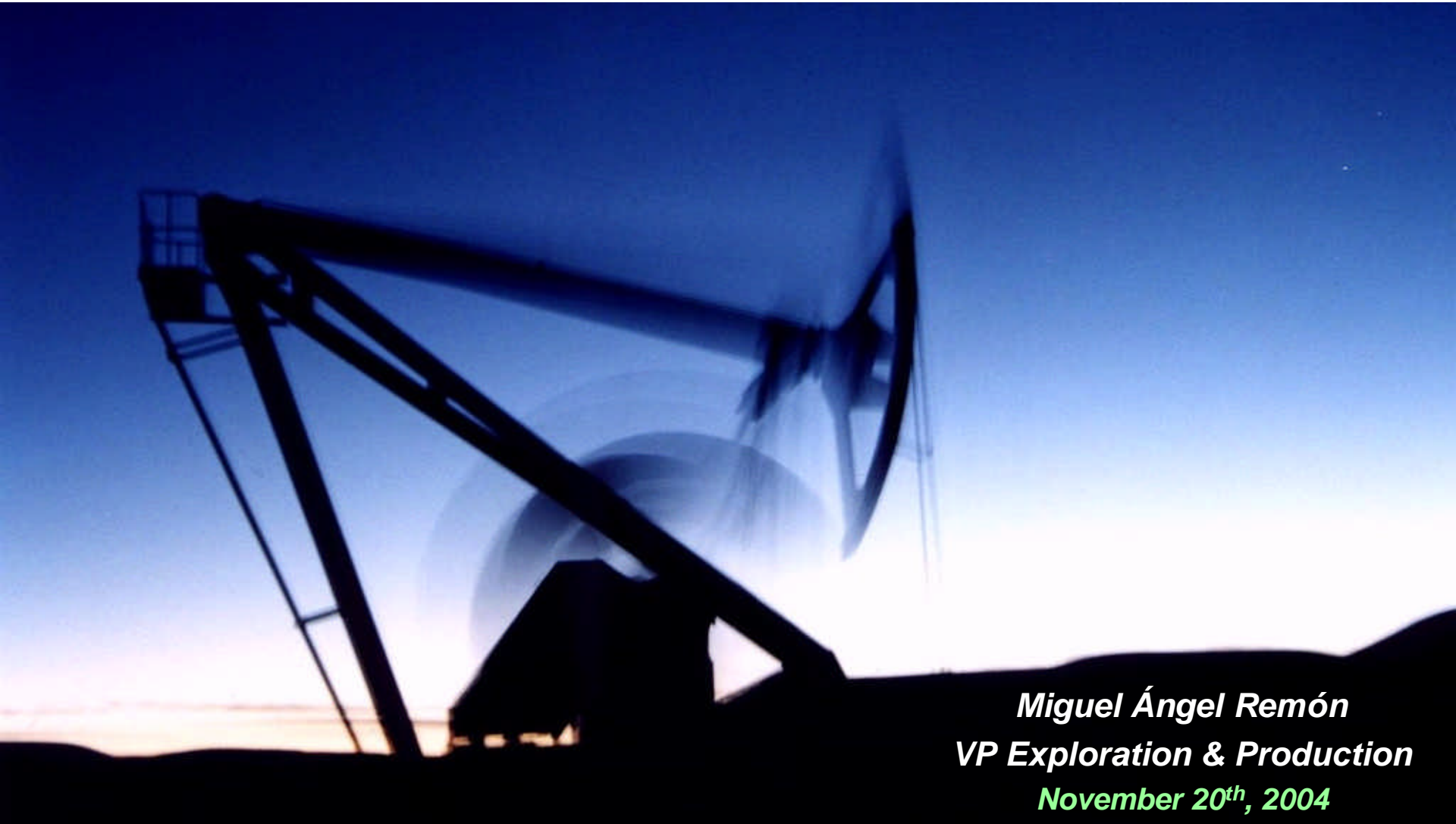


# ***UPSTREAM (Part II)***



*Miguel Ángel Remón*  
*VP Exploration & Production*  
*November 20<sup>th</sup>, 2004*

***Safe harbor statement under the Private Securities Litigation Reform Act of 1995:***

***This document contains statements that Repsol YPF believes constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements may include statements regarding the intent, belief or current expectations of Repsol YPF and its management, including statements with respect to trends affecting Repsol YPF's financial condition, financial ratios, results of operations, business, strategy, geographic concentration, production volume and reserves, as well as Repsol YPF's plans with respect to capital expenditures, cost savings, investments and dividend payout policies. These statements are not guarantees of future performance and are subject to material risks, uncertainties, changes and other factors which may be beyond Repsol YPF's control or may be difficult to predict.***

***Repsol YPF's future financial condition, financial ratios, results of operations, business, strategy, geographic concentration, production volumes, reserves, capital expenditures, cost savings, investments and dividend payout could differ materially from those expressed or implied in any such forward-looking statements. Such factors include, but are not limited to, currency fluctuations, the price of petroleum products, the ability to realize cost reductions and operating efficiencies without unduly disrupting business operations, environmental and regulatory considerations and general economic and business conditions, as well as those factors described in the filings made by Repsol YPF and its affiliates with the Comisión Nacional del Mercado de Valores in Spain, the Comisión Nacional de Valores in Argentina and the Securities and Exchange Commission in the United States; in particular, those described in Section 1.3 "Key Information about Repsol YPF? Risk Factors" and Section 3 "Operating and Financial Review and Prospects" in Repsol YPF's annual report on Form 20-F for the fiscal year ended December 31, 2003 filed with the Securities and Exchange Commission.***

***Repsol YPF does not undertake to publicly update or revise these forward looking statements even if experience or future changes make it clear that the projected results or condition expressed or implied therein will not be realized.***

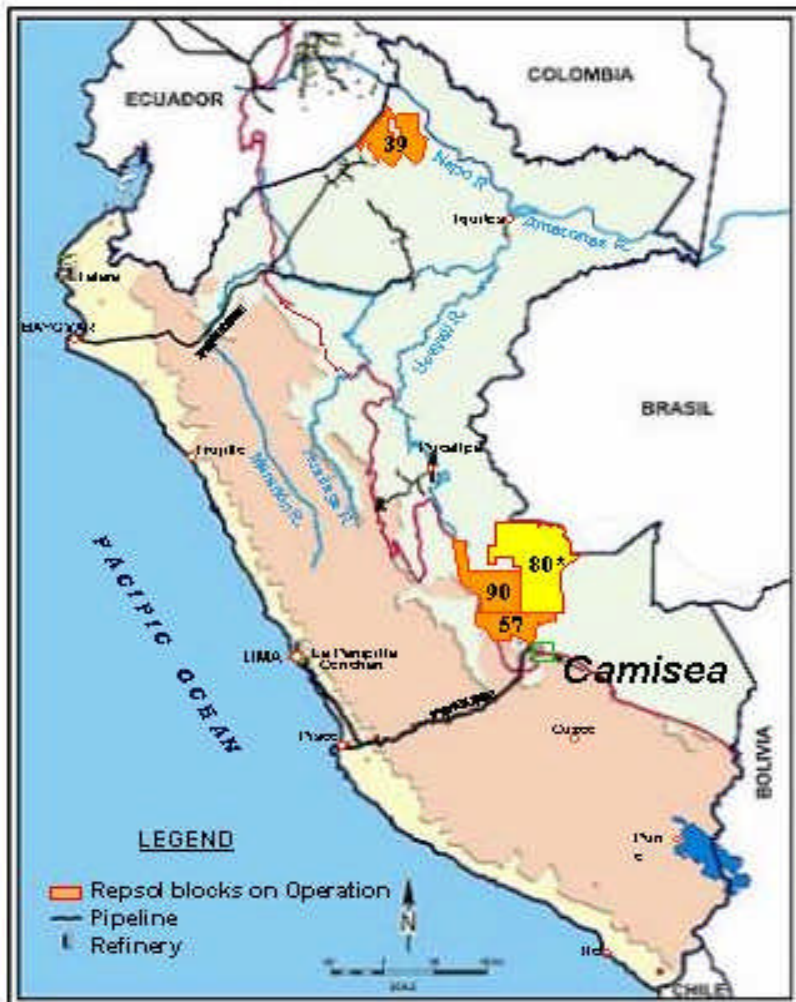
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# PERU



# PERU

## Current acreage



<b>39</b>	REPSOL YPF 8,868.21 Km <sup>2</sup>	<b>100%</b>
<b>90</b>	REPSOL YPF 76,15% BURLINGTON 23,85% 8,806.704 Km <sup>2</sup>	
<b>80 (TEA)</b>	REPSOL YPF BURLINGTON 21,130.87 Km <sup>2</sup>	<b>76,15%</b> <b>23,85%</b>
<b>57</b>	REPSOL YPF (*) (BRASPETRO (JSA)) BURLINGTON 6,110.67 Km <sup>2</sup>	<b>76,15% (*)</b> <b>35,15%</b> <b>23,85%</b>

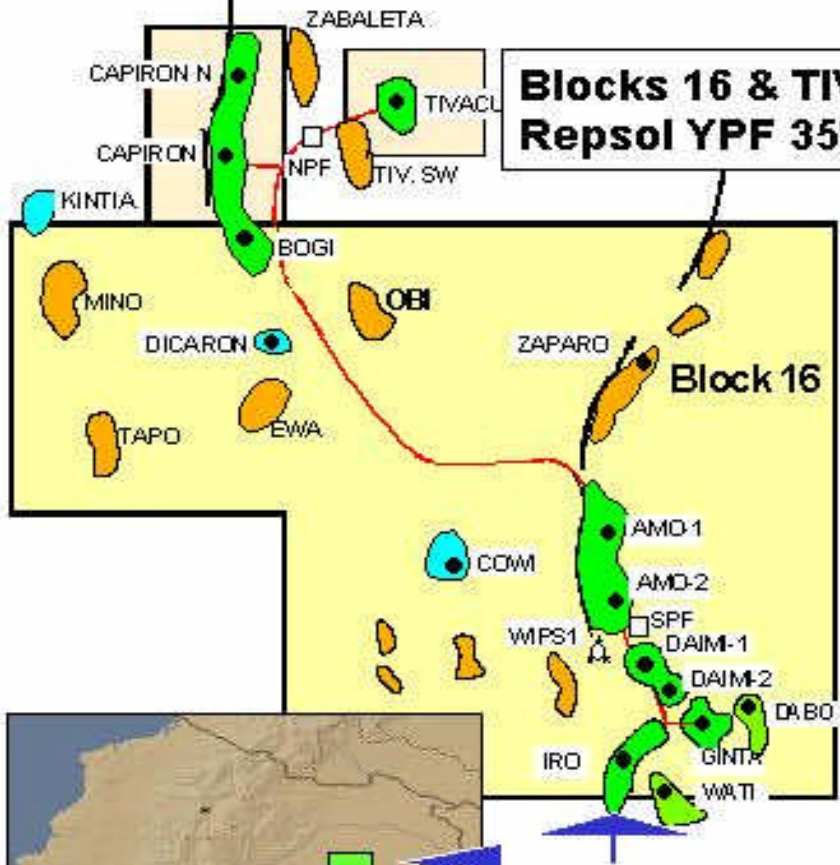
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# ECUADOR

