

HISTORICAL CONTEXT of the PETROLEUM INDUSTRY in TRINIDAD and TOBAGO

by

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GEOLOGICAL TECHNIQUES IN PETROLEUM EXPLORATION in T&T

A HISTORICAL PERSPECTIVE

LAND PROVINCE

EARLY EXPLORATION 1866–1867

Surface Geological
Mapping
and Oil Seeps

First recorded well
was drilled near San
Fernando in 1866

Oil was discovered at
Aripero in 1867

Both drilled by Walter
Darwent

Both based largely on
seeps



First Geological Map
Wall and Sawkins 1859

LAND PROVINCE

EARLY EXPLORATION 1895–1907

Randolph Rust returned to Aripiero and went to Guayaguayare

Rust found oil in both places

His exploration was also based on seeps

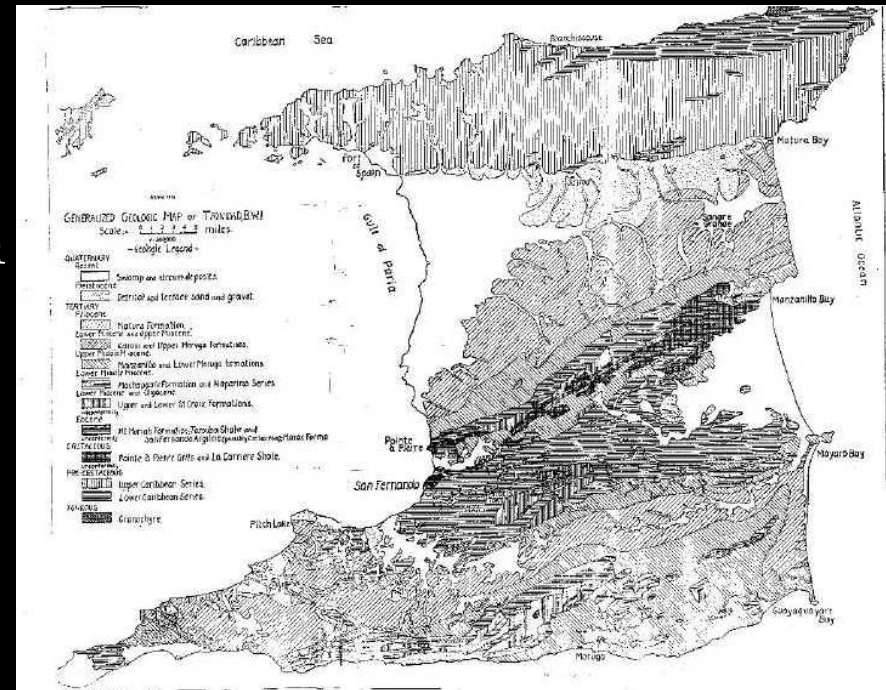
LAND PROVINCE

MAJOR DISCOVERIES 1907–1955

In 1903 Cunningham-Craig a Government geologist mapped the whole of South Trinidad and the then Government granted many leases for oil exploration
First Commercial land production was 1907 at Pt. Ligoure

