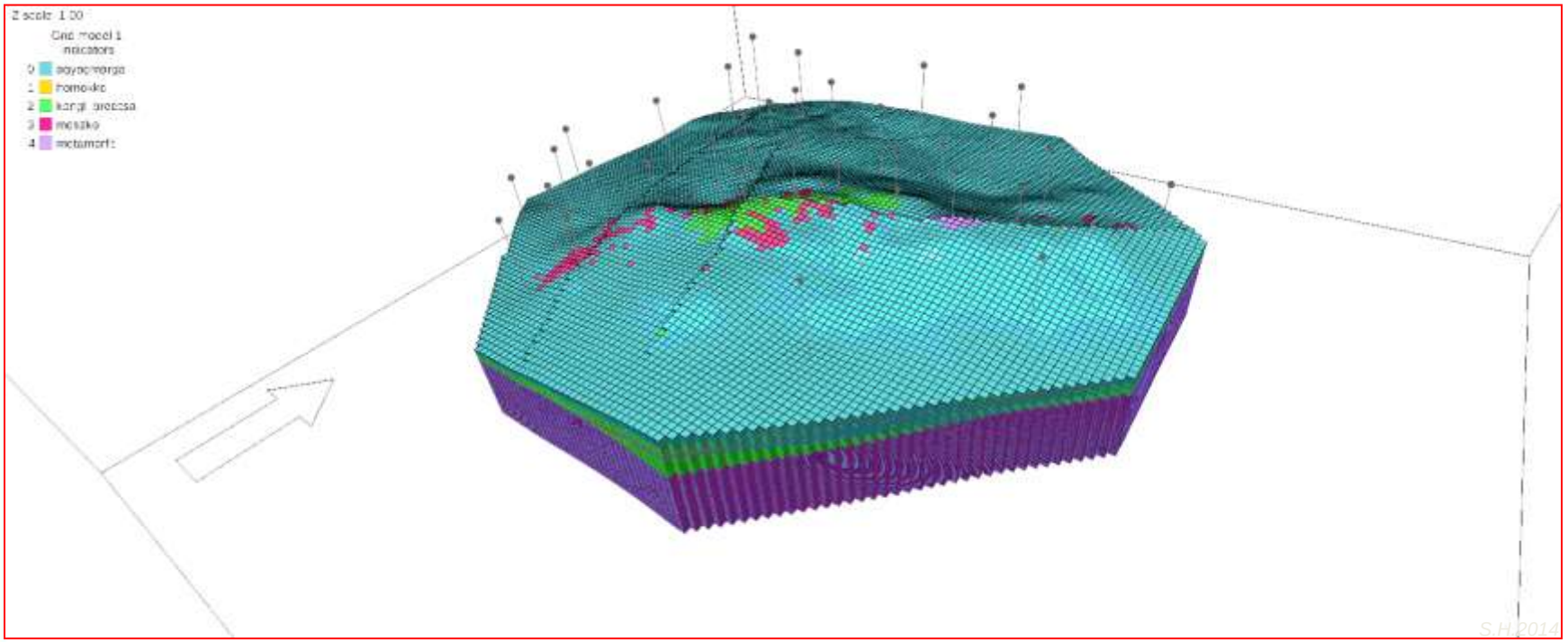
MOL GROUP

3D Geomodel *(depth)*



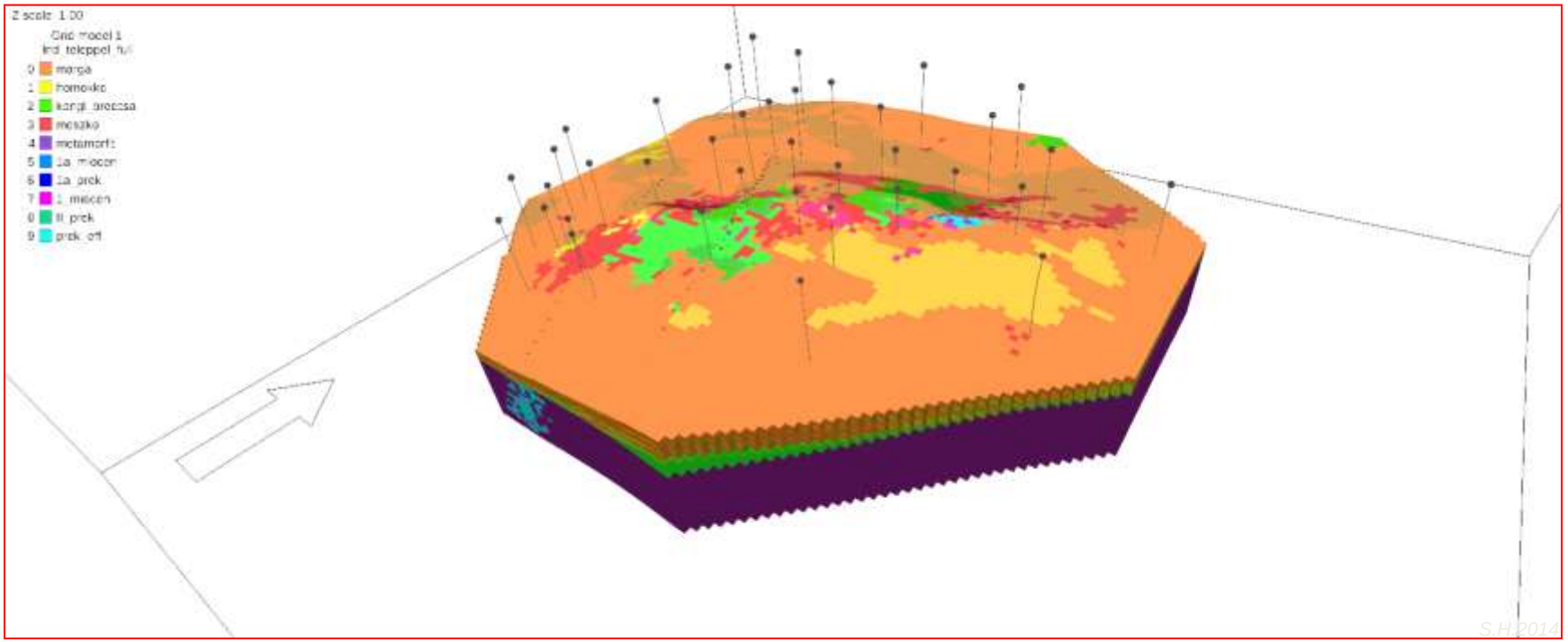
MOL GROUP

3D Geomodel *(depth)*



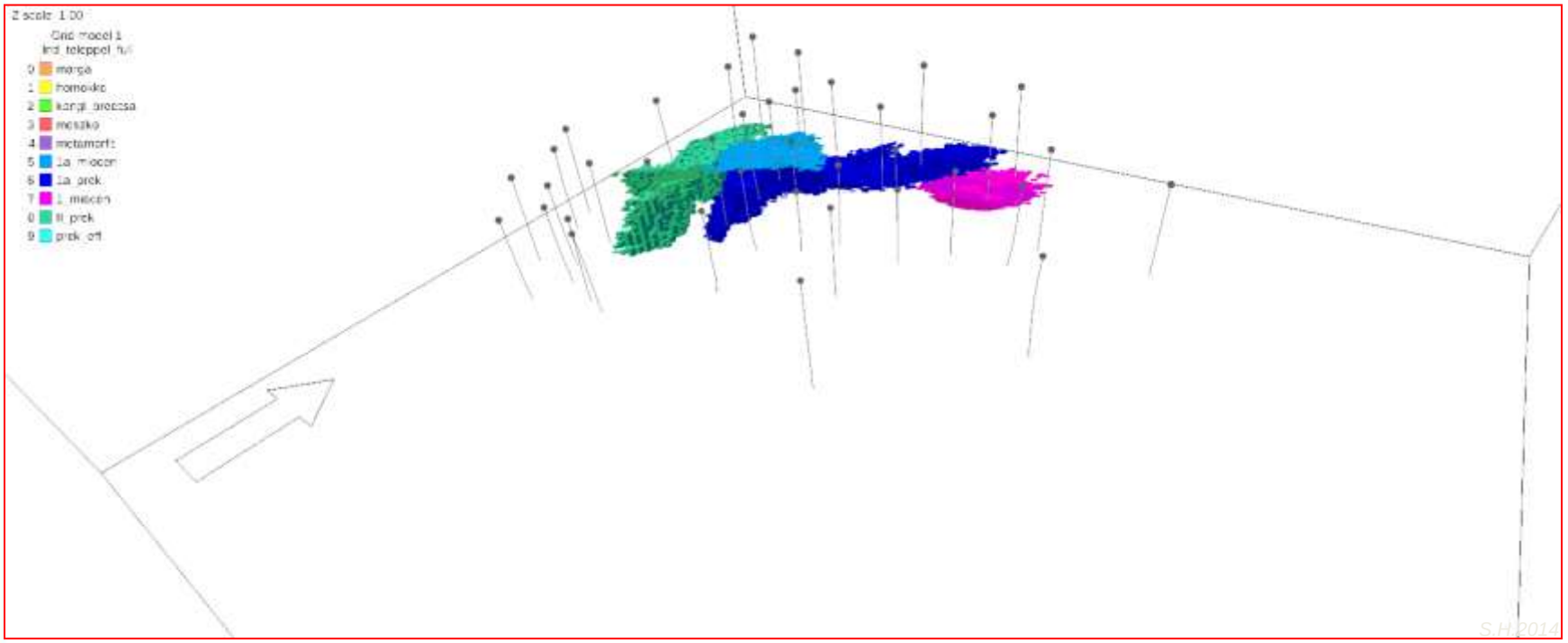
MOL GROUP

3D Geomodel *(depth)*

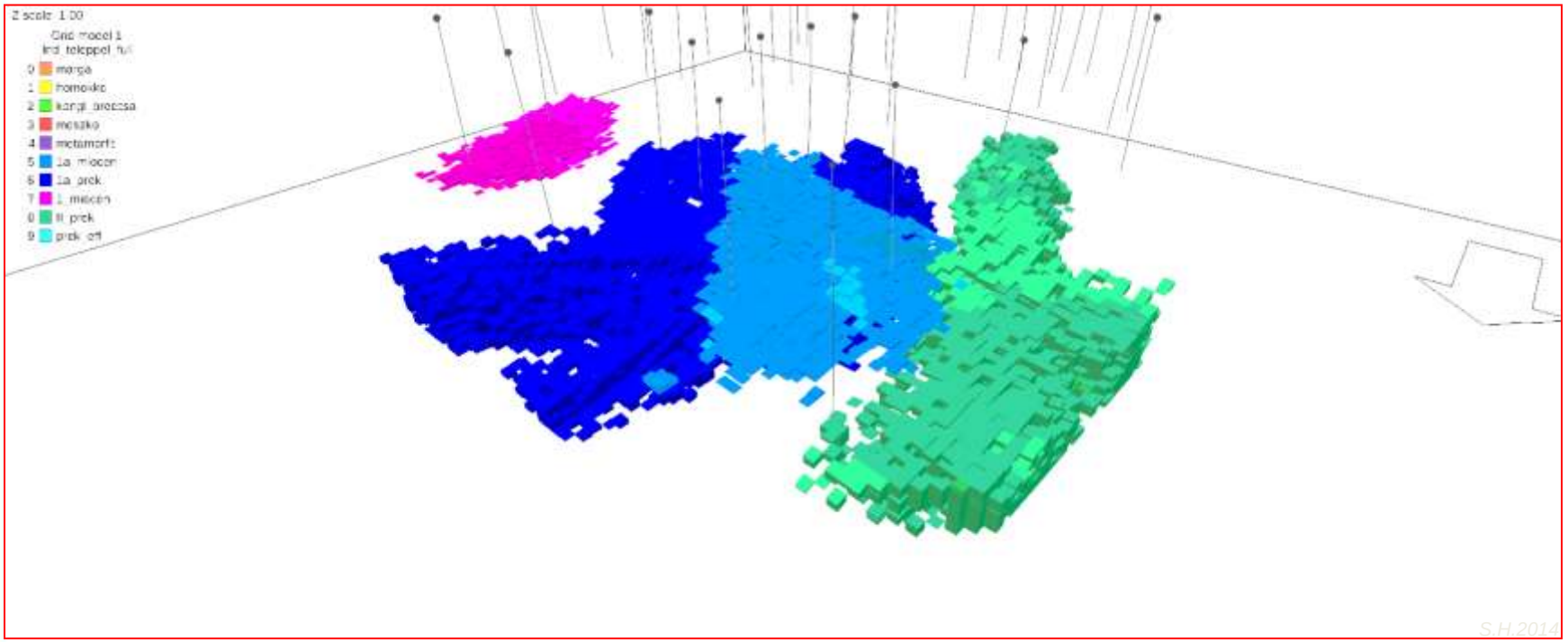


MOL GROUP

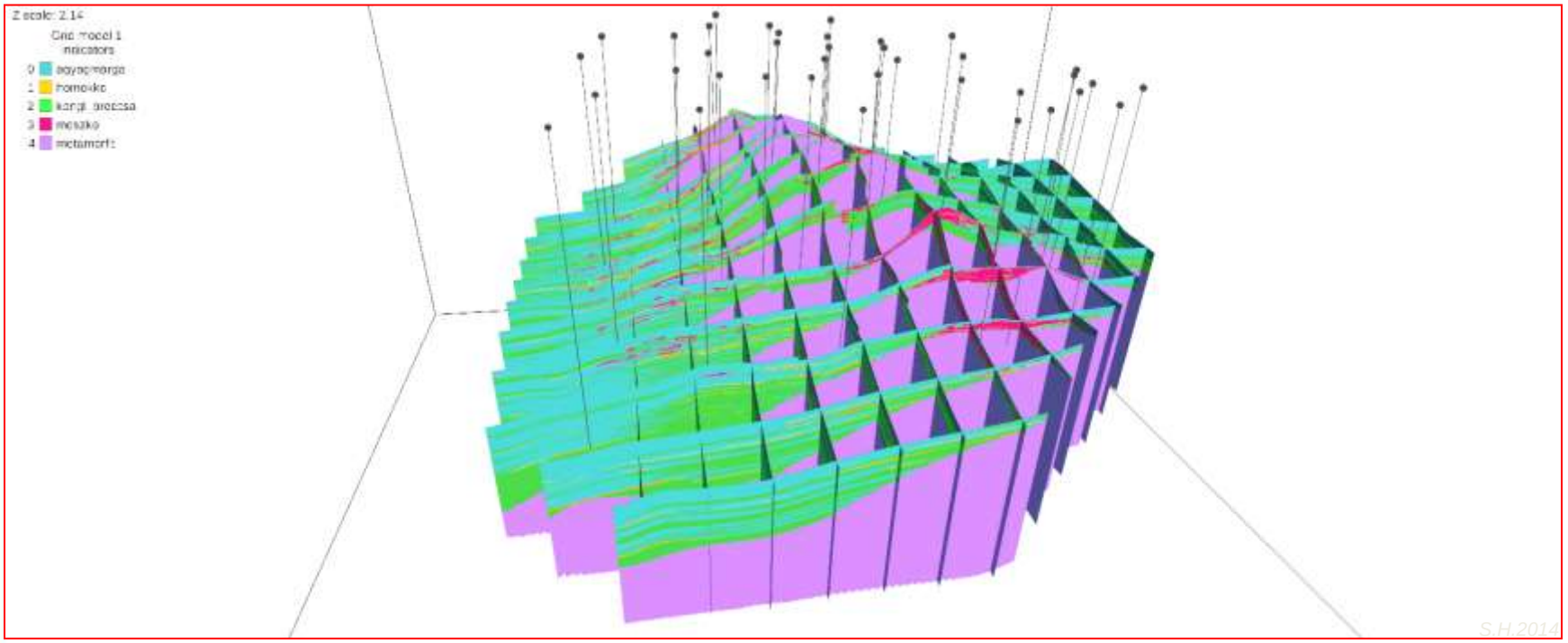