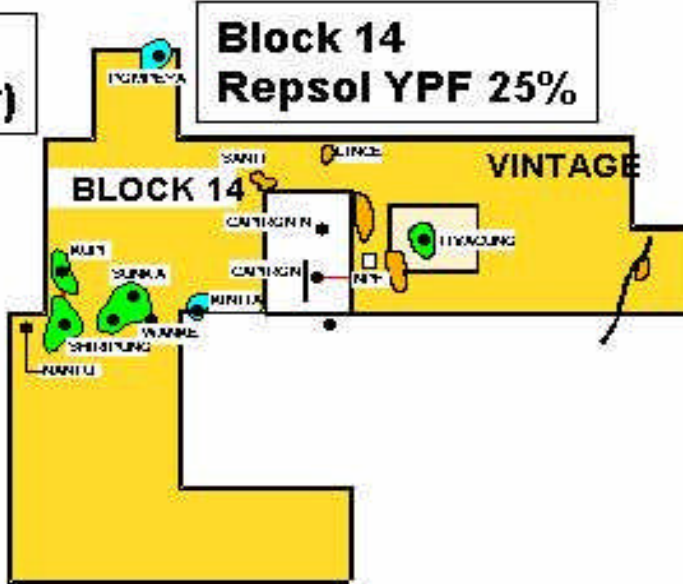


# ECUADOR

## Current acreage



**Blocks 16 & TIVACUNO**  
**Repsol YPF 35%(Operator)**



**Block 14**  
**Repsol YPF 25%**



**BLOCK 16 & TIVACUNO**



**BLOCK-14**

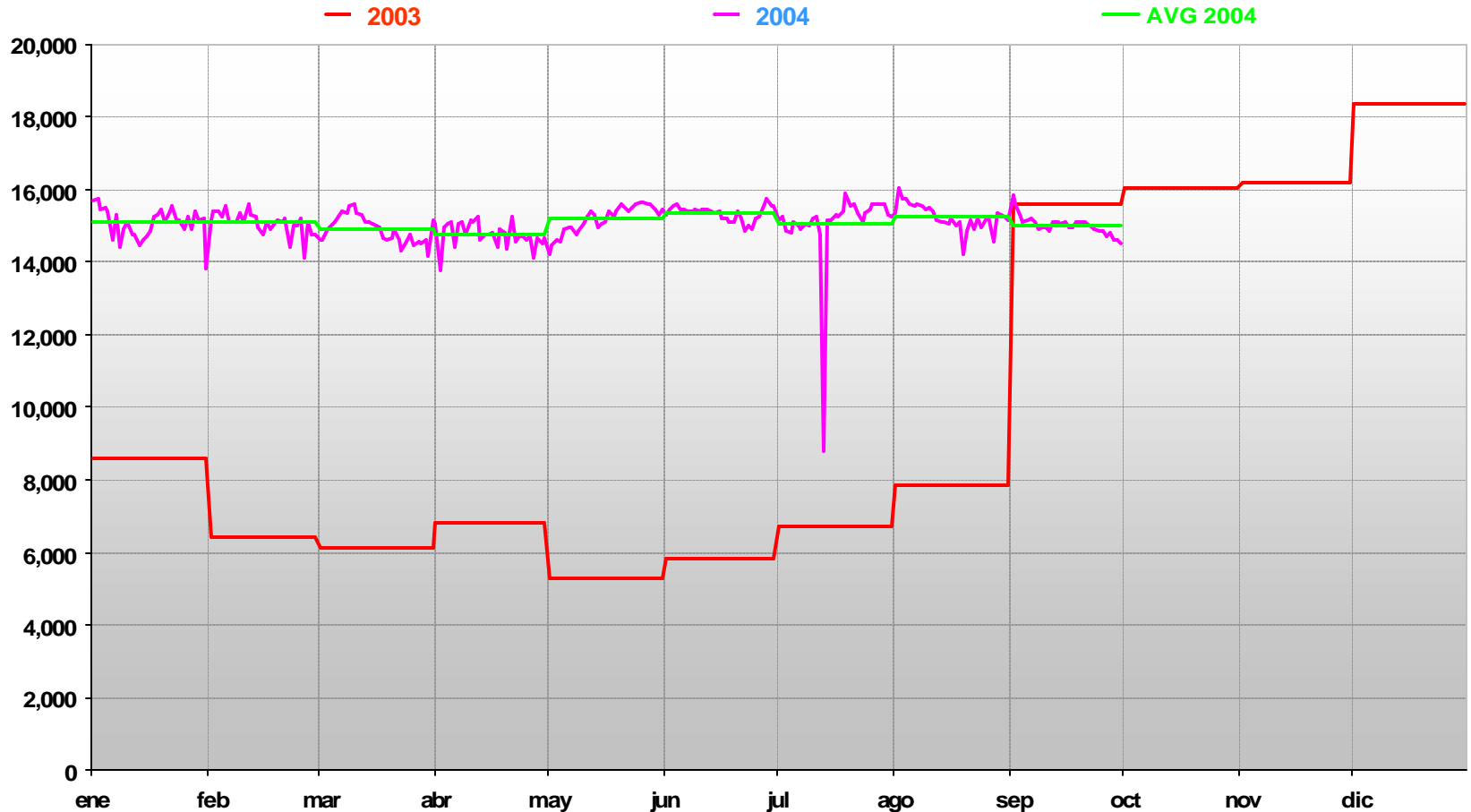
# Ecuador

## Net Liquids Daily Production ( BOPD )



### ECUADOR

NET HCL DAILY PRODUCTION (bopd)





- **Net Proven Reserves @ Dec 2003: 46 M Bbl**
- **September 2003: Start up of OCP**
- **Ongoing Development of Block 16 and 14**
- **Exploration potential in current blocks**
- **New business opportunities:**
  - **Ishpingo-Tambococha-Tiputini (ITT)**
  - **Future Exploration Rounds**



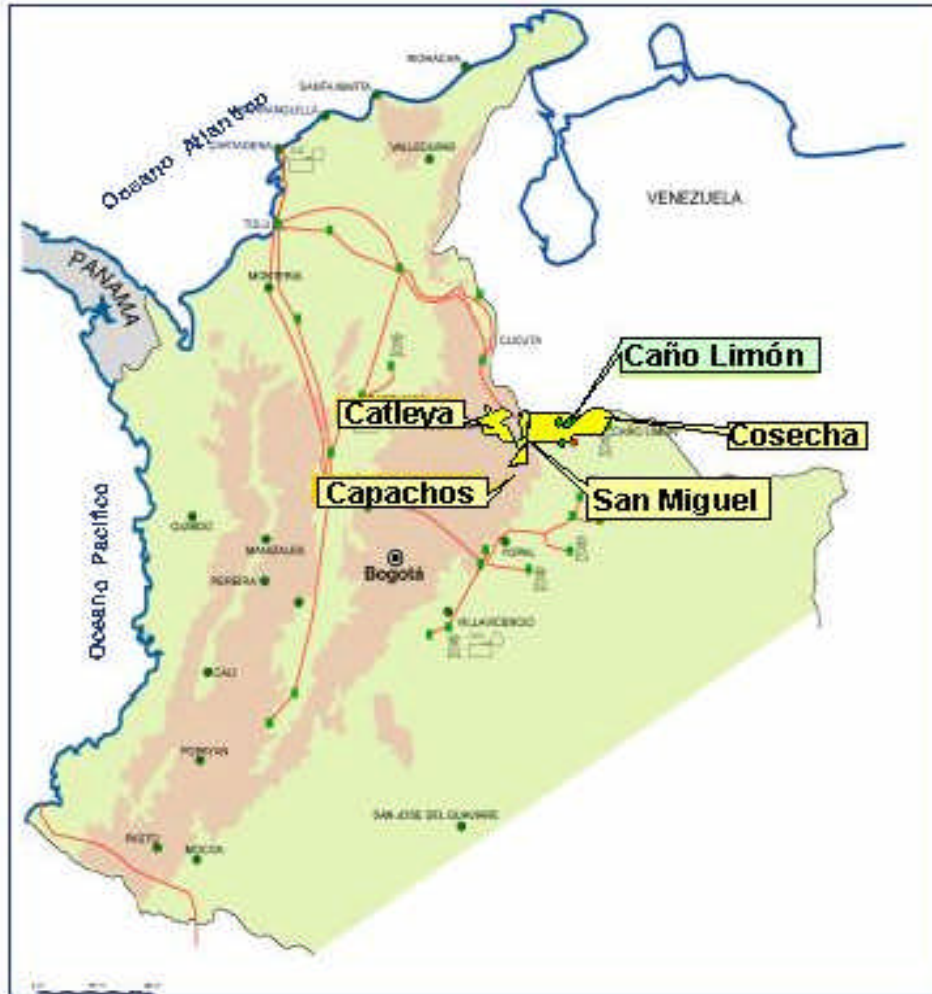
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# COLOMBIA



# COLOMBIA

## Current acreage



<b>CAPACHOS</b>	REPSOL YPF 402,43 km <sup>2</sup>	100%
<b>SAN MIGUEL</b>	REPSOL YPF 434,8 km <sup>2</sup>	100%
<b>COSECHA</b>	OXY 75% REPSOL 25% 2522,7 km <sup>2</sup>	
<b>CATLEYA</b>	REPSOL YPF / ECOPETROL 890,3 km <sup>2</sup>	
<b>CRAVO NORTE CHIPIRÓN</b>	CAÑO LIMON Repsol Net 6,25%	

EXPLORATION
  PRODUCTION

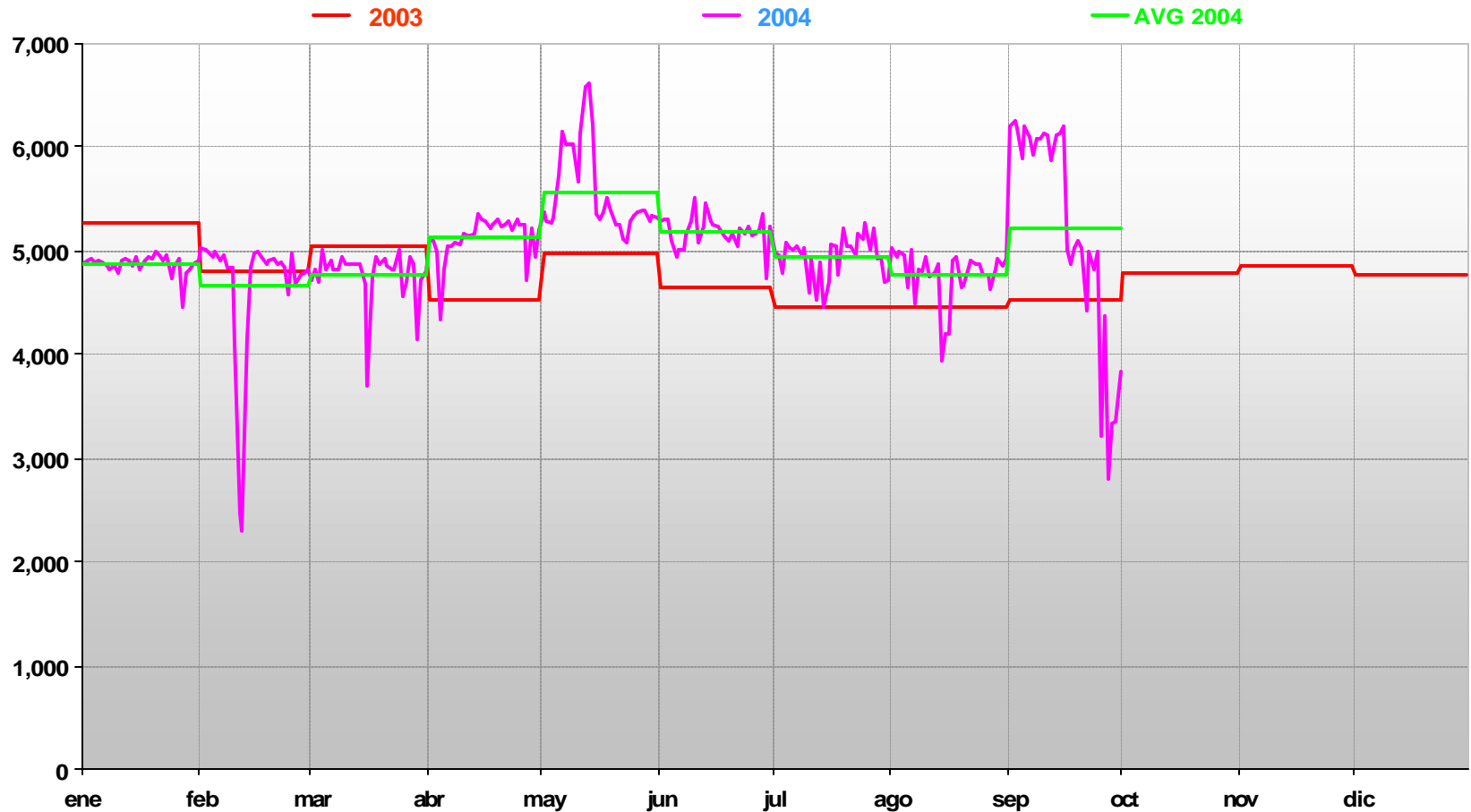
# Colombia

## Net Liquids Daily Production ( BOPD )



### COLOMBIA

NET HCL DAILY PRODUCTION (bopd)