Within 10 years all major land fields had been found

Based largely on surface mapping



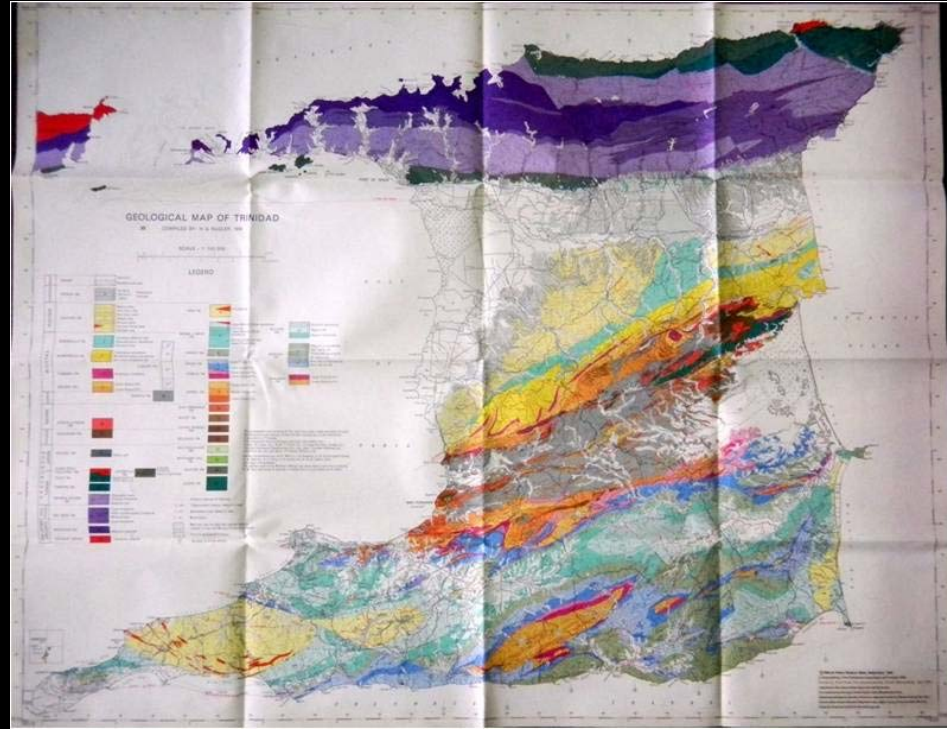
Waring's Geological Map
1926

LAND PROVINCE

MAJOR DISCOVERIES 1907–1955

By 1955 many of these land fields had found deeper pools

Based largely on sub-surface mapping with the aid of micropaleontology, an important new tool world-wide largely developed locally



Kugler's Geological Map
1959

GULF PROVINCE

MAJOR DISCOVERIES 1955–1965

Three major Soldado fields discovered 1955-1965

Based on seismic and trendology

The Soldado anticline recognised by 2D seismic lies on the west part of the Los Bajos wrench fault. It was interpreted to be the unmoved part of the Pt. Fortin Anticline which was known to be productive