3D Geomodel *(depth)*



3D Geomodel *(depth)*

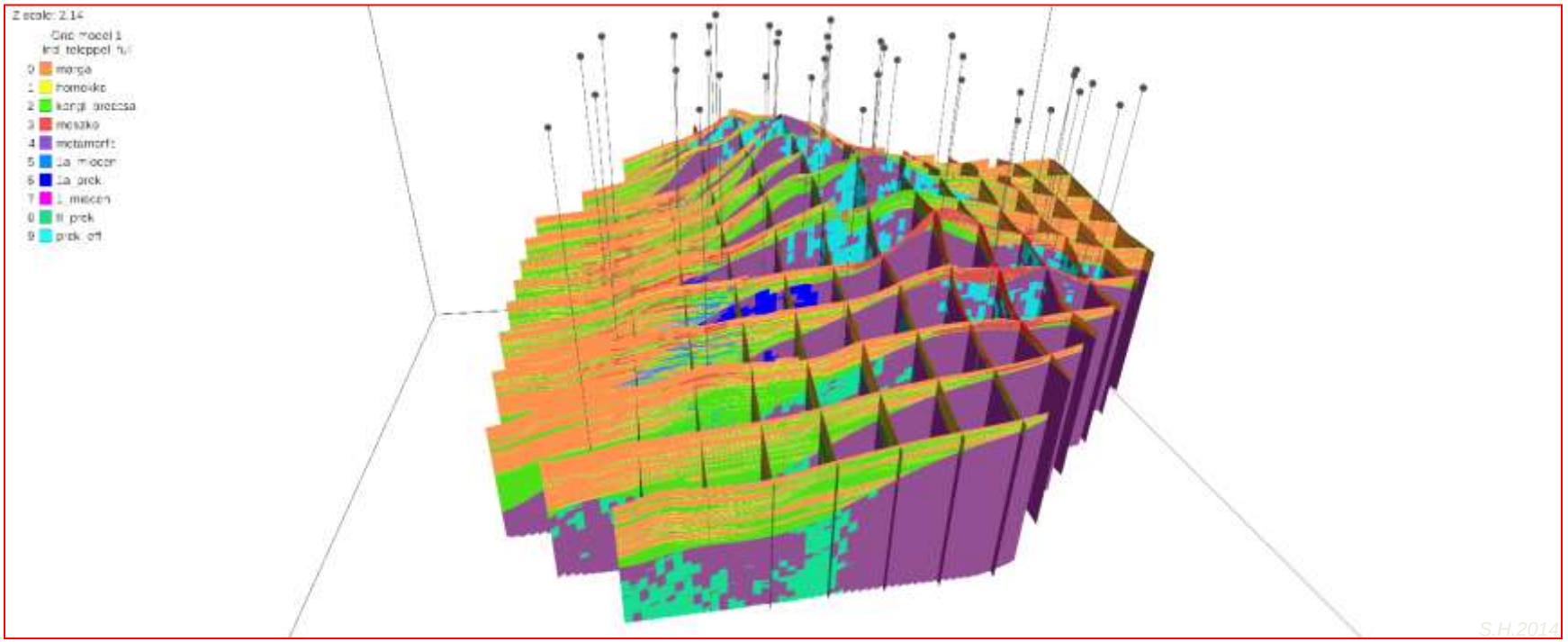


3D Geomodel *(depth)*



MOL GROUP

3D Geomodel *(depth)*



Basic Data

Reservoir properties:

	OWC (mtsza)	Initial Reservoir Pressure (bar)	Initial Reservoir Temperature (°C)	Reservoir Type	Driving Mechanism
'A' Reservoir	2026	217.74	128	Undersaturated oil	Inflexible Water Drive
