

DEVELOPMENT – LITHUANIA

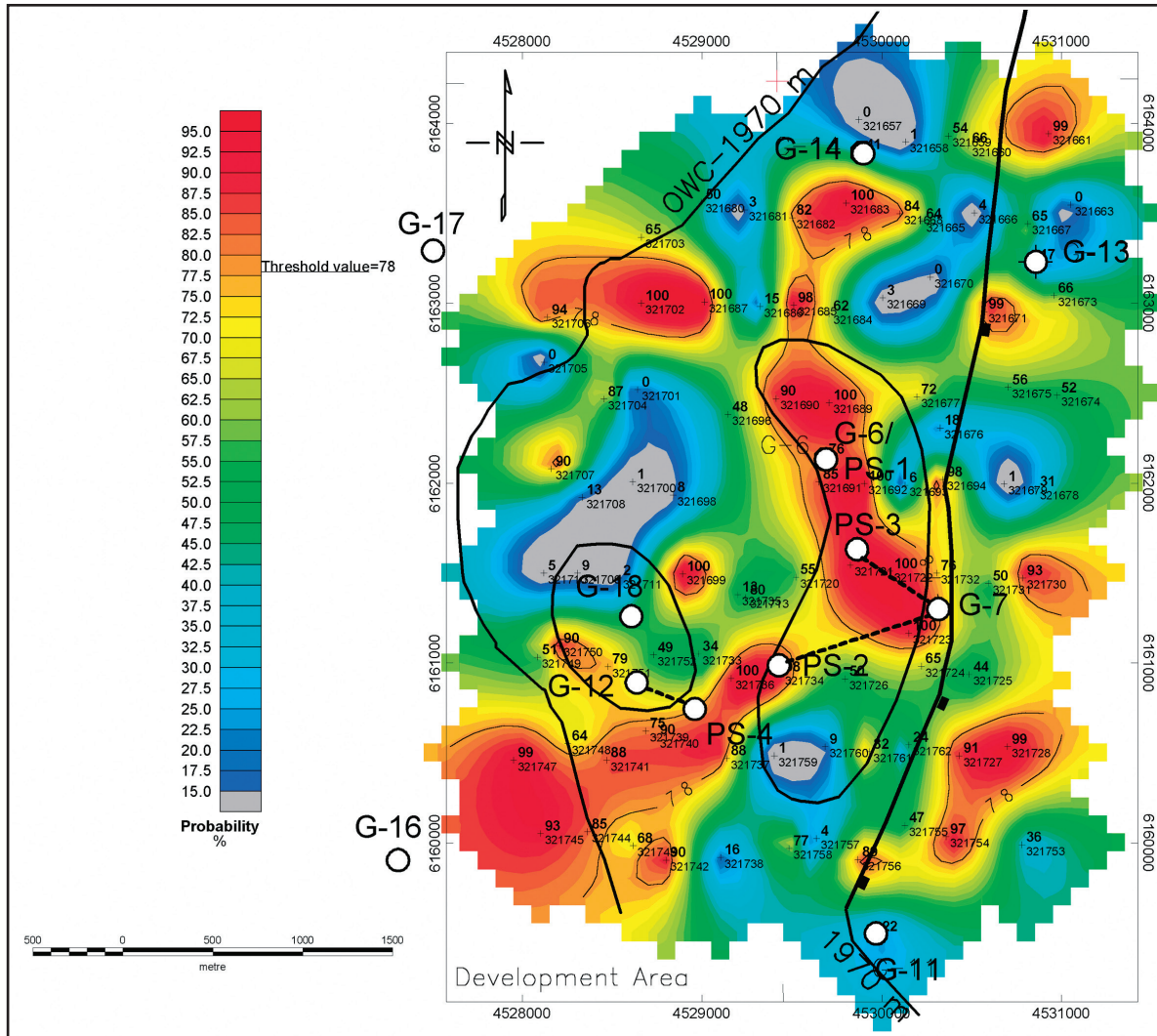


Figure 1: Surface geochemical anomaly map, showing the reservoir sweet spots (red areas) as high probability zones.

### Survey Summary

- Lithuania - Development
- Producing oil field
- 150 AGI passive samplers installed
- Sample spacing – 250 m to 500 m regular grid
- Three economic oil wells drilled as a result of the AGI Survey
- Field production increased 12-fold

### Introduction

The survey area is located in the Baltic Syncline petroleum province, Lithuania. Target was an on-shore marine Cambrian sandstone. Producing horizon is about 2,000 m deep. Reservoir traps are a result of Caledonian tectonism. Goal of the survey was to determine the field limits and identify reservoir sweet spots.

## AGI Survey

150 samplers were collected from a regular grid spaced 250 by 500 m covering an area of 20 km<sup>2</sup>. For statistical modeling purposes additional samples were collected at existing wells, known to be dry wells or producers of oil. Sample analysis was performed using gas chromatography and mass selective detection. An analysis for more than 80 target compounds was performed. Compounds observed included N-alkanes ranging from ethane through octadecane. By comparing the field samples against the modeled oil signatures, the similarities of each sample's signature to the local oil were established in terms of probability. The probabilities were contoured revealing surface geochemical anomalies.

## Survey Results

The AGI Survey defined elongated geochemical anomalies within the field. To date three producing wells (no dry wells) have been drilled on the positive geochemical anomalies. The production rates of the new wells were significantly greater than the rates from earlier wells (see table, below.)

The AGI Survey identified reservoir sweet spots and increased field production 12-fold.

Production/Test Data (BOPD)			
Wells drilled before AGI Survey		Wells drilled after AGI Survey	
G-6/PS-1	160	PS-2	3,350
G7	120	PS-3	2,020
G11	dry	PS-4	760
G12	750 (test)		
G13	dry		
G14	3 (test)		
G18	120		

Figure 3: Production data before and after AGI Survey