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# VENEZUELA



# VENEZUELA

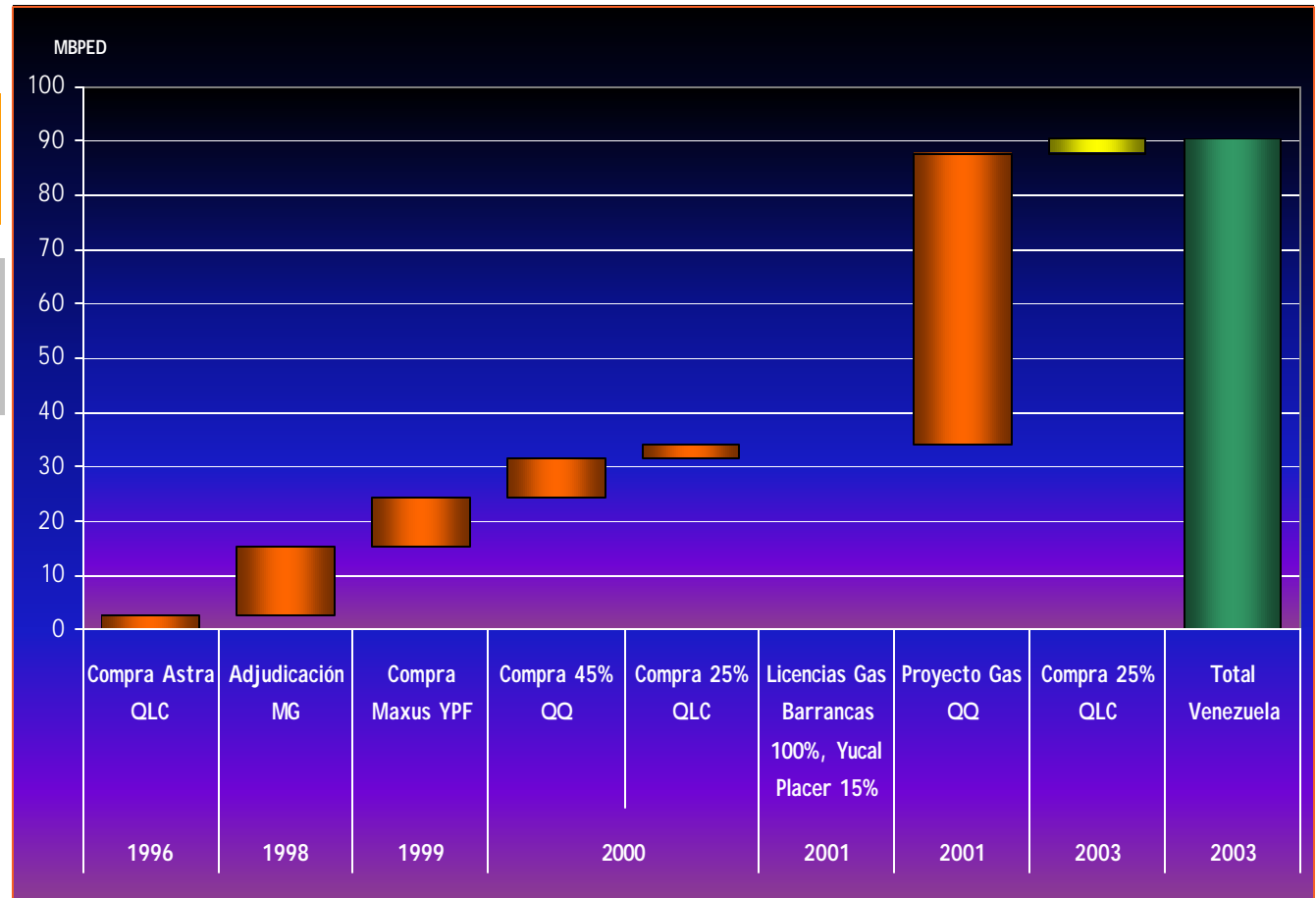
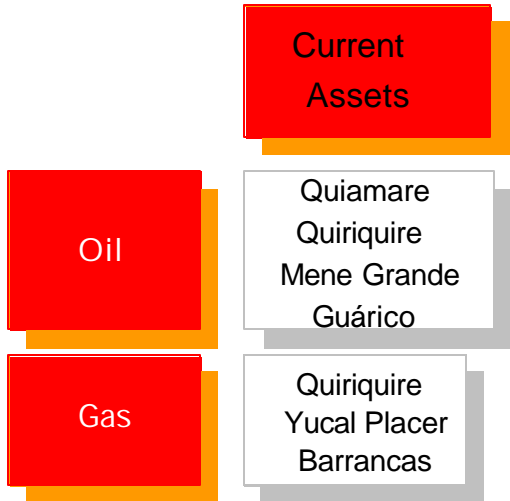
## Current acreage



### Seven Blocks (Six Production Blocks, One Exploration Block)



# Growth history in Venezuela



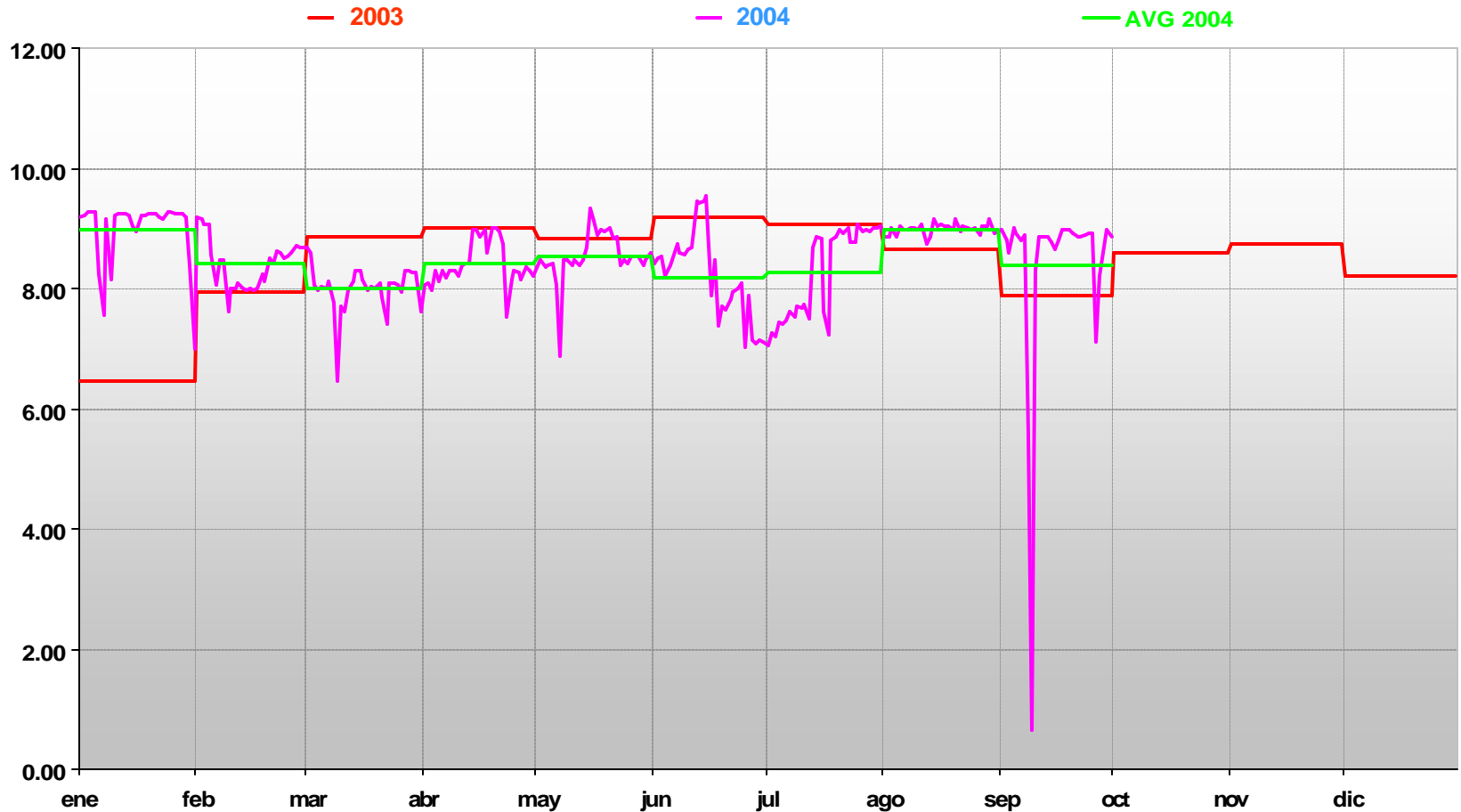
# Venezuela

## Net Gas Daily Production ( M m3/d )



### VENEZUELA

NET GAS DAILY PRODUCTION (Mcmpd)





