

Detailed Compositional Analysis of Light hydrocarbons (C_1 - C_4), Trace Elements and Soil Salts in Western Newfoundland

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Research Team



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Theory

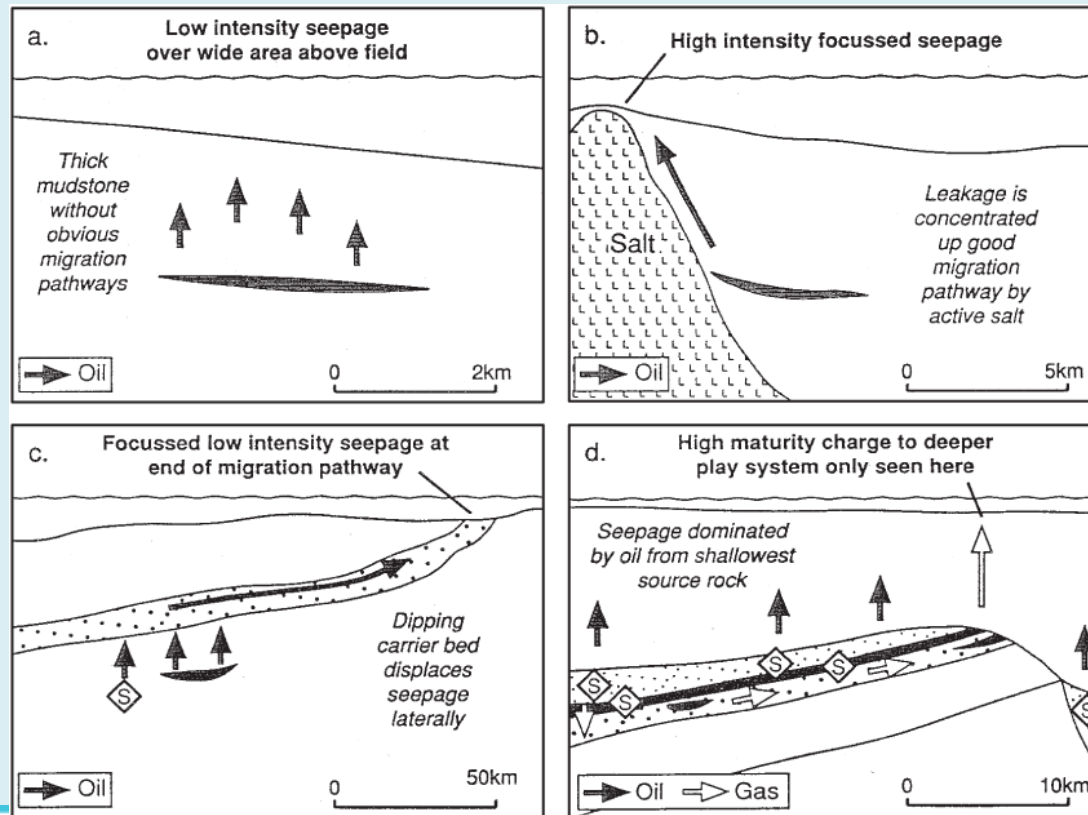
- All petroleum basins exhibit some type of near-surface hydrocarbon leakage.

- Microseepage is defined as high concentrations of analytically detectable volatile or semi-volatile hydrocarbons in soils, sediments, or waters.

- These invisible seeps are recognized only by the presence of anomalous concentrations of the following:
 - Light hydrocarbons (principally C1–C5)
 - Volatile or semi-volatile high-molecular weight hydrocarbons (such as 2–4 ring aromatics)
 - Hydrocarbon-oxidizing microbes
 - Hydrocarbon-induced alteration products