First well discovered the Soldado Main Field



Detail of Geologic-Tectonic Map
Compiled by Persad 1984

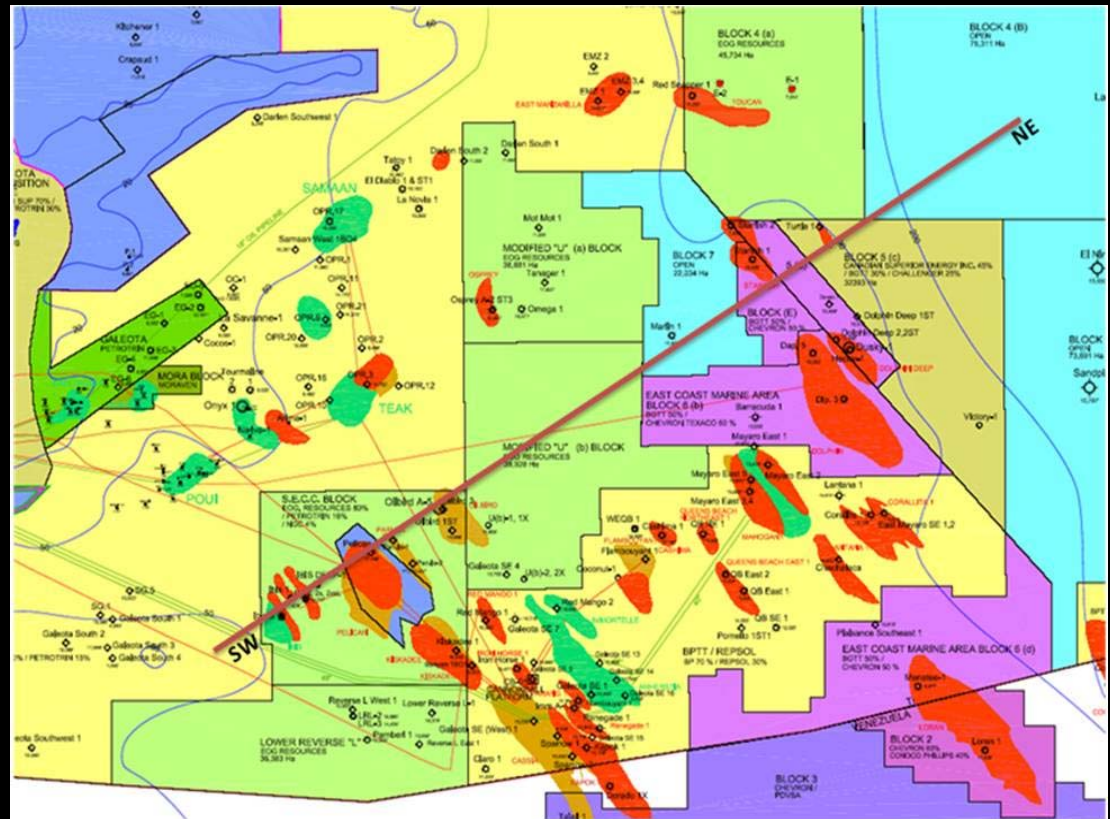
NCMA PROVINCE

MAJOR DISCOVERIES 1971–ONWARDS

Most of the large oil and gas fields discovered 1971–1981

Discoveries continuing

All based on seismic including 3D seismic

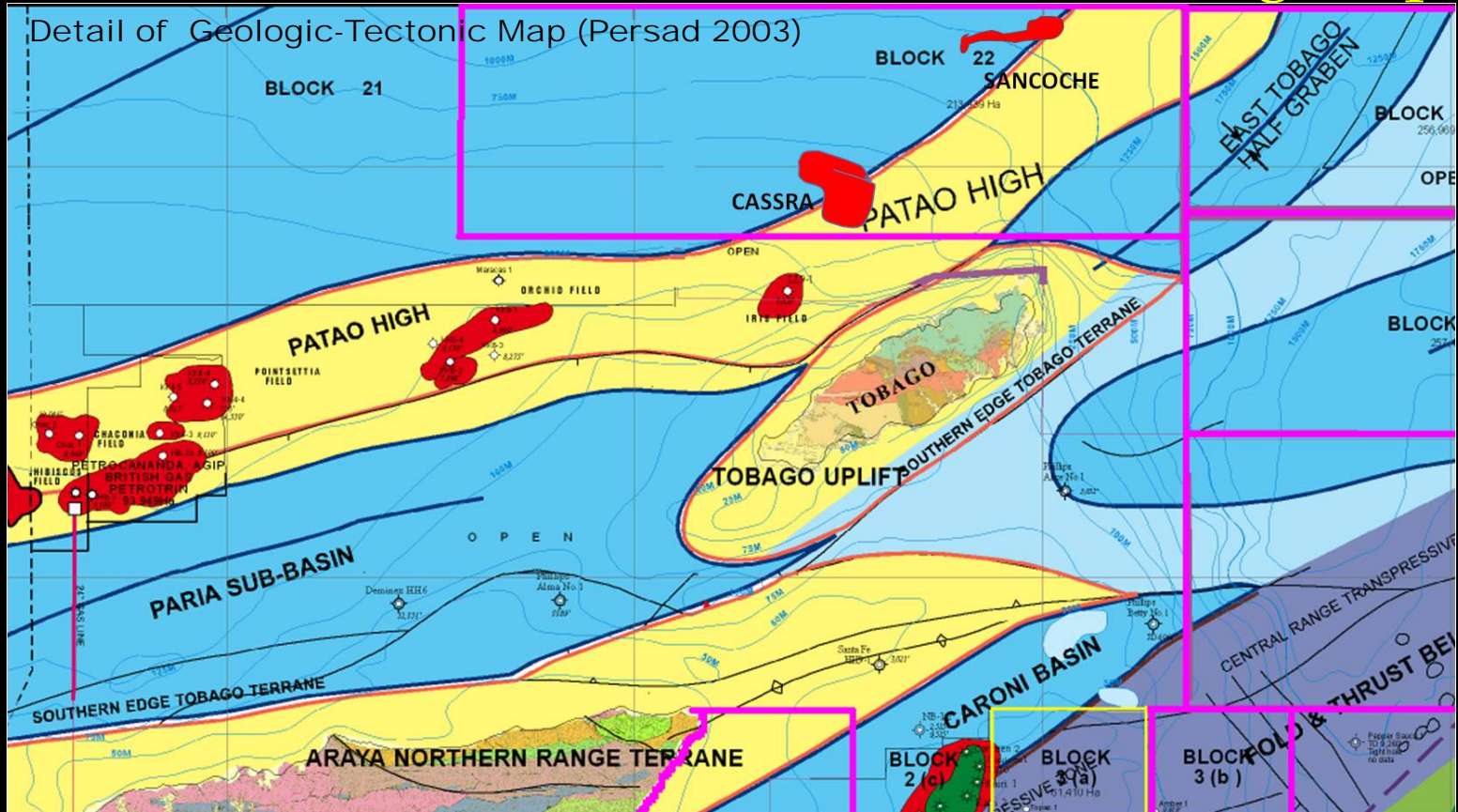


Detail of Oil & Gas Map
GSTT 2009

ECMA PROVINCE