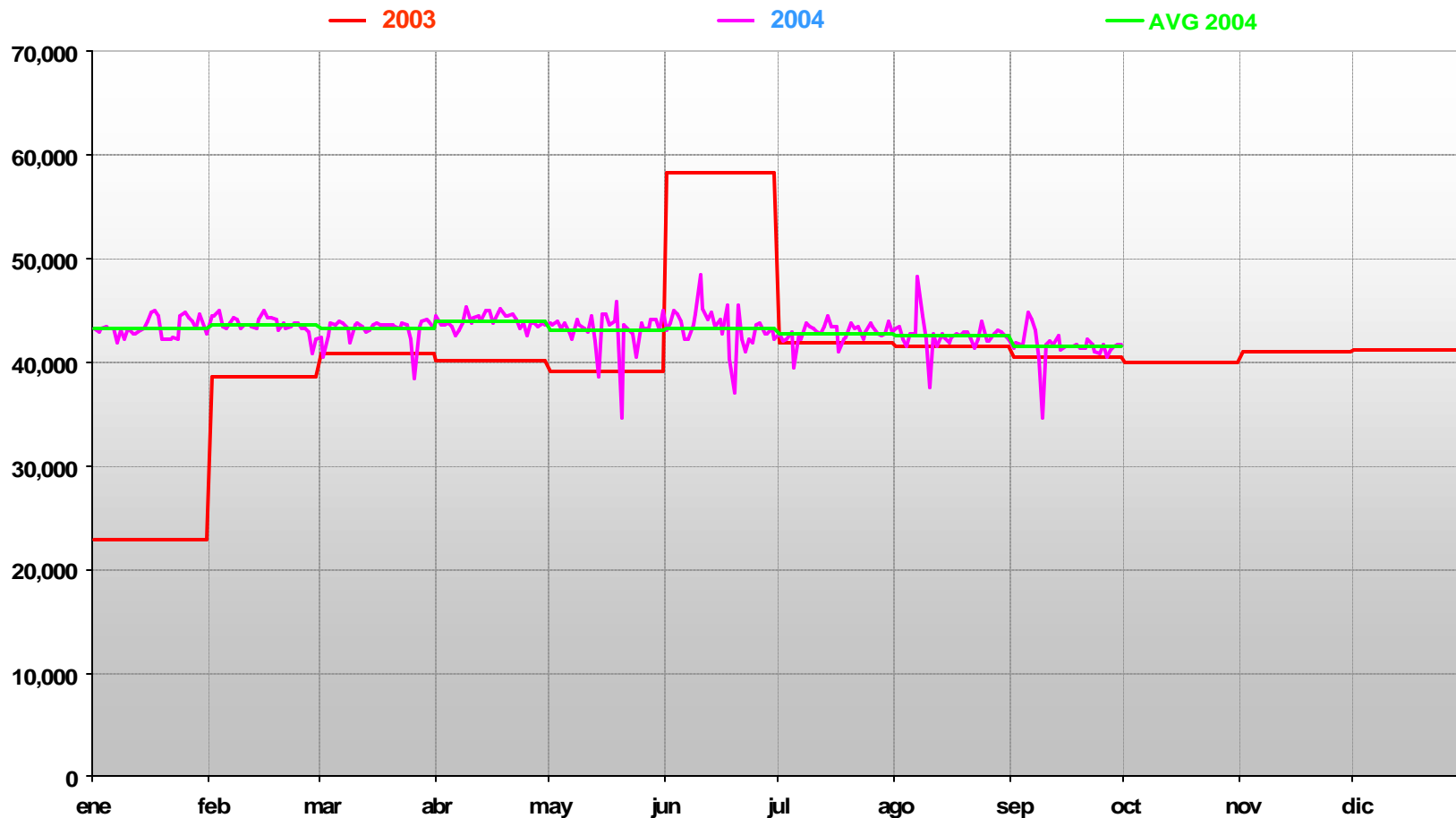
# Venezuela

## Net Liquids Daily Production ( BOPD )



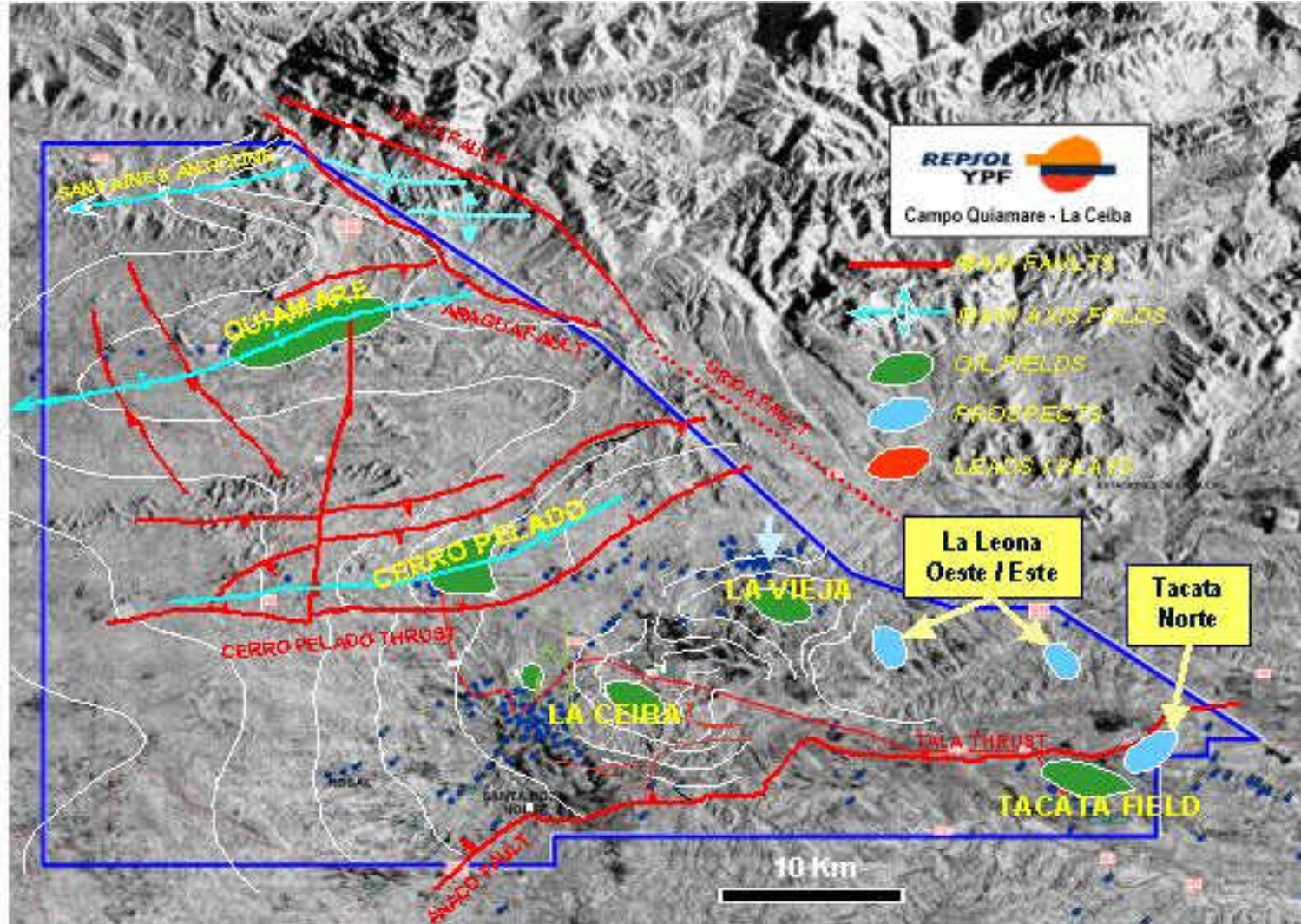
### VENEZUELA

NET HCL DAILY PRODUCTION (bopd)



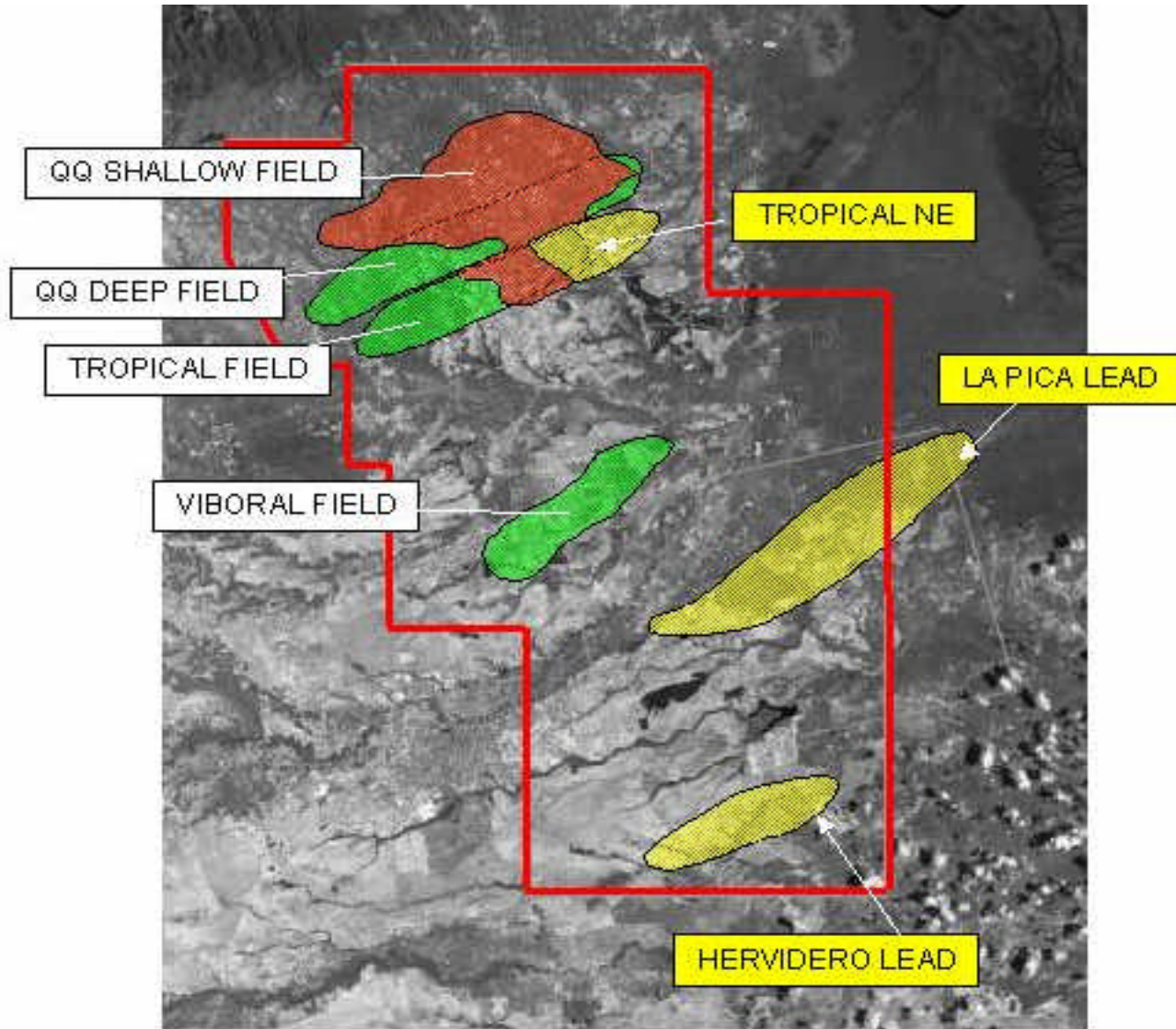
# Venezuela

## Quiamare La Ceiba Exploration



# Venezuela

## Quiriquire Exploration



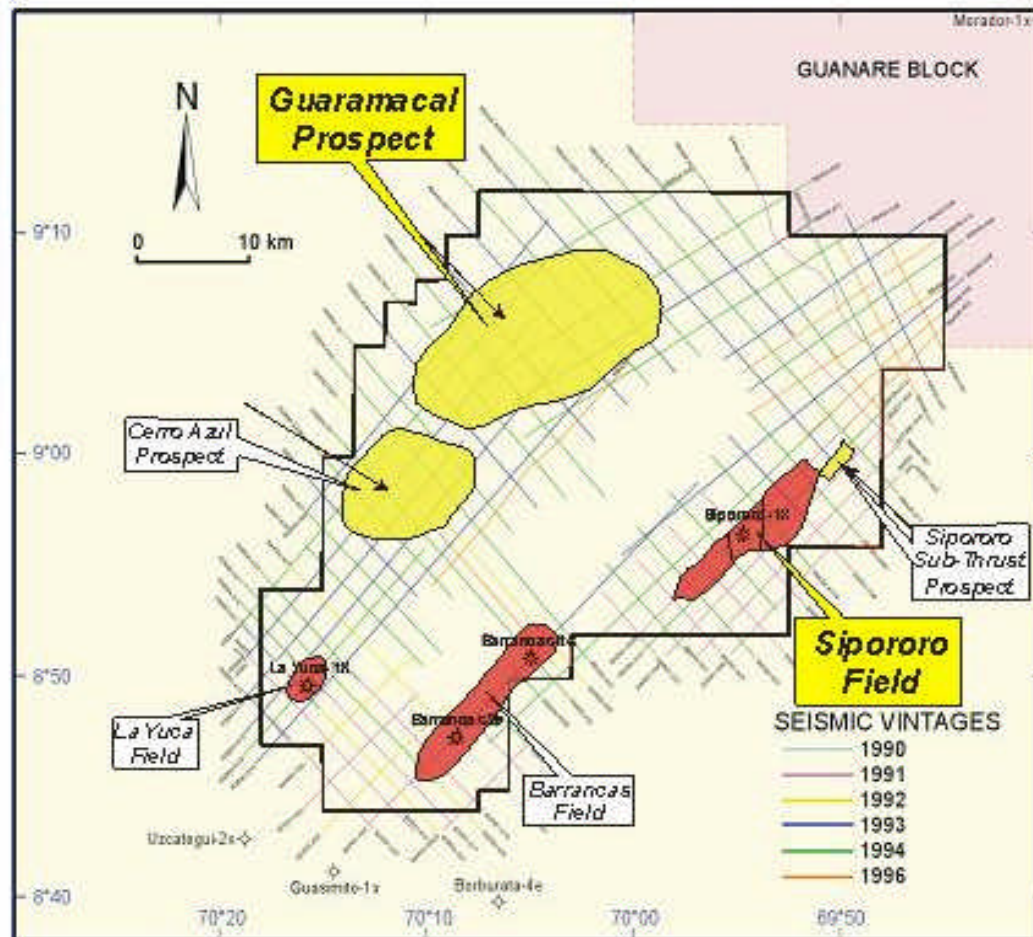


# Venezuela

## Barrancas Block



- The Barrancas Block is located in the Barinas basin at the foothills of the Mérida Andes
- Area: 1970 Km<sup>2</sup>. 4 wells drilled (3 gas discoveries). 1780 Km<sup>2</sup> D Seismic (acquired '90, reprocessed '01).
- Gas production will be sold for power generation with a selling price of 1,59 US\$/Mbtu with an improvement on previous assumptions.