'B' Reservoir	1998	217.3	128	Undersaturated oil	Flexible Water Drive
'C' Reservoir	2085	211.57	128	Undersaturated oil	Flexible Water Drive

Oil properties:

	A Reservoir	B Reservoir	C Reservoir
Stock Tank Oil (kg/m^3)	907.1	898.3	911.7

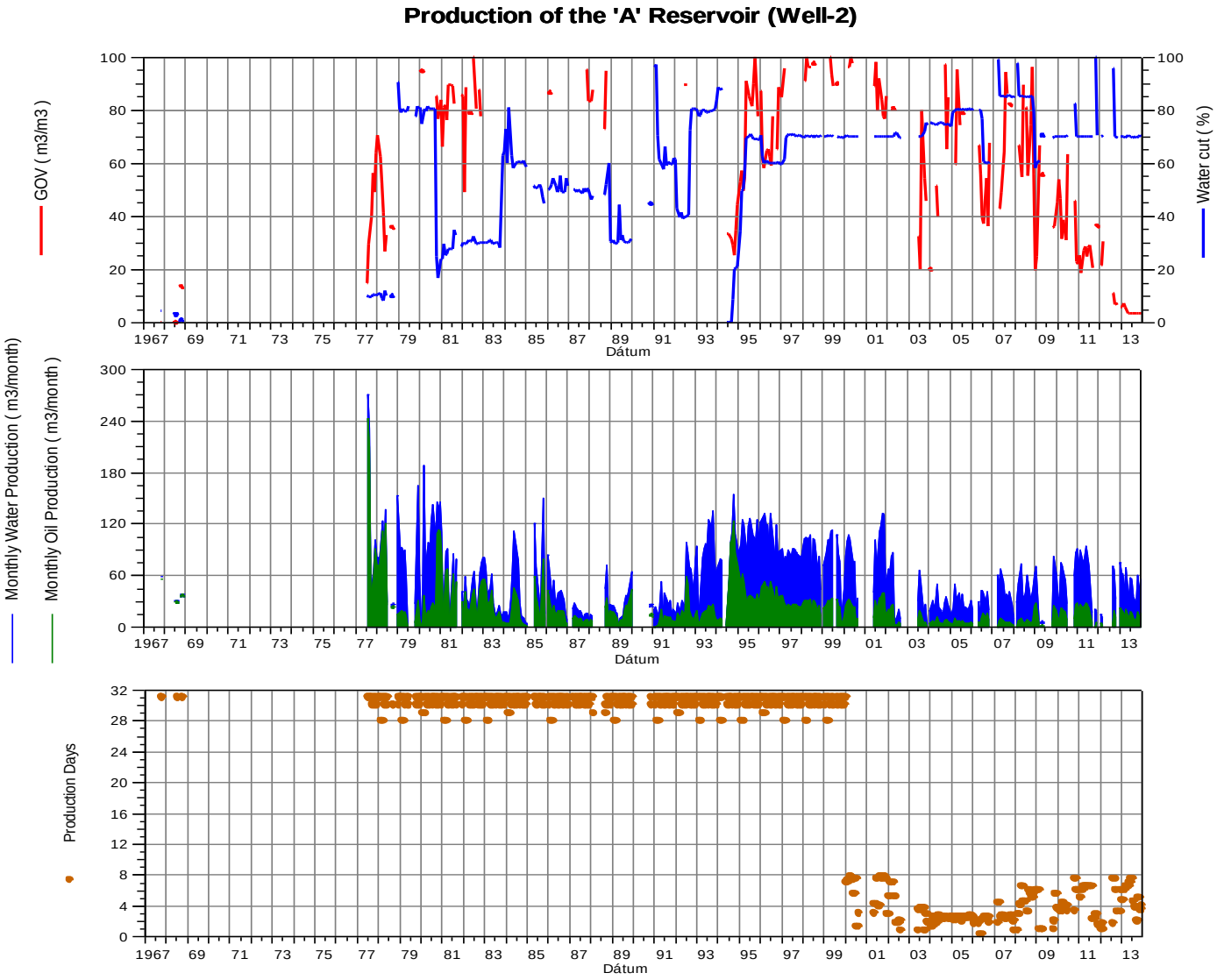
PVT properties:

	C reservoir
Density at Reservoir Conditions (kg/m^3)	796
Bubble Point Pressure (bar)	124
Initial Formation Volume Factor (m^3/m^3)	1.178
Viscosity at Reservoir Conditions (cP)	2.55
GOR (m^3/m^3)	35.5
Gas Relative Density	0.815

Produced Fluid Quantity

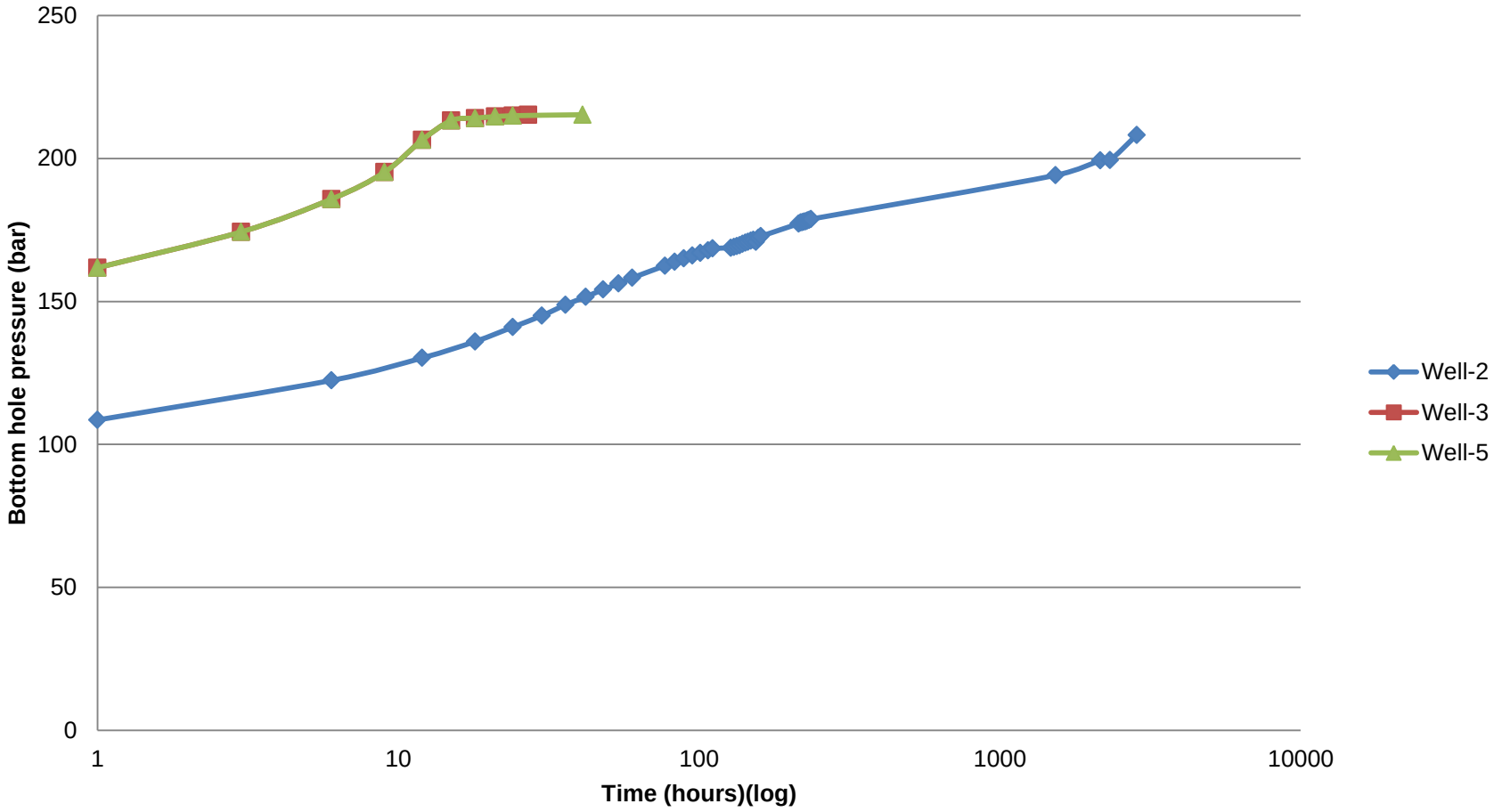
	'A' Reservoir	'B' Reservoir	'C' Reservoir	Summary
	Well-2	Well-3	Well-5	
Cumulative oil production (Scm)	8678	45511	25613	79802
Cumulative gas production (KScm)	872	2452	1955	5279
Cumulative water production (Scm)	12634	11619	71115	95368