Several large gas fields discovered 1968-1976

All were based on seismic...all show bright spots



NEW GEOLOGIC CONCEPTS

1980-ONWARDS

PLATE TECTONICS

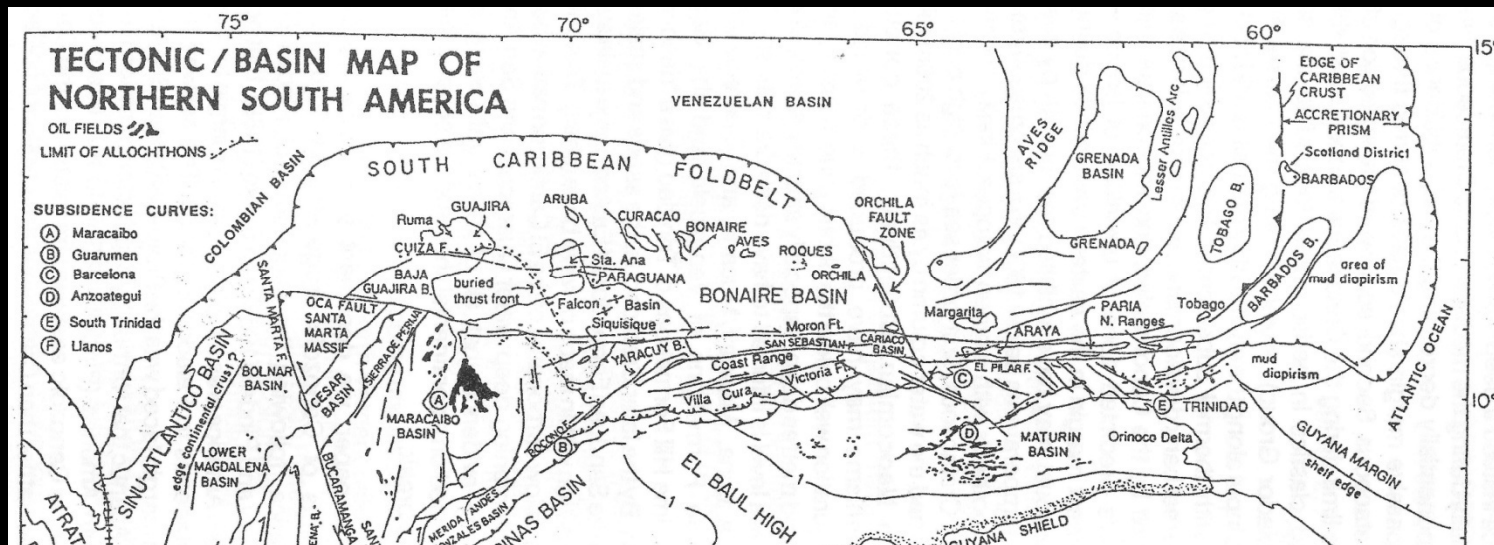
and how it affects our thinking about
the GEOLOGY

PETROLEUM GEOCHEMISTRY

and how it affects our thinking about
PETROLEUM ACCUMULATIONS

NEW GEOLOGIC CONCEPTS 1980-ONWARDS

PLATE TECTONICS
and how it affects our thinking about
our GEOLOGIC-TECTONIC HISTORY