- **Proven Reserves @ Dec 2003: 233 M boes**
- **Growth potential based on:**
  - **On-going gas development projects (Yucal Placer, QQ ). Recent agreement with PDVSA to increase gas production from Quiriquire.**
  - **New gas development projects (Barrancas, QLC)**
  - **On-going Exploration in current assets**
  - **New opportunities (Deltana, Barúa-Motatan, etc)**

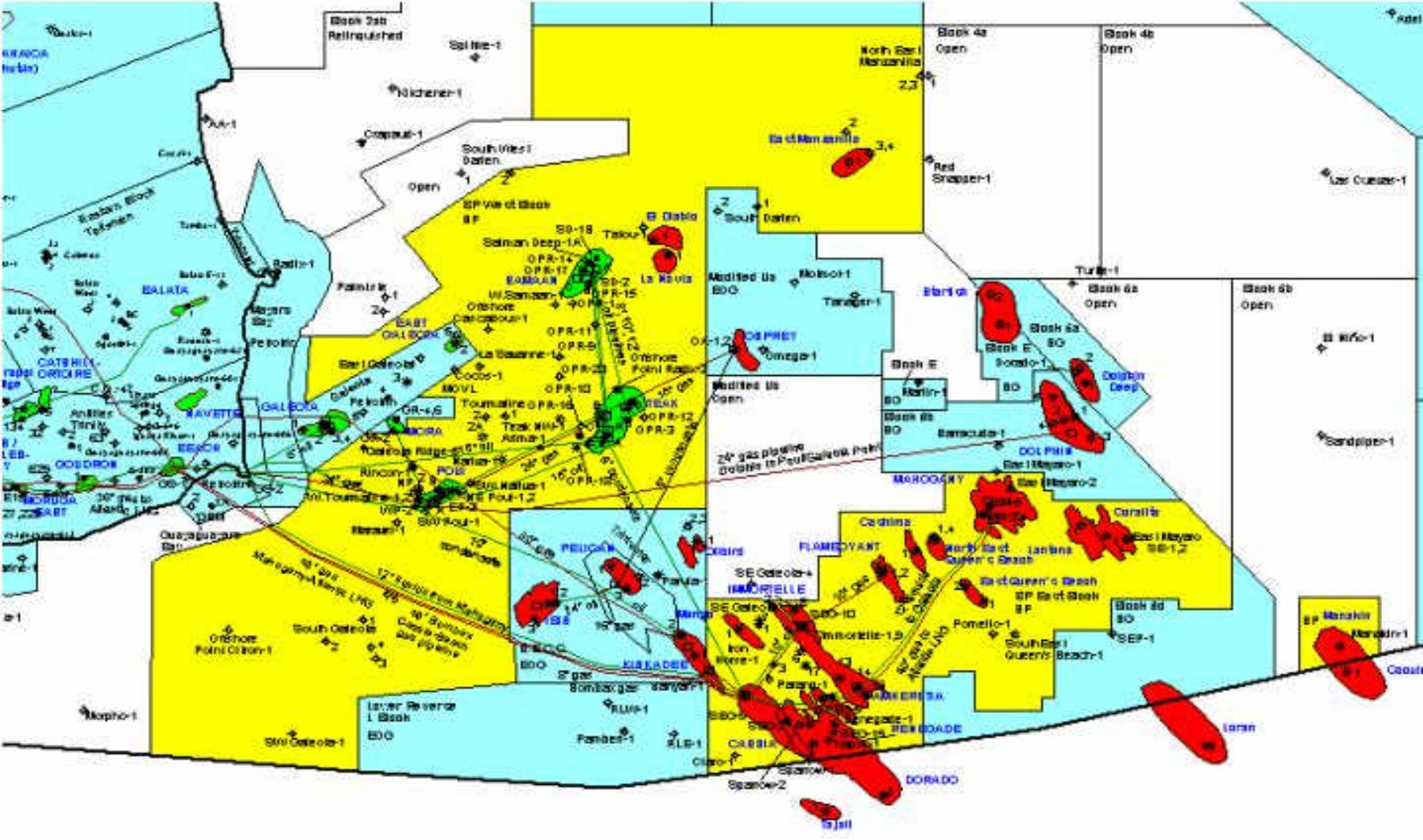
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# TRINIDAD & TOBAGO



# Trinidad & Tobago

## Current acreage





# Trinidad & Tobago Integrated LNG chain



**UPSTREAM**

**Reserves**

**30 %**



**MIDSTREAM**

**Stake in  
trains**

**23.4 %**

**Supply  
trains**

**22.3 %**

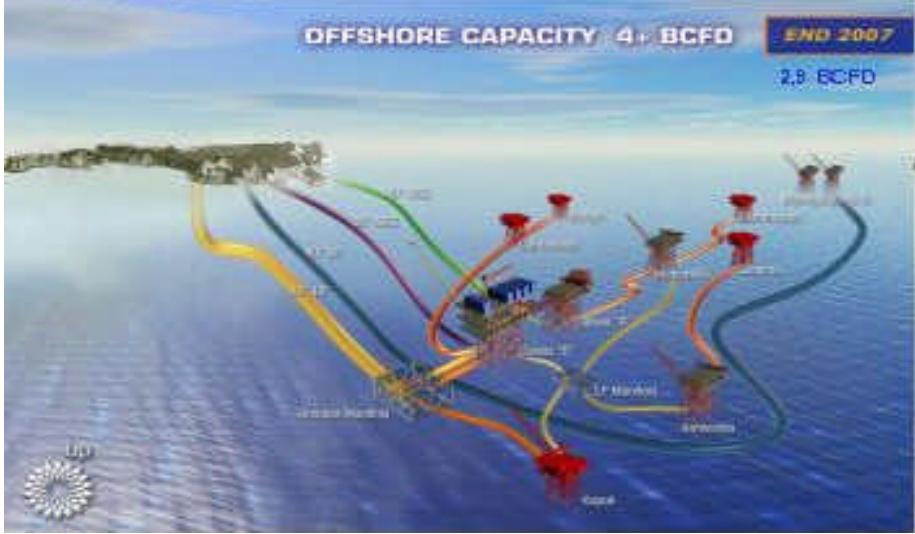
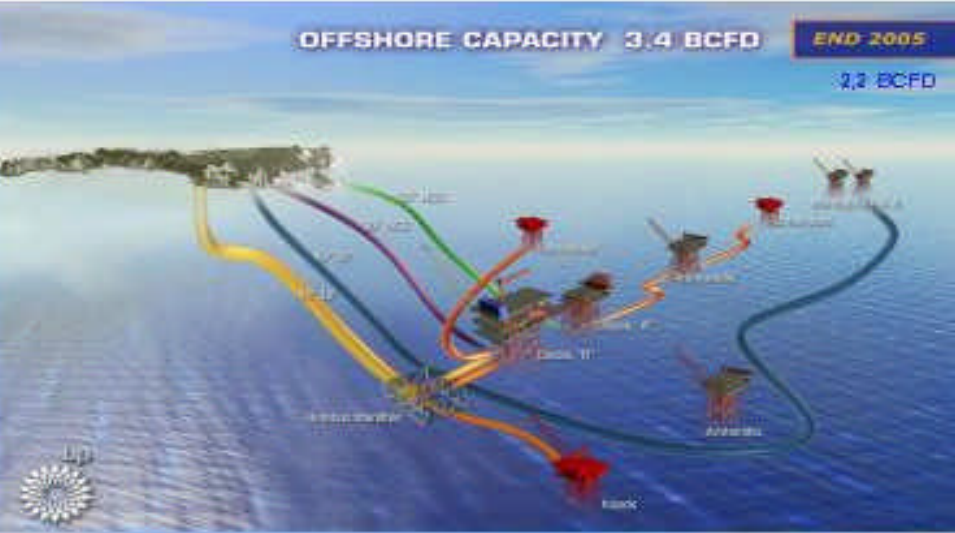


**Marketing  
and Trading**

**43.5 %<sup>(\*)</sup>**

(\*) Assuming 100% Gas Natural cargoes

# Trinidad & Tobago Upstream Development Views



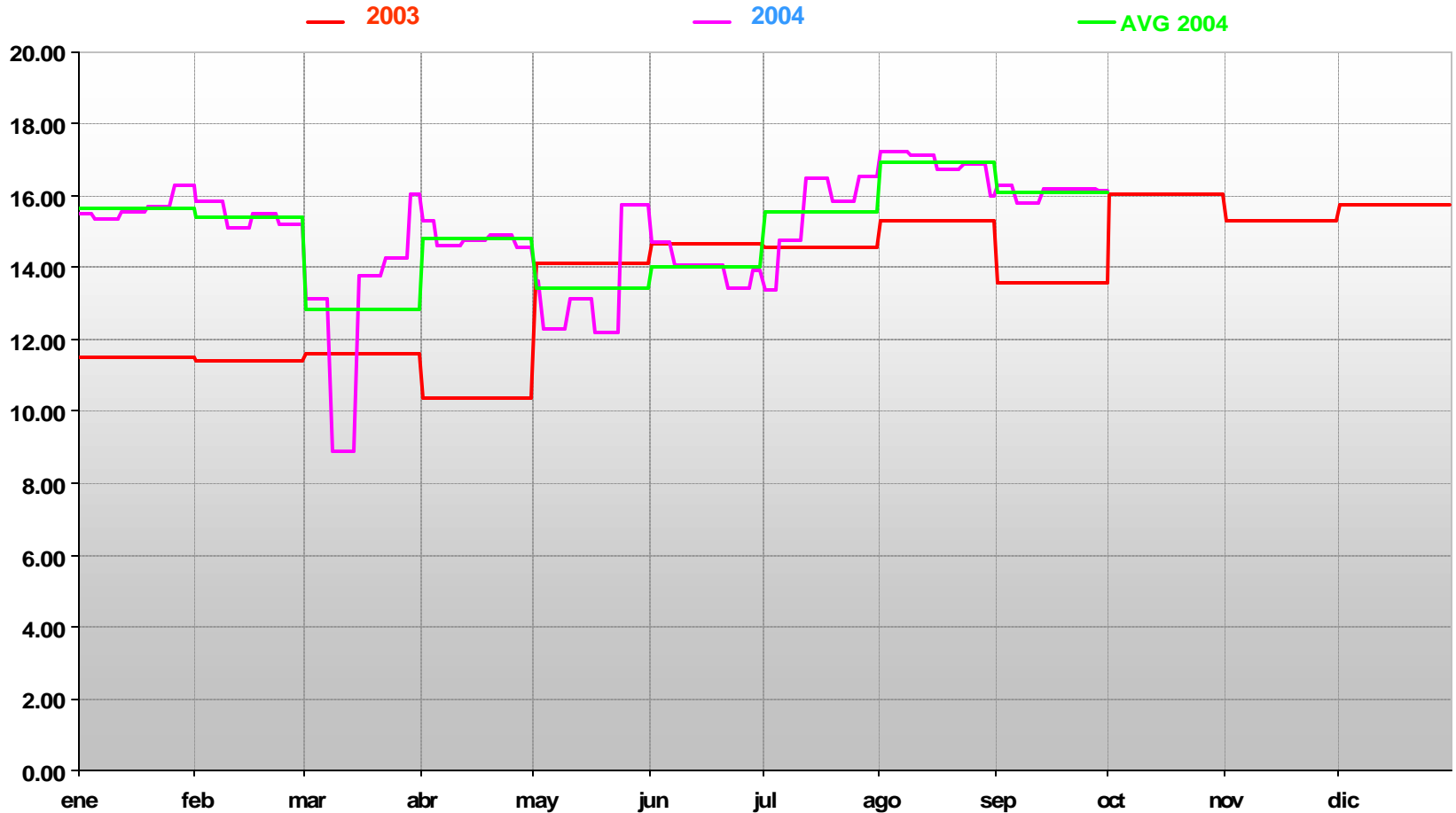
# Trinidad & Tobago

## Net Gas Daily Production ( M m3/d )



### TRINIDAD

NET GAS DAILY PRODUCTION (Mcmpd)



- **Proven Reserves @ Dec 2003: 841 M boes**
- **Start up of 4<sup>th</sup> LNG Train (End 2005 / Early 2006)**
- **Future increase in Domestic Demand (NGC, Ammonia & Aluminium Smelter Plants)**
- **Good exploration potential for further LNG Trains**
- **Looking for new business opportunities**