Production History of ‘A’ Reservoir

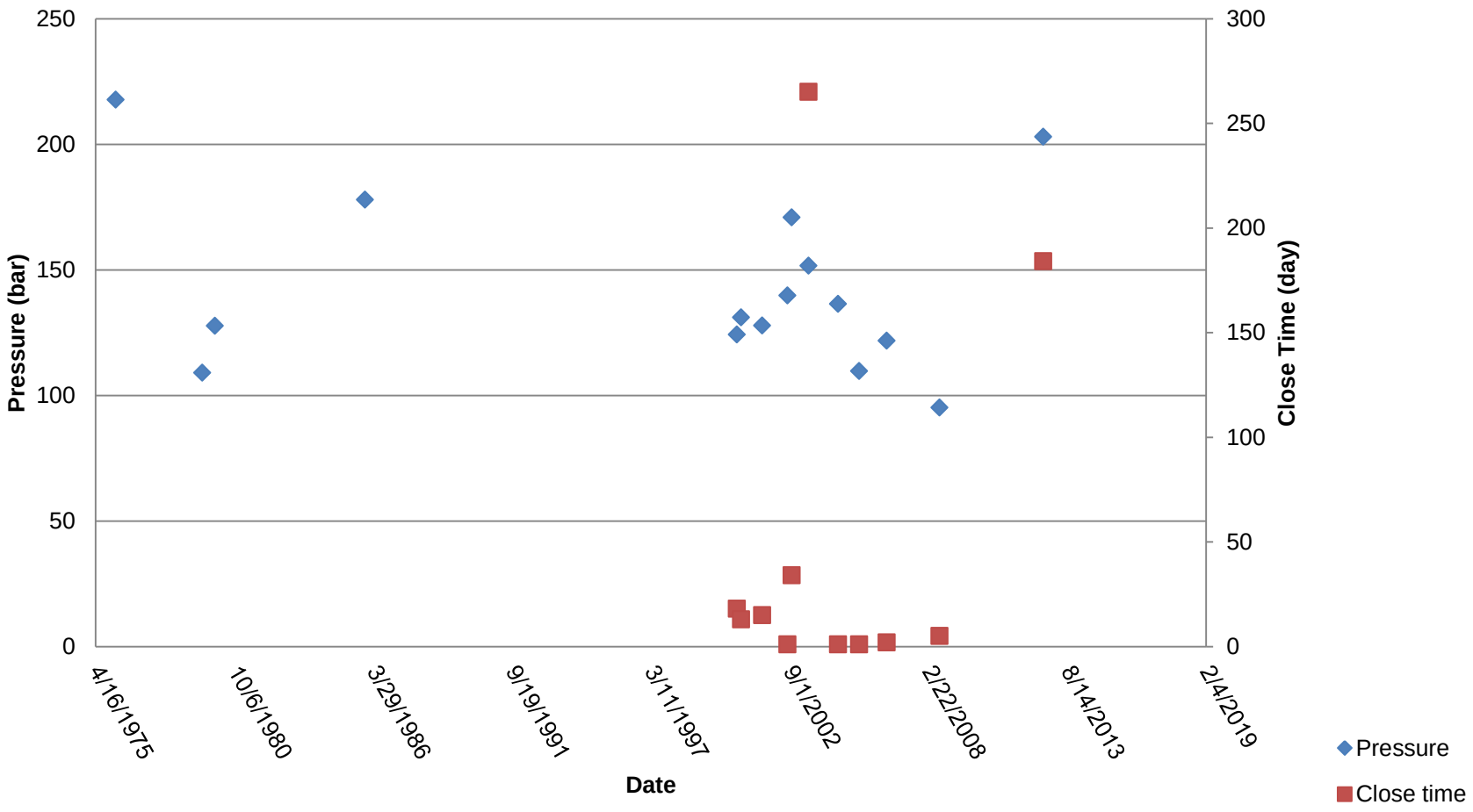


MOL GROUP

Pressure built-up

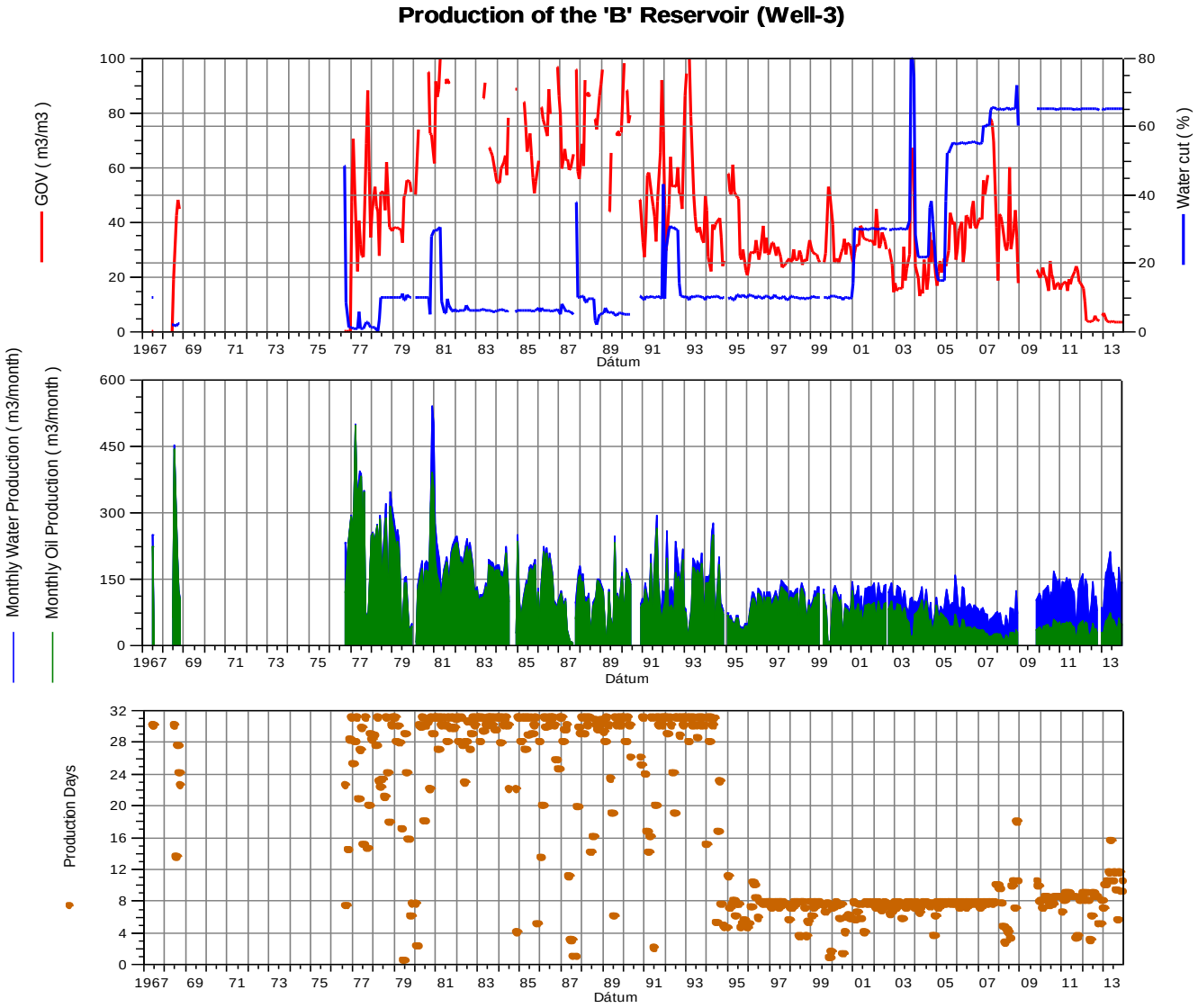


Pressure Data of Well-2



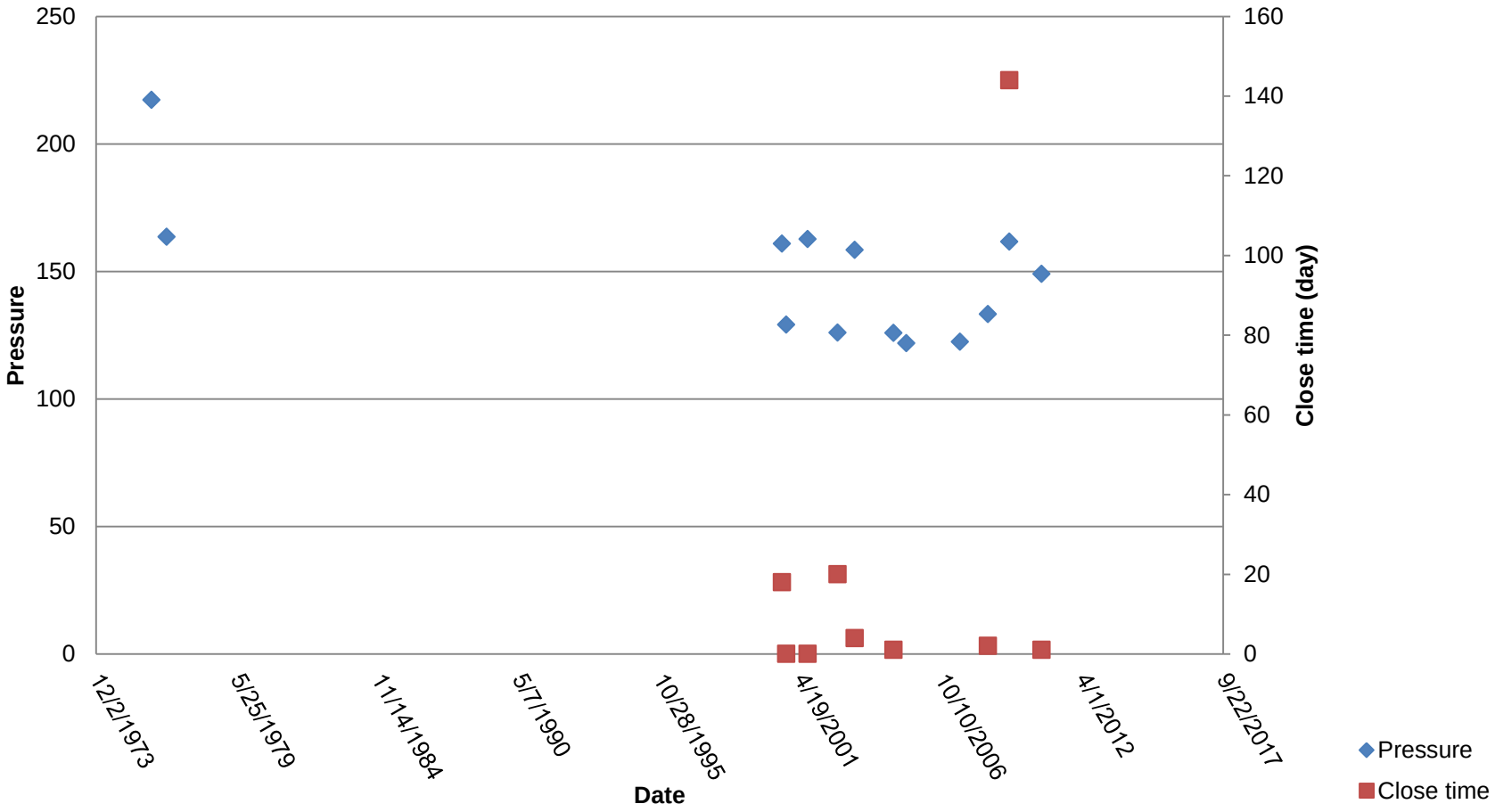
MOL GROUP

Production History of ‘B’ Reservoir

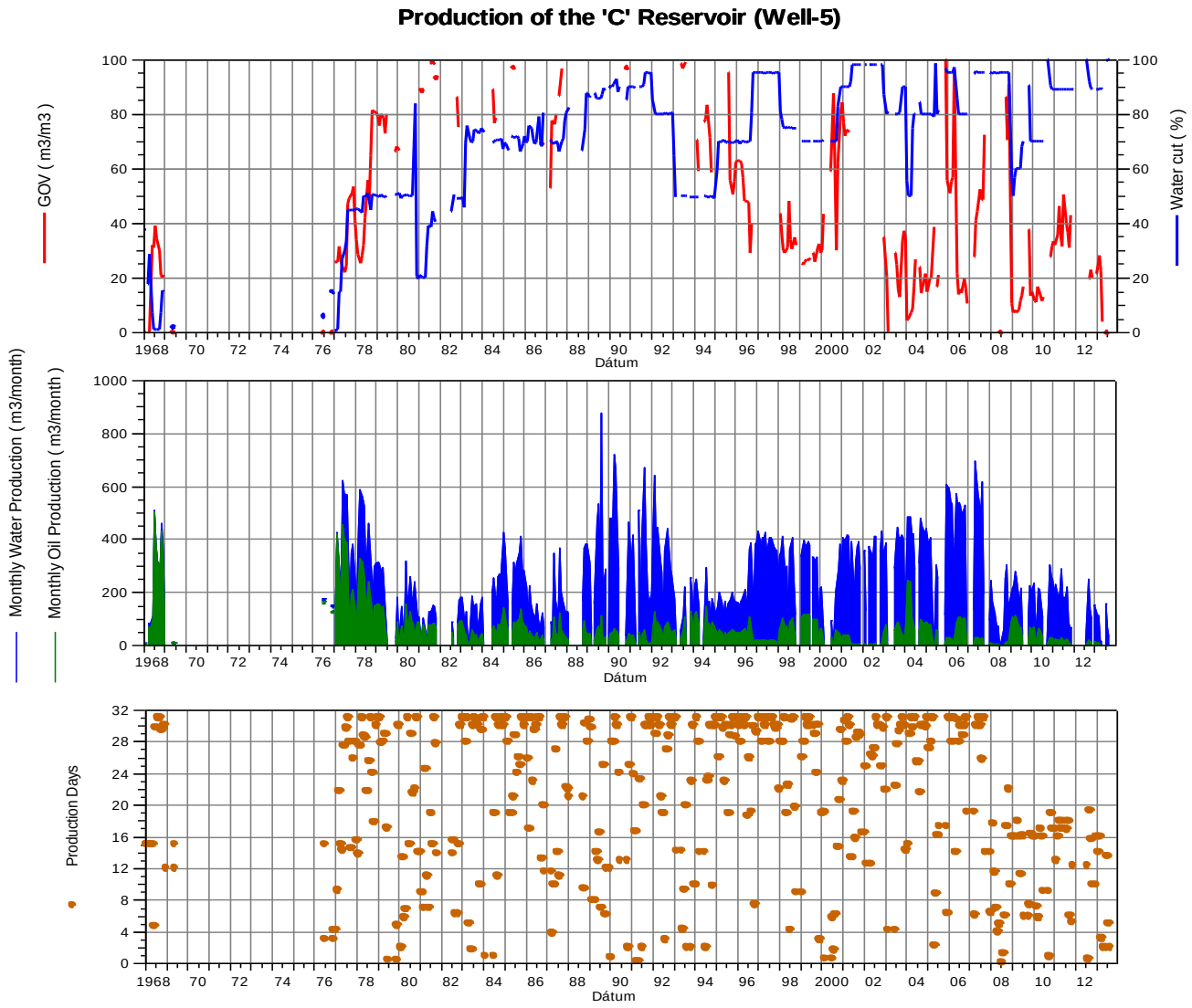