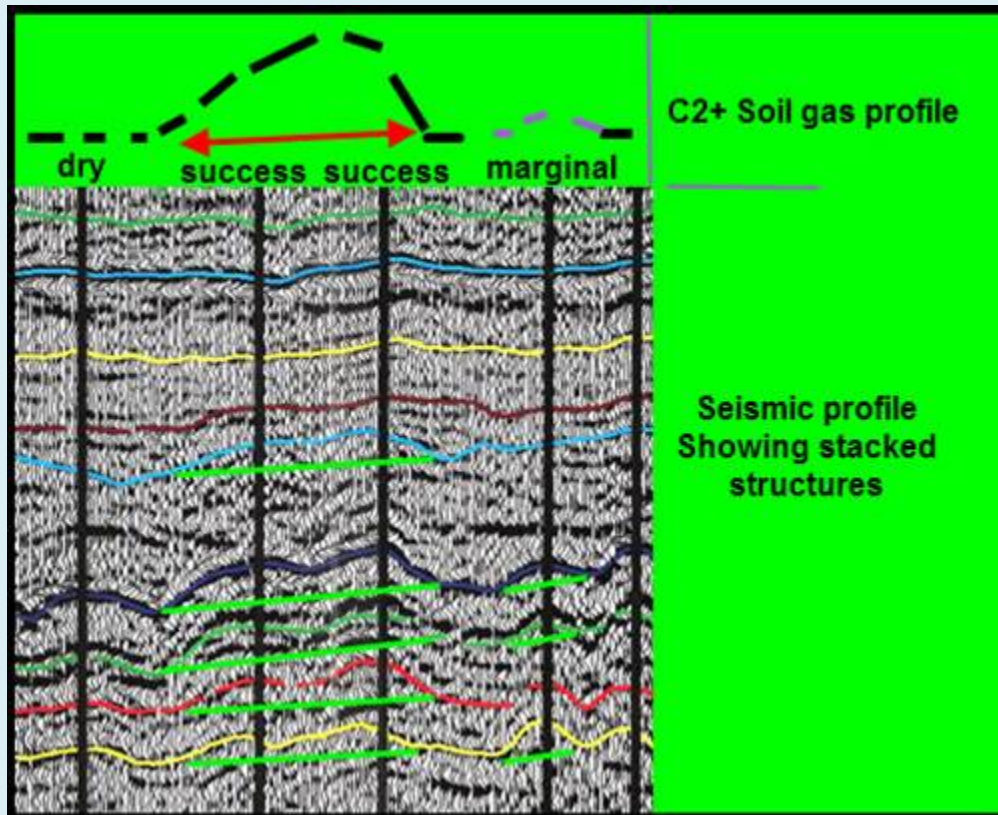
Theory

Hydrocarbon seeps at the surface represent the end of the migration pathway.



(From Schumacher, 1996)

Theory



From PETRO-FIND GEOCHEM LTD

Traps and structures along such pathways should be considered significantly more prospective than those not associated with such anomalies.

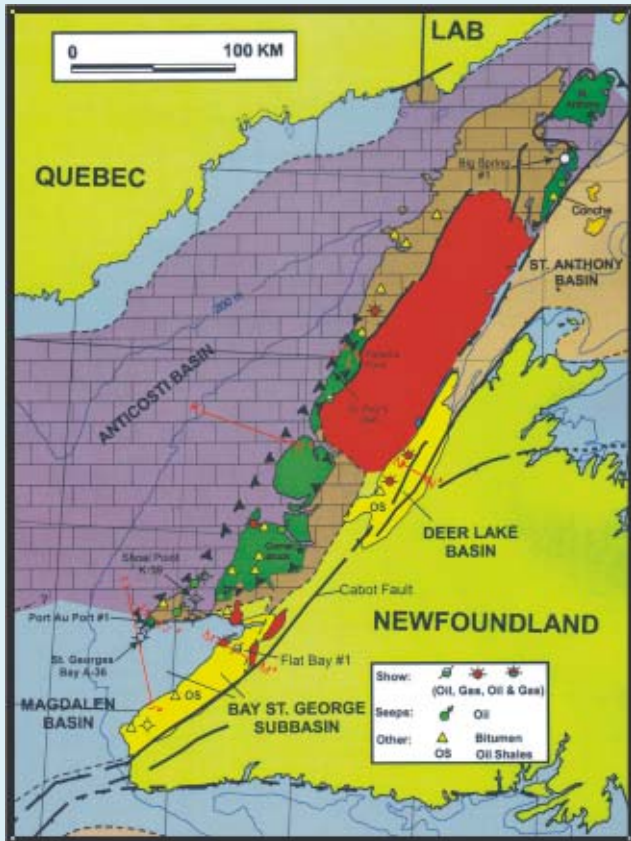
Theory

- Compositional ratios may predict hydrocarbon composition at depth

Approximate Empirical range of Microseep Compositional ratios			
Hydrocarbon Composition	$C_1/\Sigma C_1-C_4$ or % C_1	C_1/C_2	$(C_2/C_3) \times 10$
Gas	100-90	100-20	25-50
Gas condensate	90-75	20-10	16.5-25
Oil	50-5	10-4	10-16.7

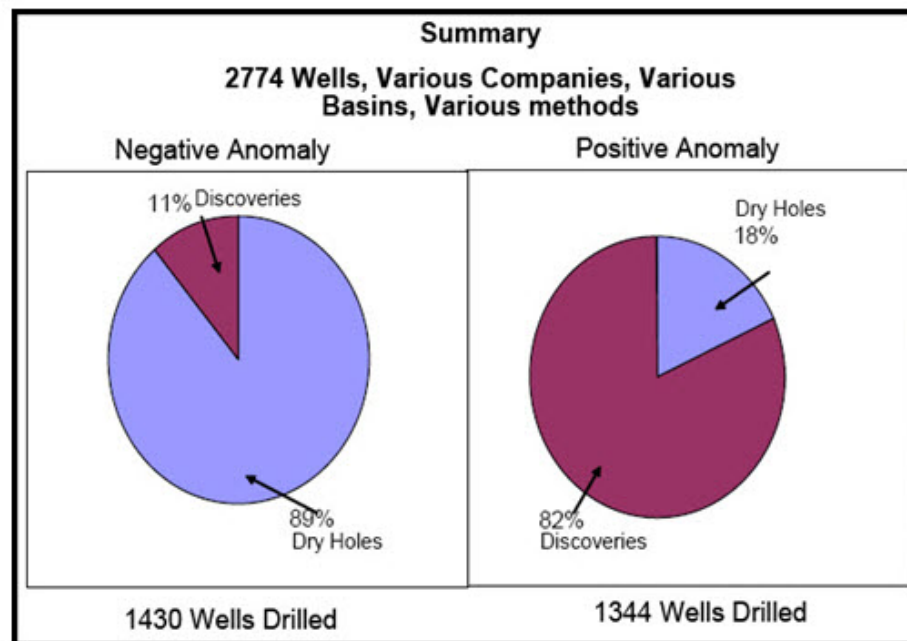
Jones and Drozd (1983)

The plan



Outcome

Proven Success using Geochemical Surveys



Source: D. Schumacher; Search and Discovery Article #40943 (2012)