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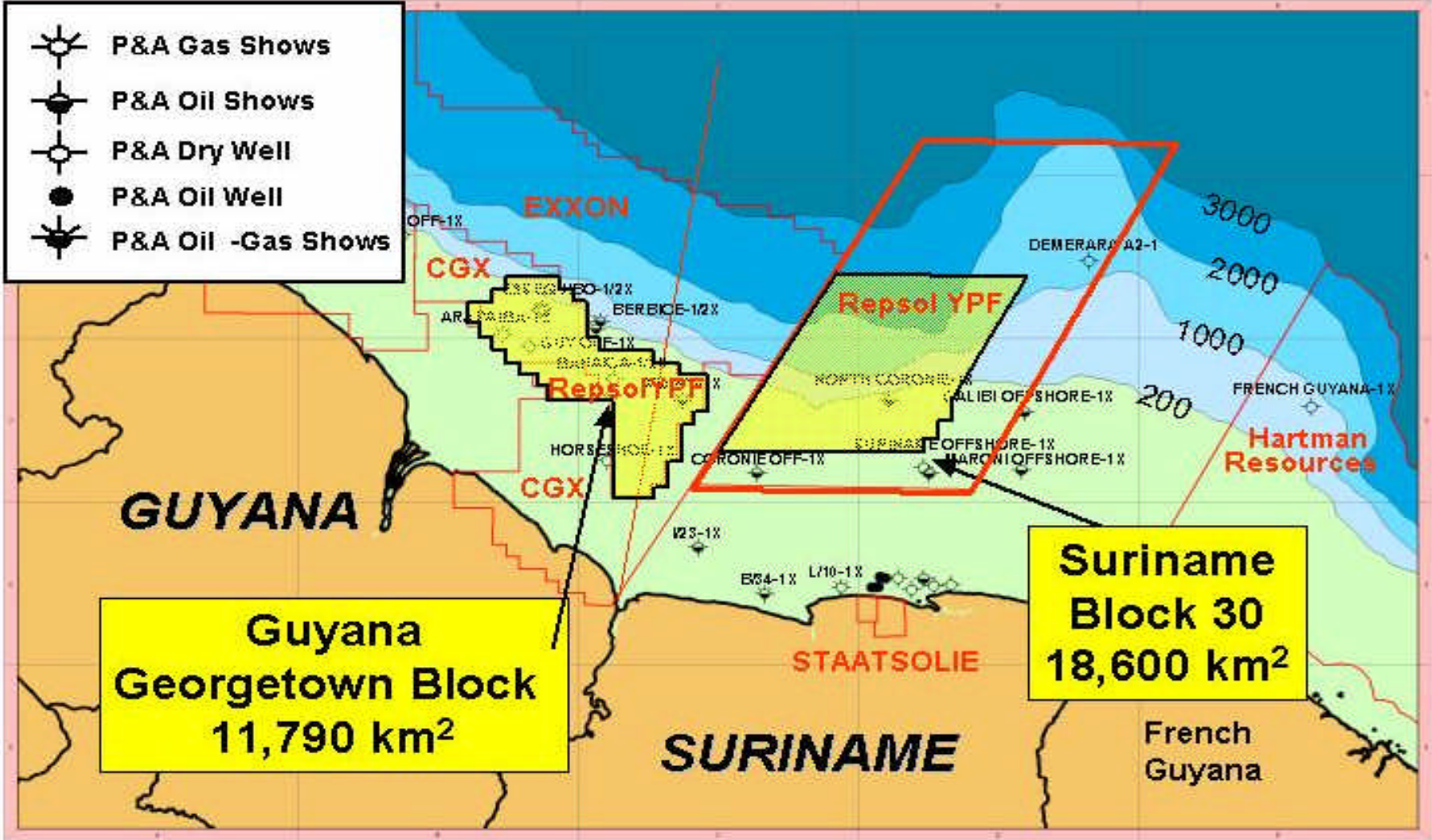
# GUYANA & SURINAME



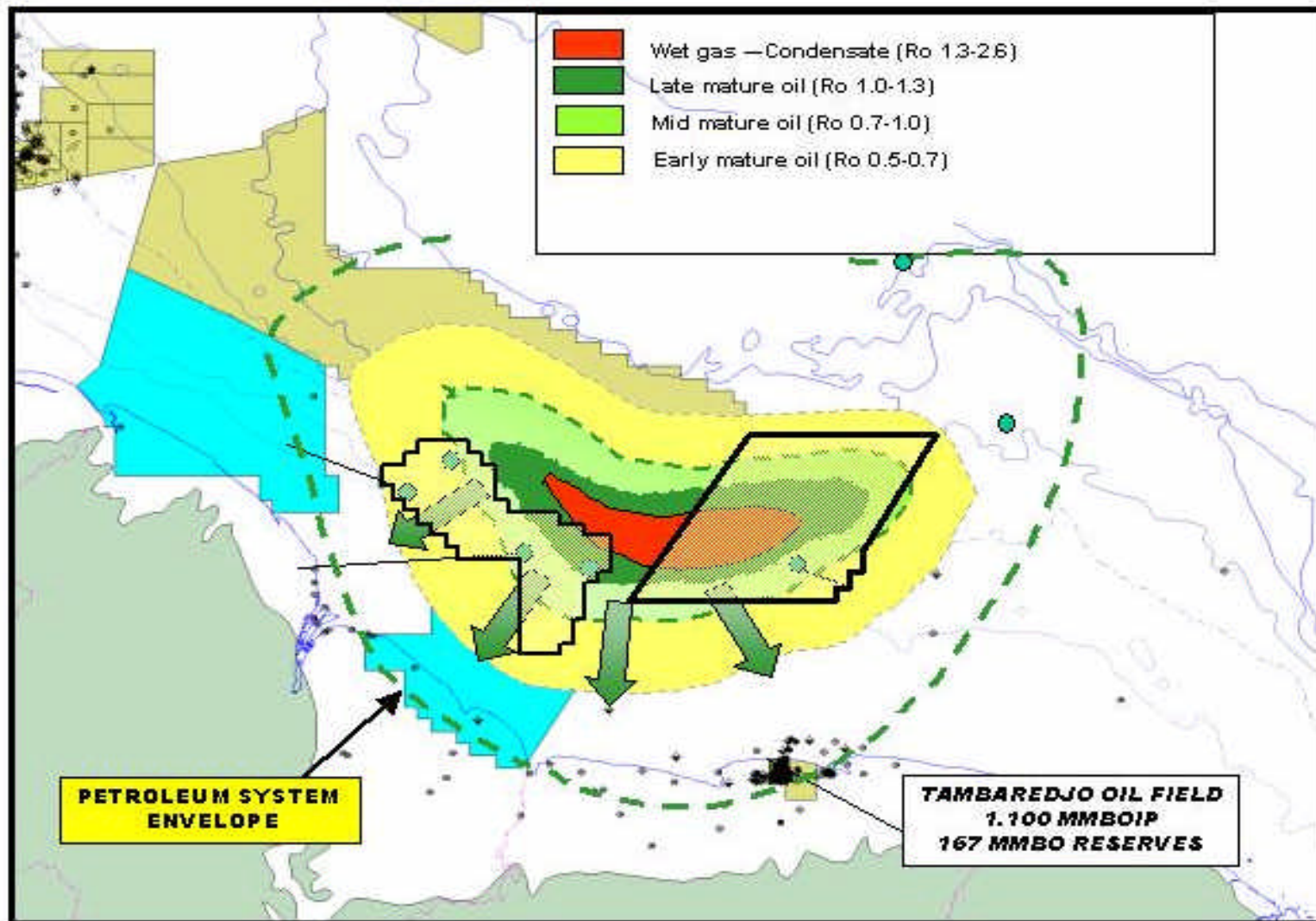


# Guyana / Suriname

## Current acreage



# Suriname / Guyana Basin Petroleum System Analysis





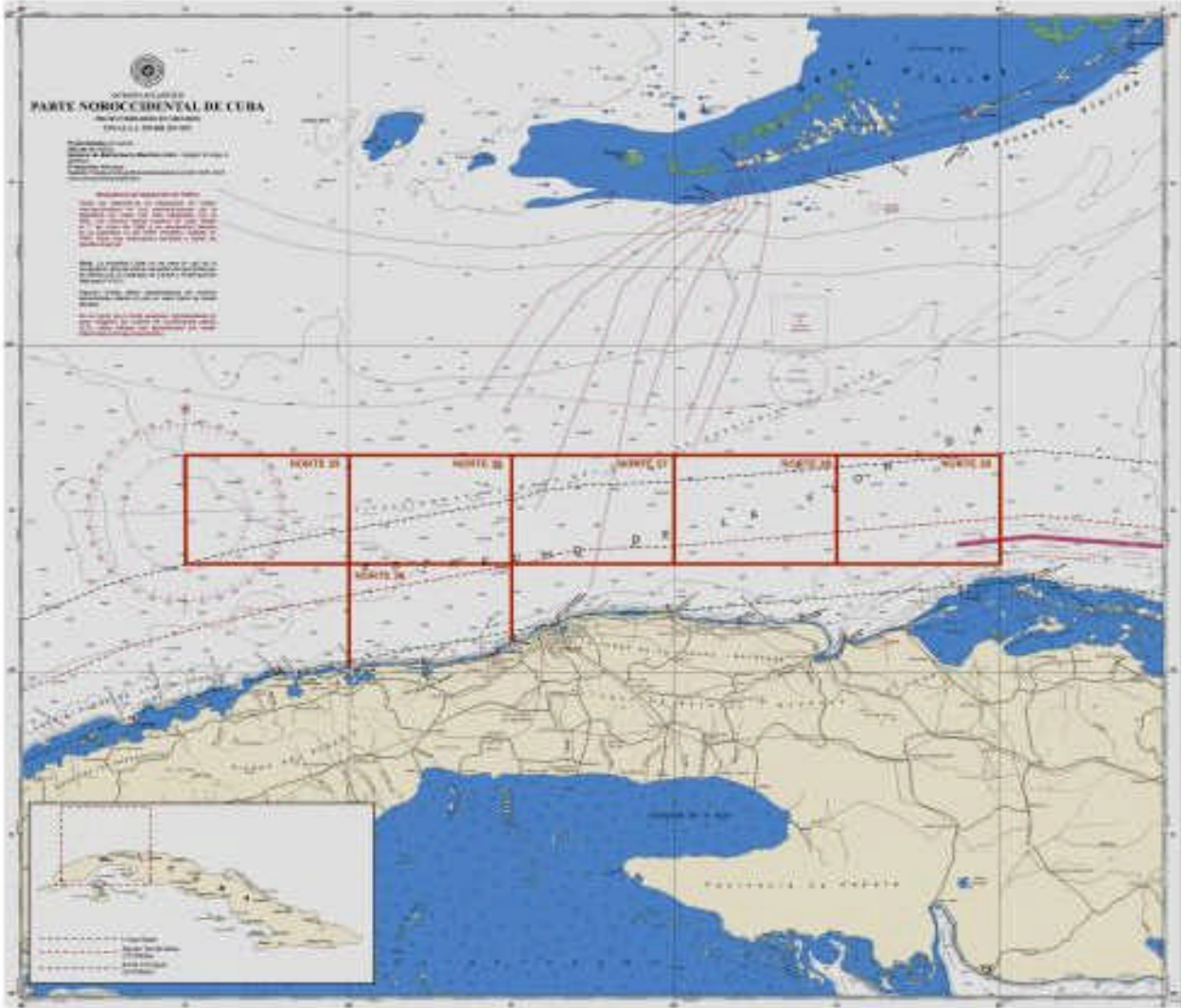
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# CUBA



# Cuba

## Current acreage



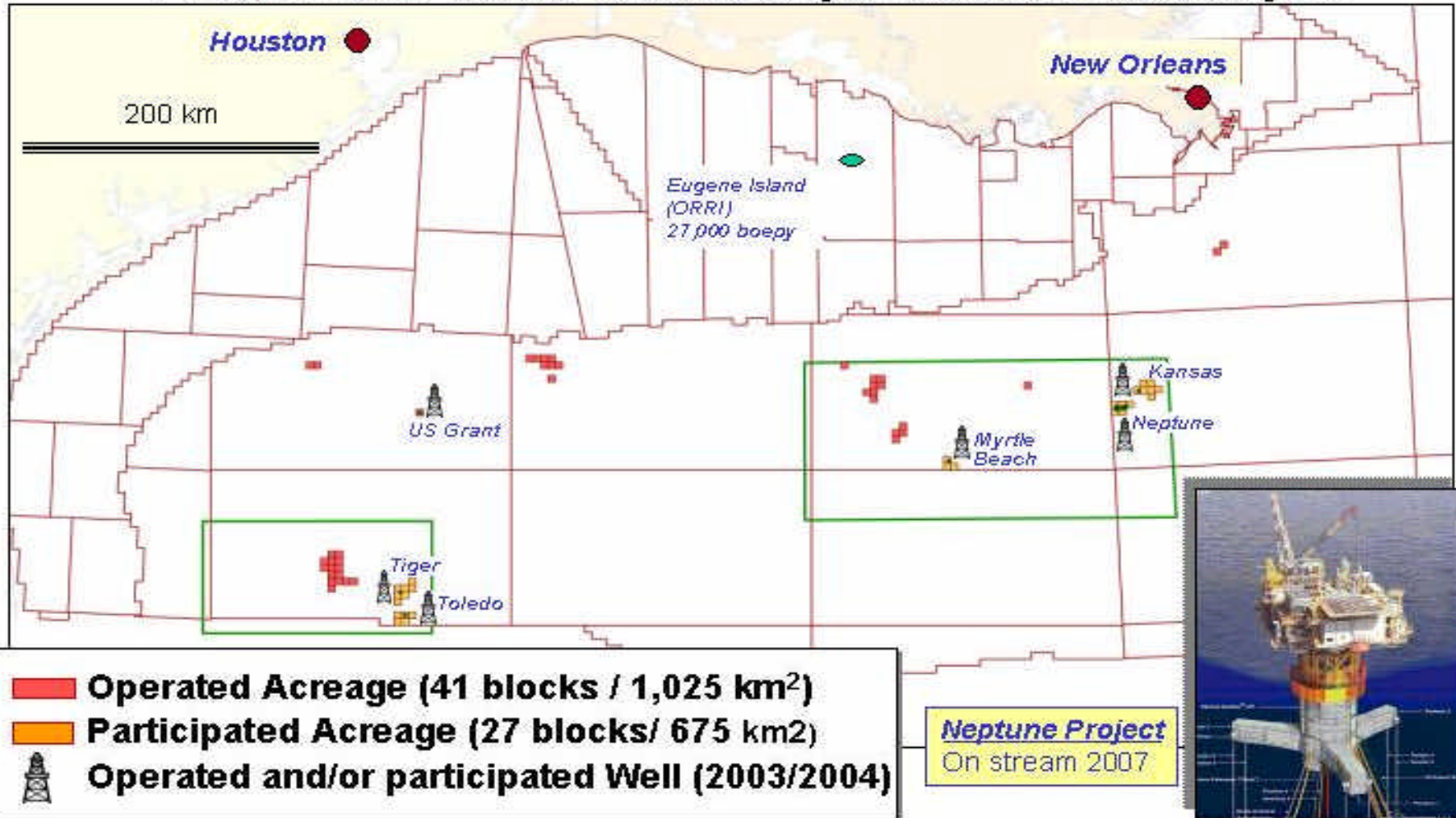
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# GULF OF MEXICO