MOL GROUP

Pressure Data of Well-3

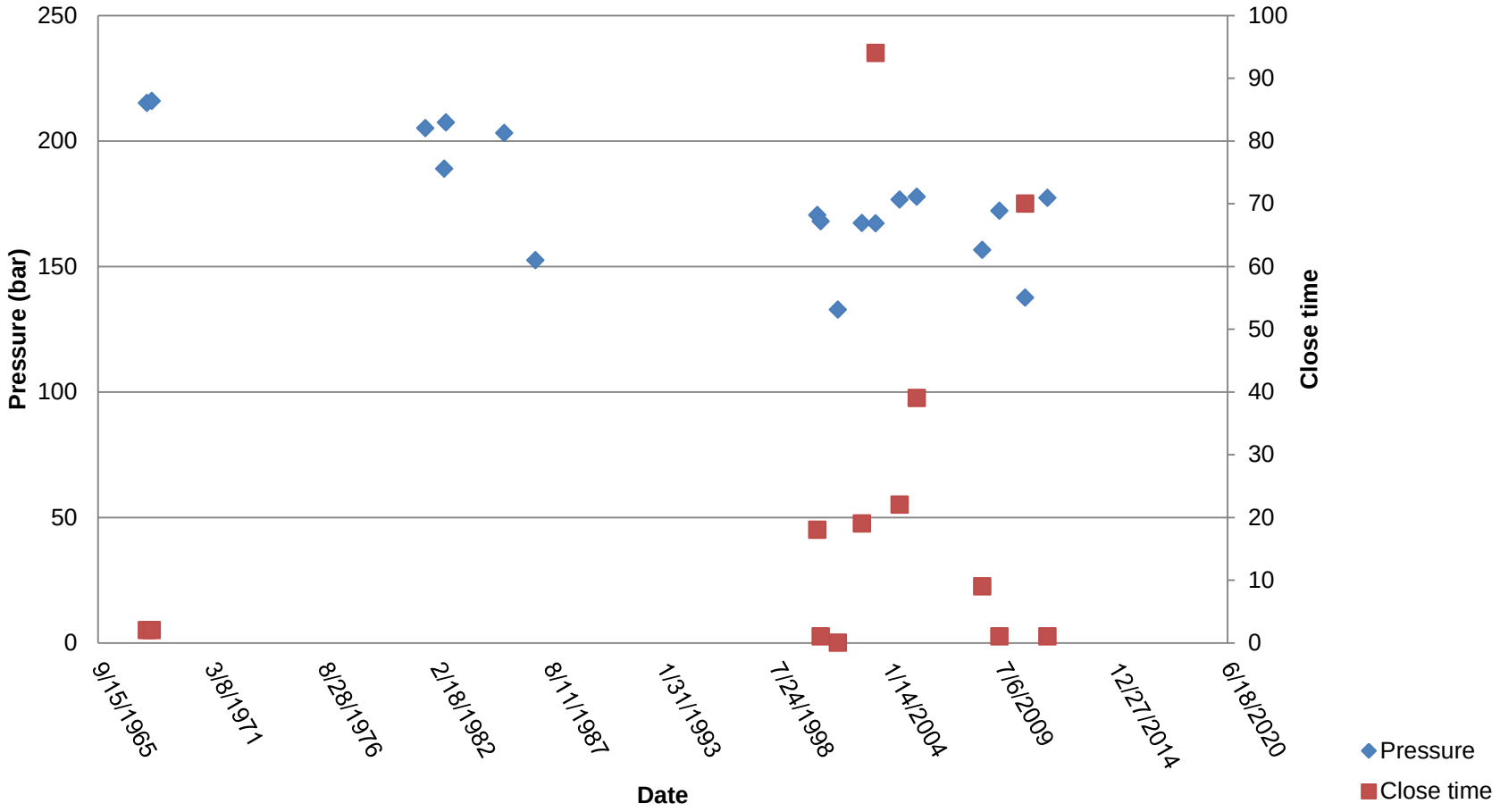


Production History of ‘C’ Reservoir

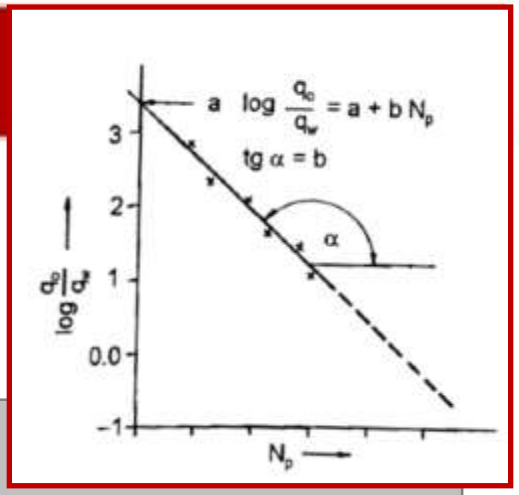


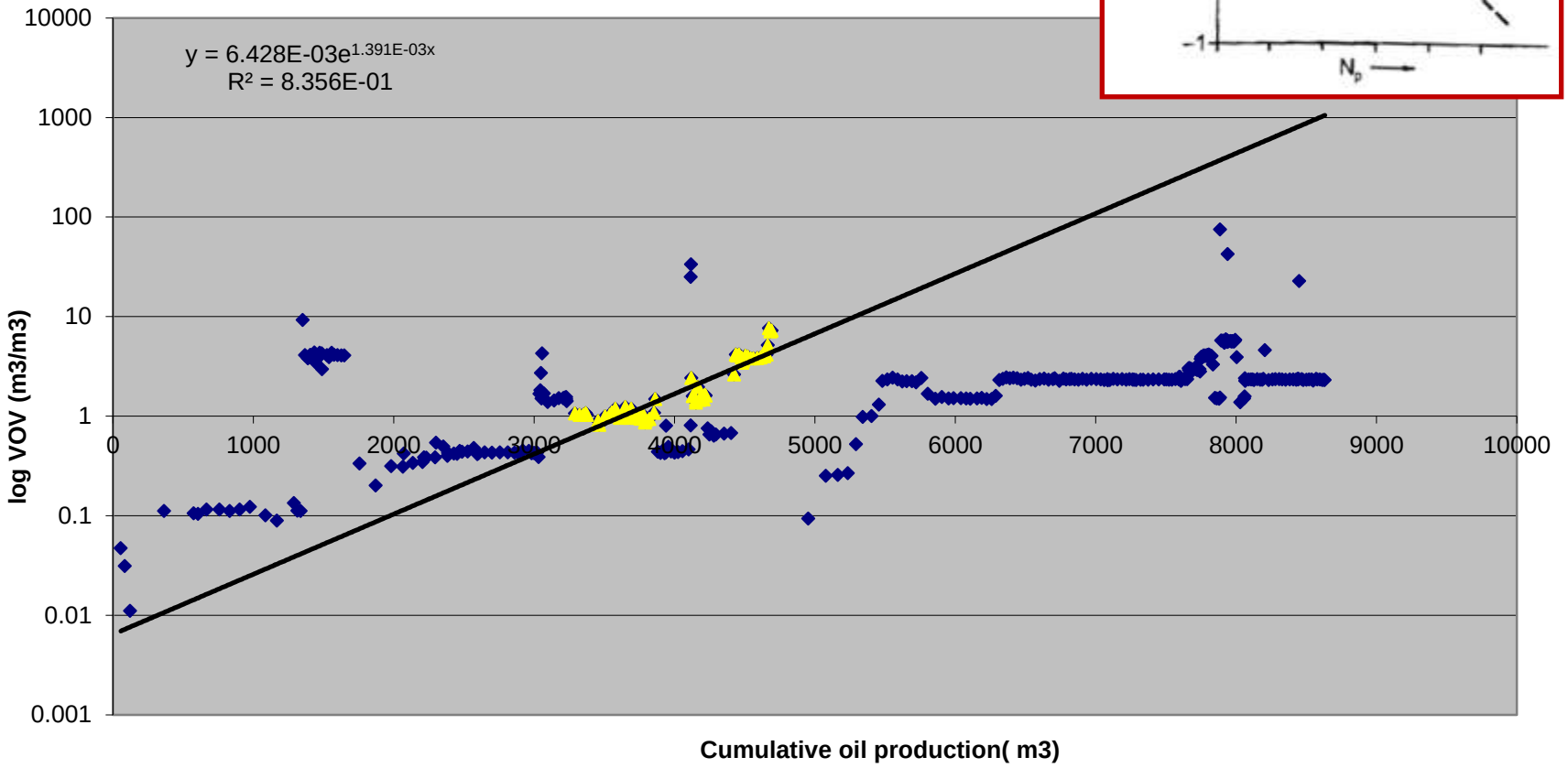
MOL GROUP

Pressure Data of Well-5



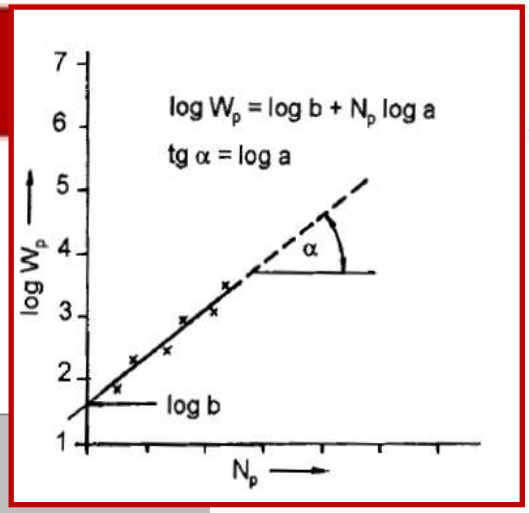