NEW GEOLOGIC CONCEPTS

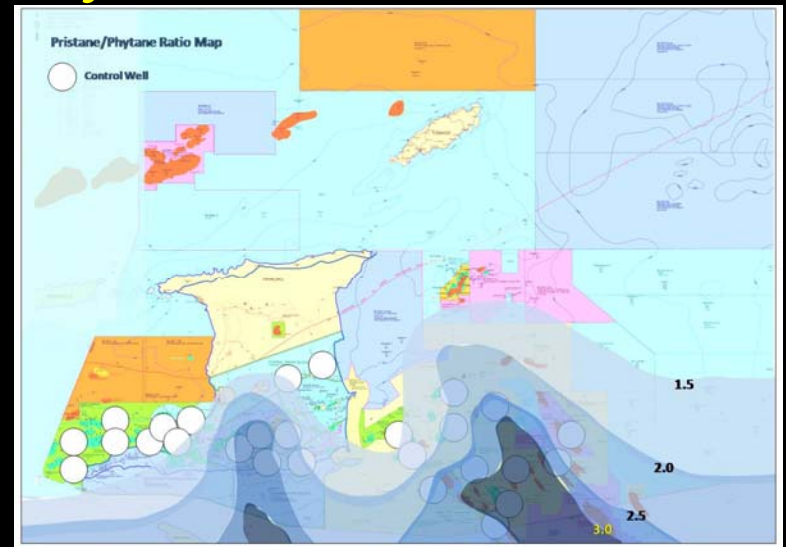
1980-ONWARDS

PETROLEUM GEOCHEMISTRY

We now know the oil source , its quality (TOC) and its type (marine, terrestrial or mixed)

This allows us to predict the amount of liquid hydrocarbons generated in any basin

AND whether it will be oil or gas/condensate or both



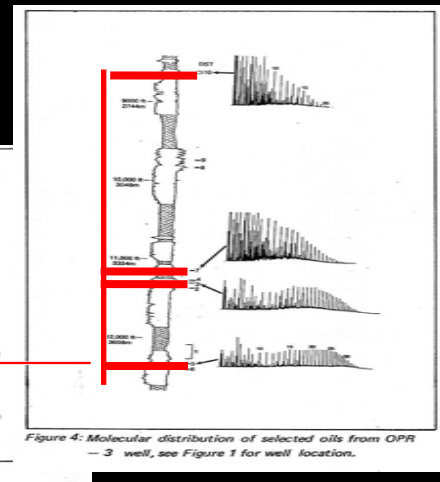
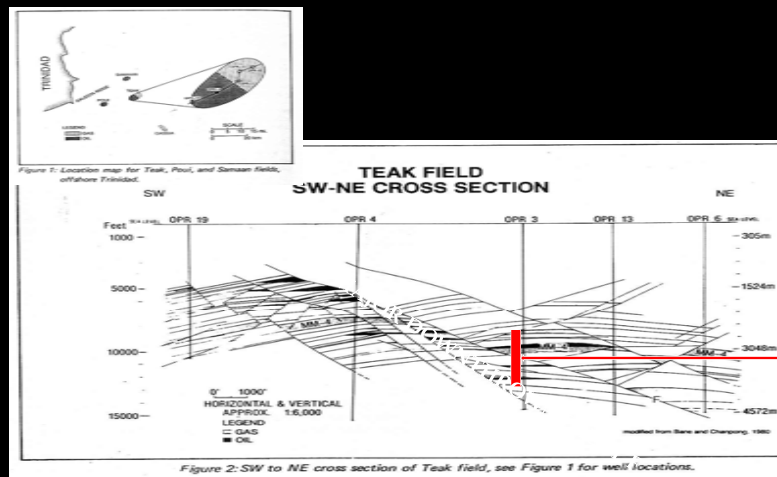
NEW GEOLOGIC CONCEPTS

1980-ONWARDS

PETROLEUM GEOCHEMISTRY

We now know that most oils are evaporatively fractionated

This allows us to predict whether oil can be found deeper below shallow oil and/or gas/condensate fields



NEW GEOLOGIC CONCEPTS 1980-ONWARDS

MORE IMPORTANTLY
THESE TWO CONCEPTS

PLATE TECTONICS and PETROLEUM
GEOCHEMISTRY

can be applied very economically AND allow
rapid accurate assessments of the petroleum
potential of basins...never before possible

THANK YOU

QUESTIONS?