# Gulf of Mexico 2003-2004 Activity Map

## Focus in two areas: Green Canyon & Alaminos Canyon



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# MEXICO





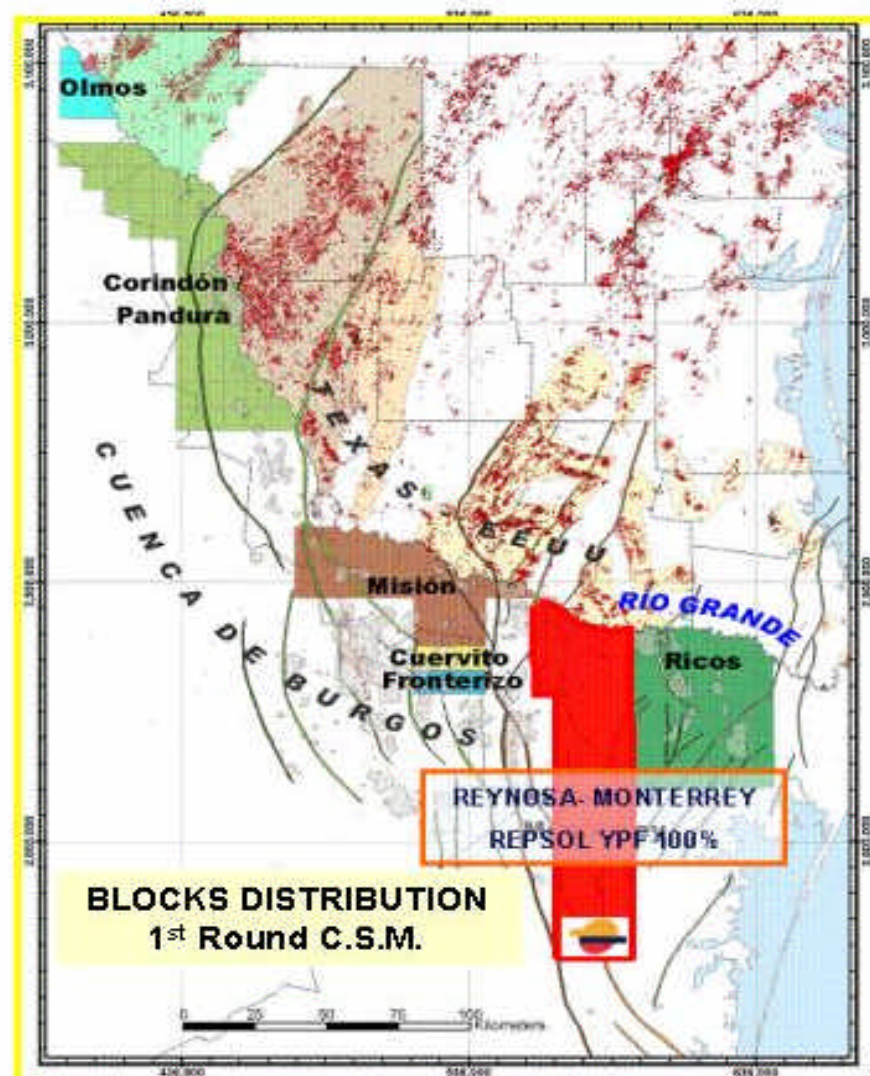
# Mexico : Burgos Basin Reynosa Monterrey Block



**Area: 3.552 Km<sup>2</sup>**  
**Active wells: 26**  
**Current Production: 12.5 MCFPD (357.000 m<sup>3</sup>/d)**  
**Cumulative Production @ 1/01/03: 2,6 TCF**  
**Discovered fields: 16**

Investment Levels:	2004	42.5 MUSD
	2005	60.0 MUSD
	2006	67.5 MUSD
	<b>TOTAL</b>	<b>170 MUSD</b>

***First IOC operating in Mexico  
since the nationalization of  
March, 1938***



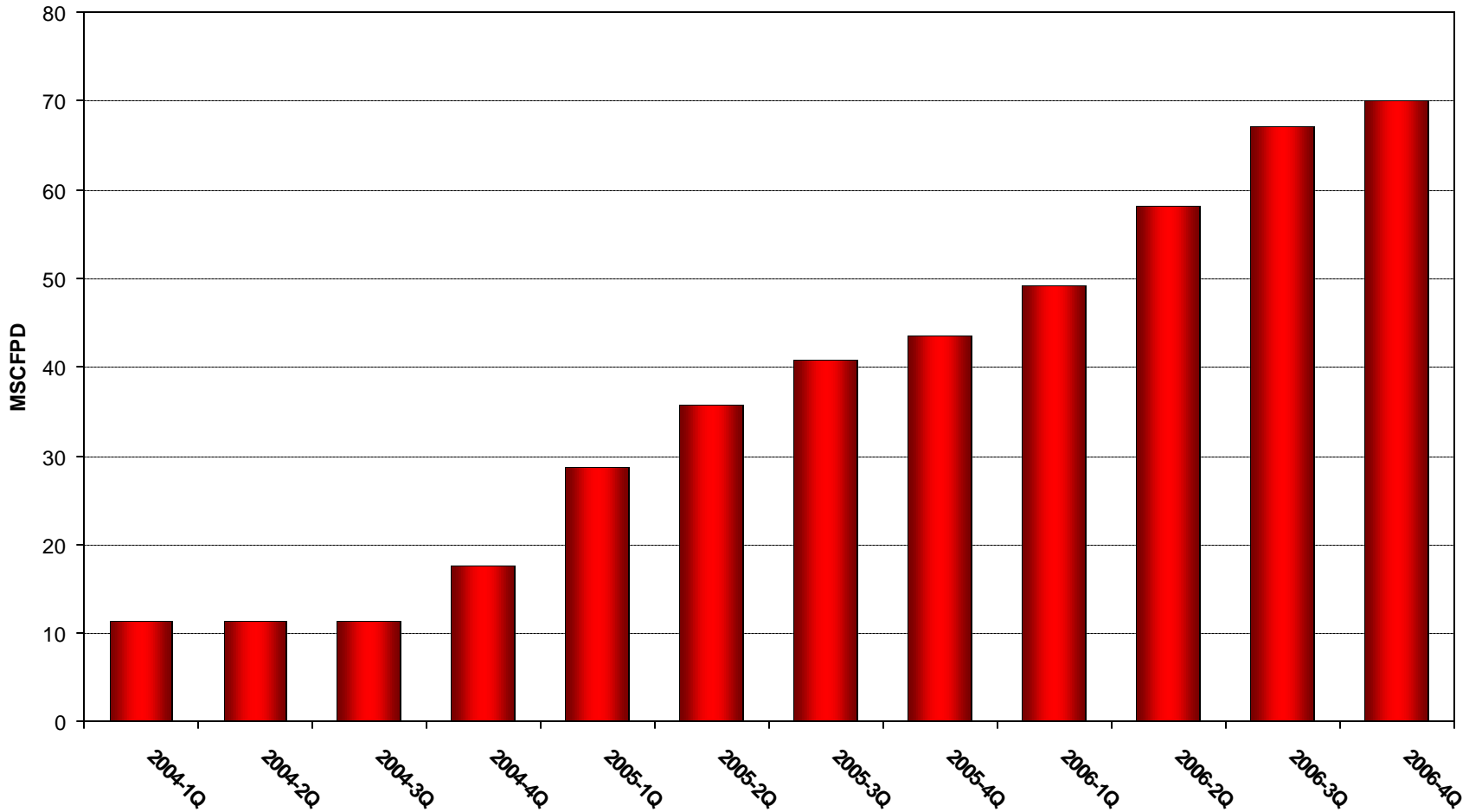
**BLOCKS DISTRIBUTION  
1<sup>st</sup> Round C.S.M.**

# Mexico : Burgos Basin

## Reynosa Monterrey Block



### GAS PRODUCTION 2004 - 2006

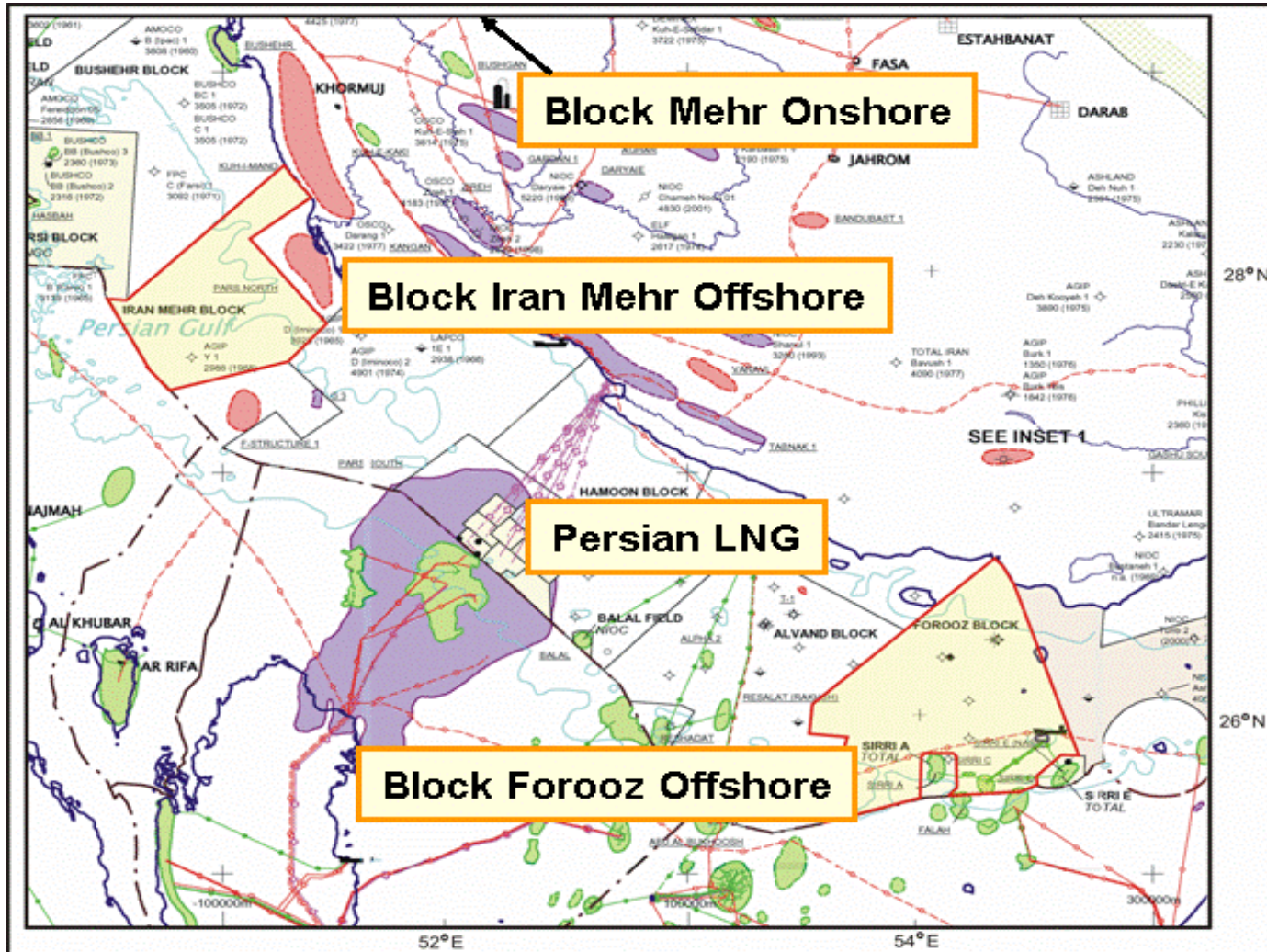




- **International presence**
- **Upstream Strategy**
- **Production and Reserves Overview**
- **Latin American and Gulf of Mexico Assets**
- **LNG Projects**