Timmerman empirical forecast method

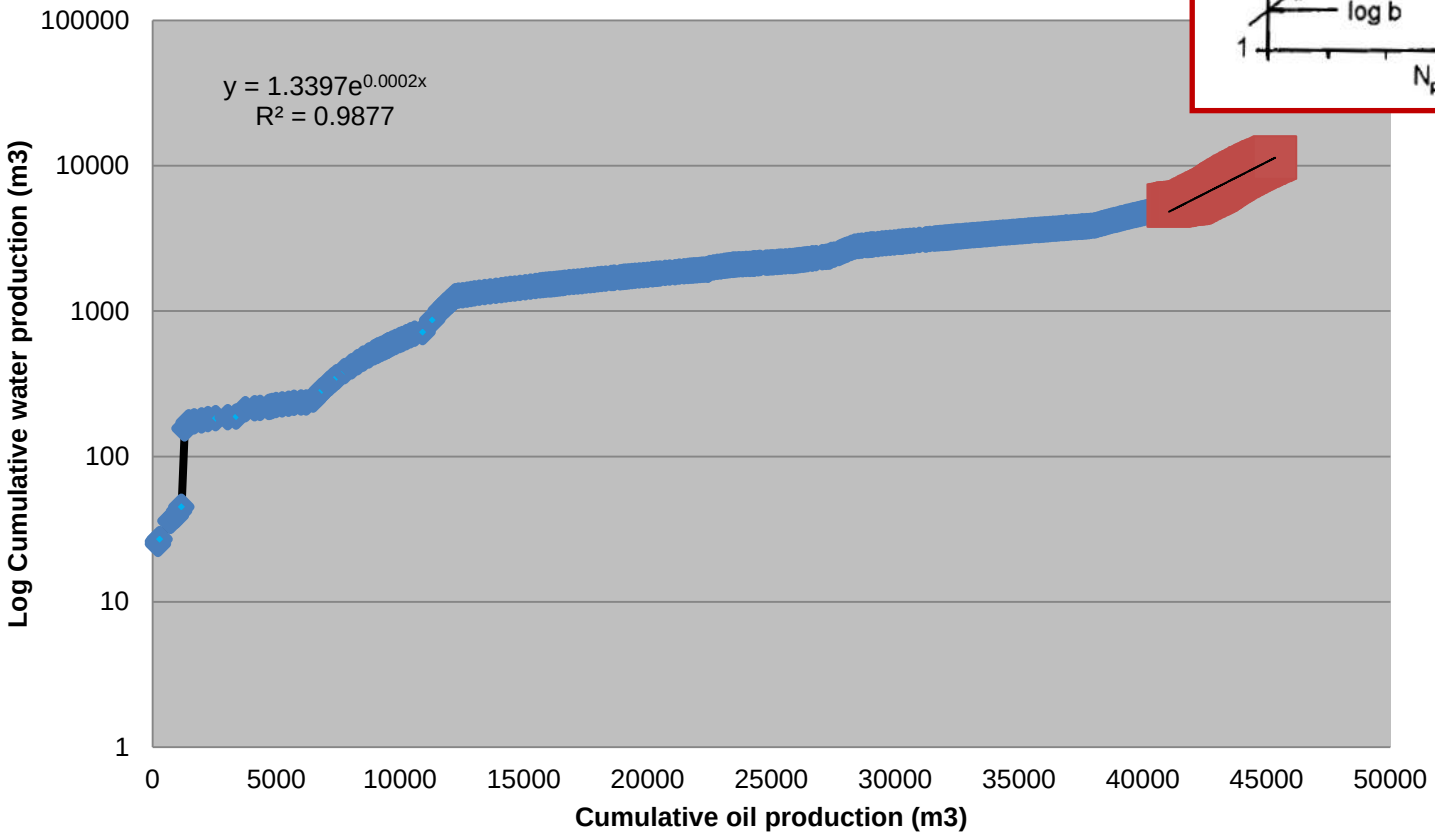




MOL GROUP

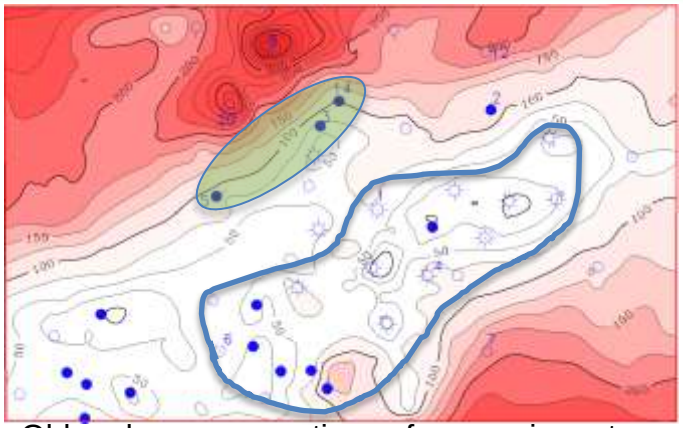
Makszimov empirical forecast method



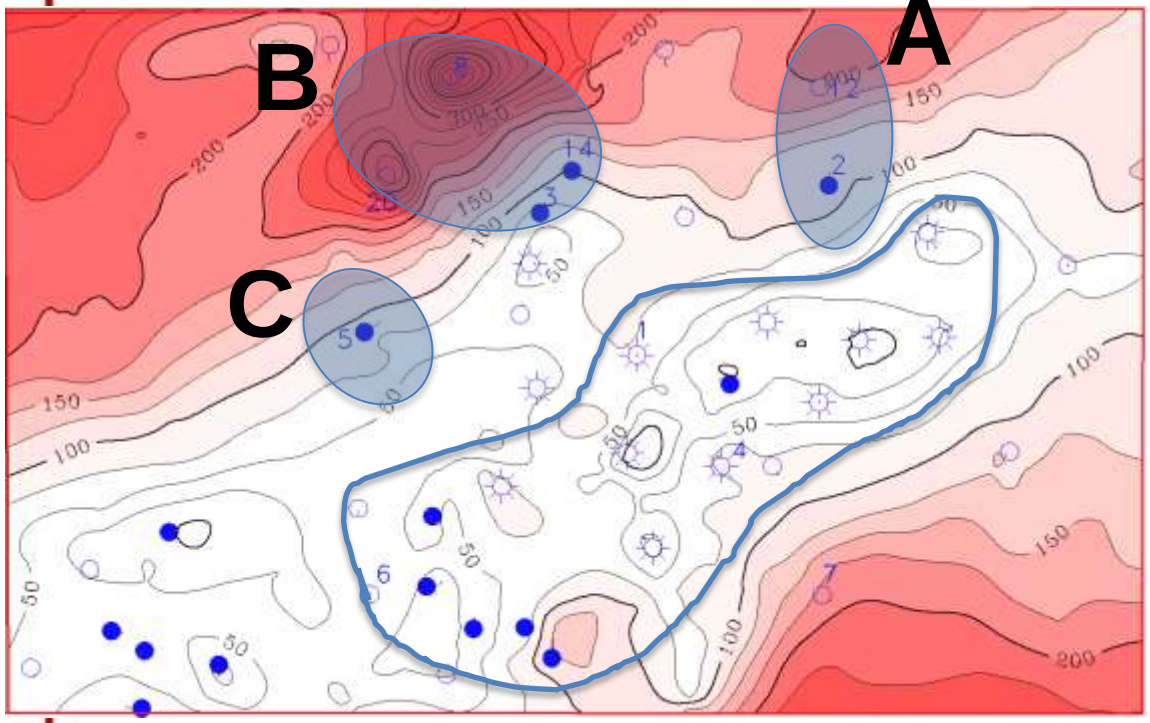


MOL GROUP

Conclusion



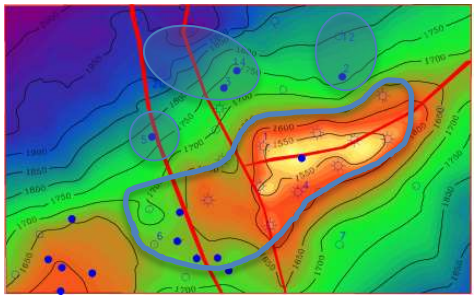
Old and new conceptions of reservoir contours in the isopachous maps of miocene



- New BMF, BPLF horizons
- New faults
- Production data
- Timmerman and Makszimov results
- New 3D geomodel

New reservoir contours

New field development plan



Contour map of BPLF with reservoir contours

MOL GROUP

Thank You for Your Attention

MOL GROUP