# Iran

## New Offshore Blocks & Persian LNG



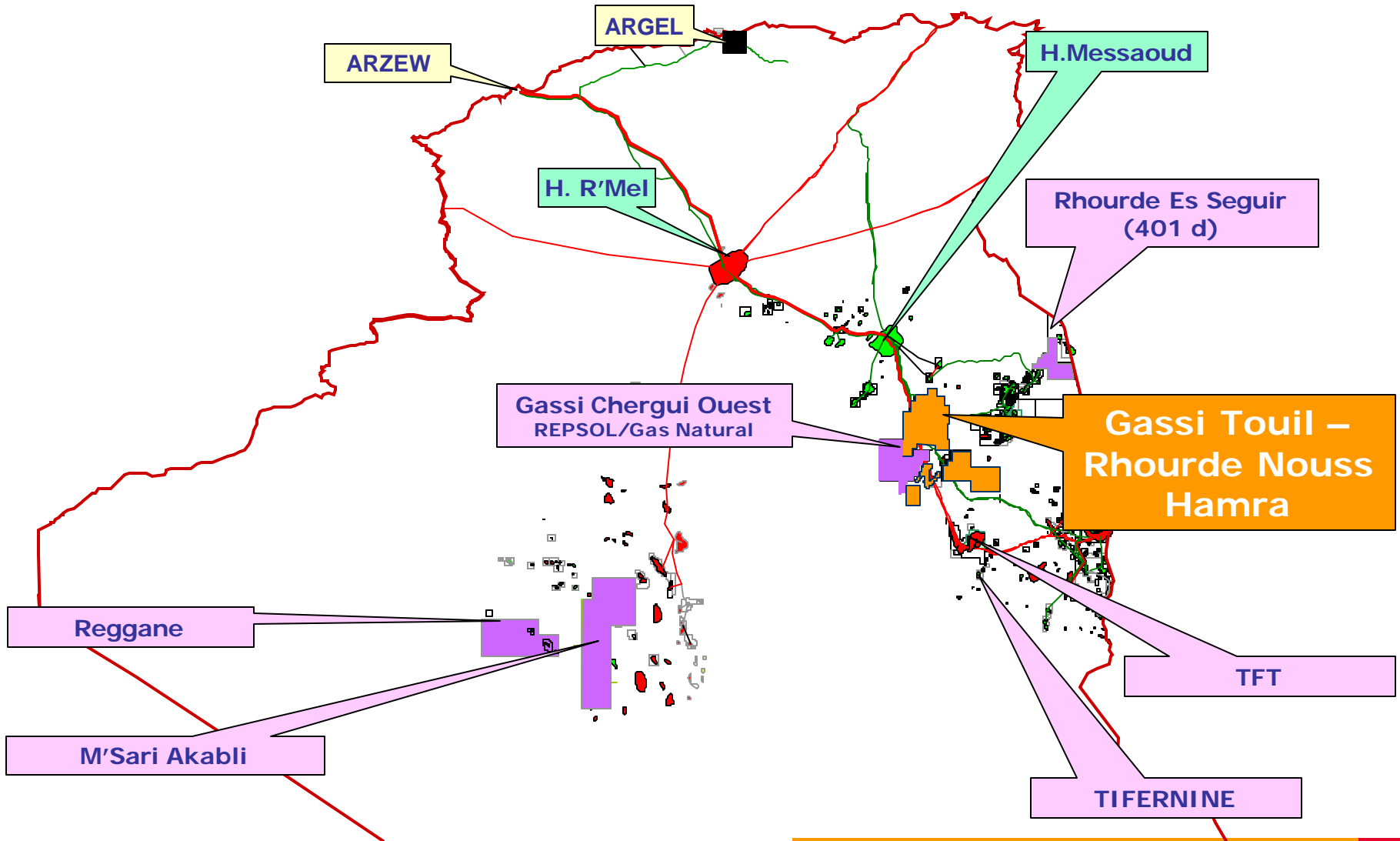


# ***INTEGRATED LNG PROJECT***

***Gassi Touil - Rhourde Nouss - Hamra  
(ALGERIA)***

***November , 2004***

# Repsol YPF in Algeria





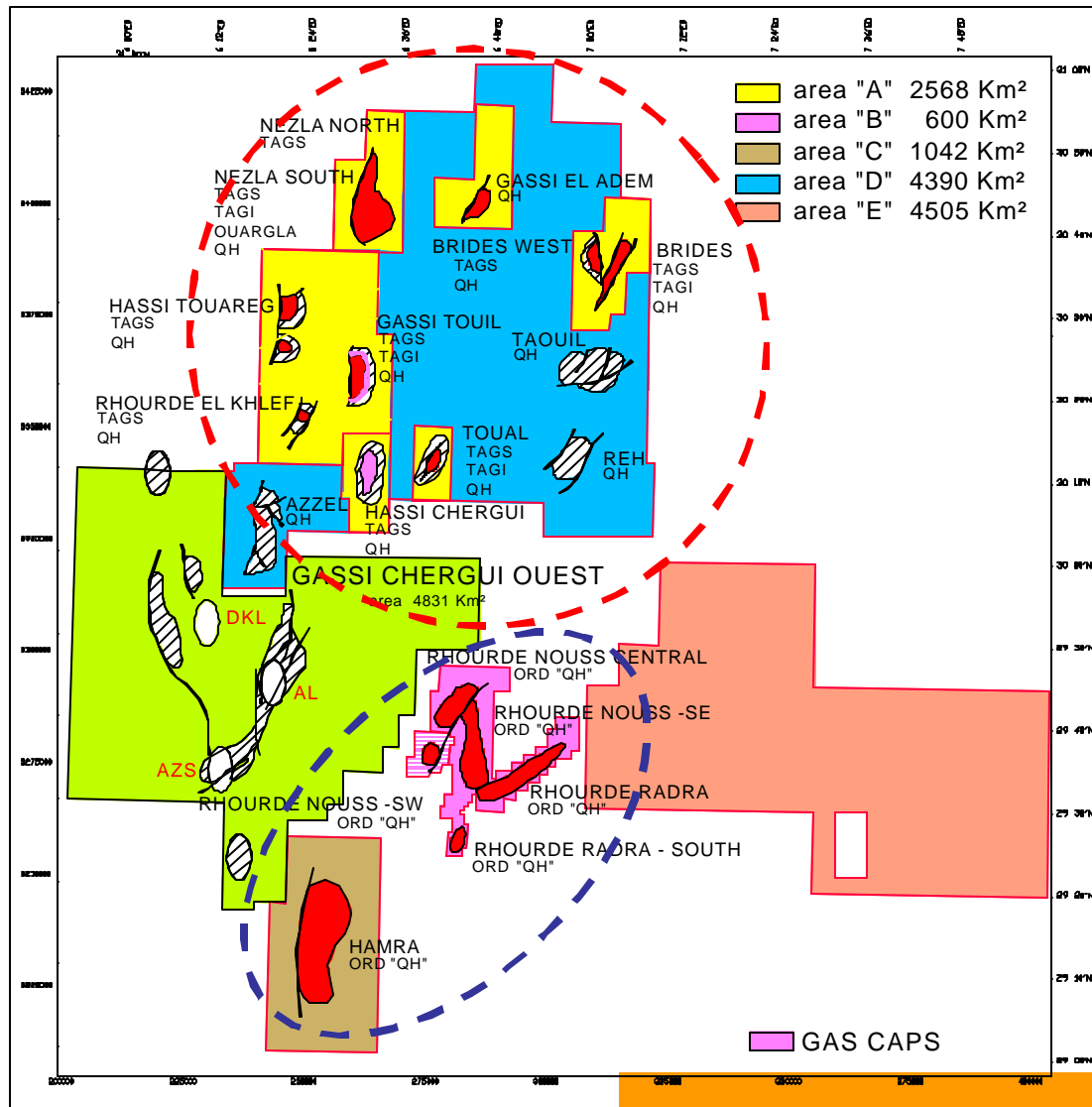
# Contract Area



**Gassi Touil Area including discoveries pending to be developed**

**GAS CAPS also included after 2015**

**Discoveries of Rhourde Nouss & Hamra "HQ"**



**GASSI CHERGUI OUEST is not a part of the Contract Area but was awarded to RY-GN in the 5<sup>th</sup> round.**

**Area D and E included as exploration areas.**

# Main Objectives

---

- To develop and produce all the fields discovered in the areas of Gassi Touil, Rhourde Nous and Hamra. Some 6,5 BCM of gas is required for the 1<sup>st</sup> LNG train with export beginning 4 1/2 years after the contract Effective Date.
- To build in Arzew one liquefaction train with a capacity of 4 million tons per year of LNG (5,2 BCM). The gas required by this train, during the 24.5 years production period, will be provided by gas exclusively coming from this project.
- Explore for new discoveries of gas or crude oil and appraise existing and new discoveries in order to confirm additional gas for a second LNG train.
- To build a 2<sup>nd</sup> LNG train in Arzew with the same capacity. This train will be fed partially from the contract area, depending on exploration and appraisal results.
- To build incremental transportation capacity to transport gas for the 2<sup>nd</sup> train.
- To commercialise with Sonatrach all of the LNG coming from the Contract Area in order to maximise the contract value.

## Gassi Touil Integrated Project

Contract governed by the Law 86-14

**Upstream  
Aspect**

65% Contractor / 35% SH

**TRANSPORTATION  
Aspect**

SH-Transporteur

**LNG Plant  
Aspect**

80% Contractor / 20% SH

**MARKETING  
Aspect**

49% Contractor / 51% SH

“Not for profit”



## E&P Revenues:

- Liquids (Crude Oil, Condensate & LPG) from Upstream and the LNG plant (LPG and gasoline) are shared between the upstream investors and Sonatrach.
- The revenues from the LNG commercialisation are shared between the investors and Sonatrach.
- Sharing is determined by the K factor offered.

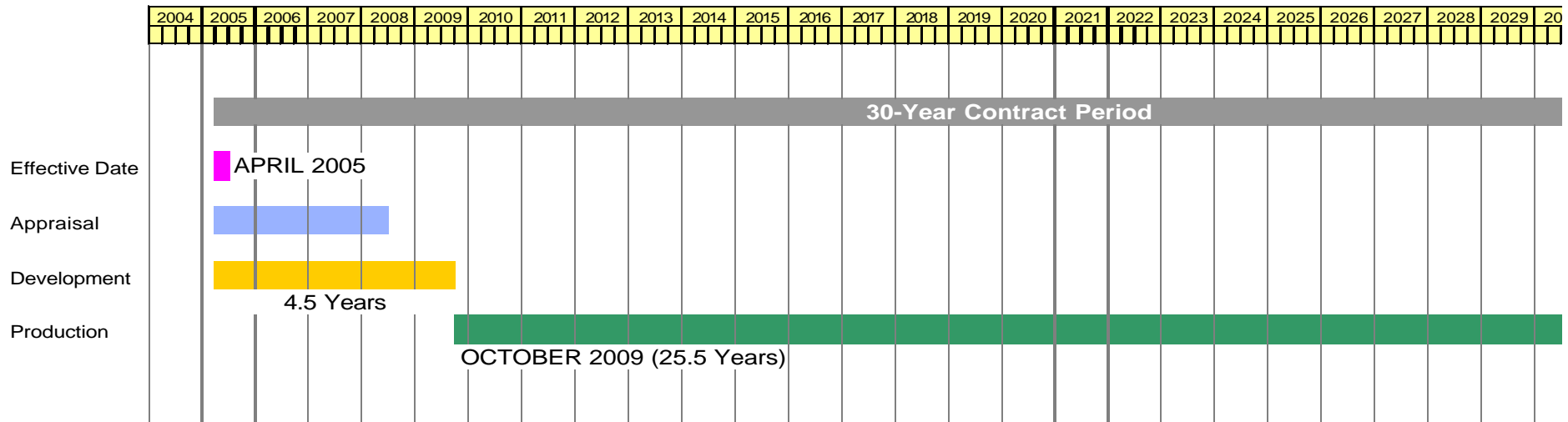
## LNG Plant Revenues:

- Plant revenues are based on the liquefaction tariff offered in the bid and are paid by the upstream investors.
- The tariff is inflated with the American CPI-U and MEI of the USA.

## Commercialisation:

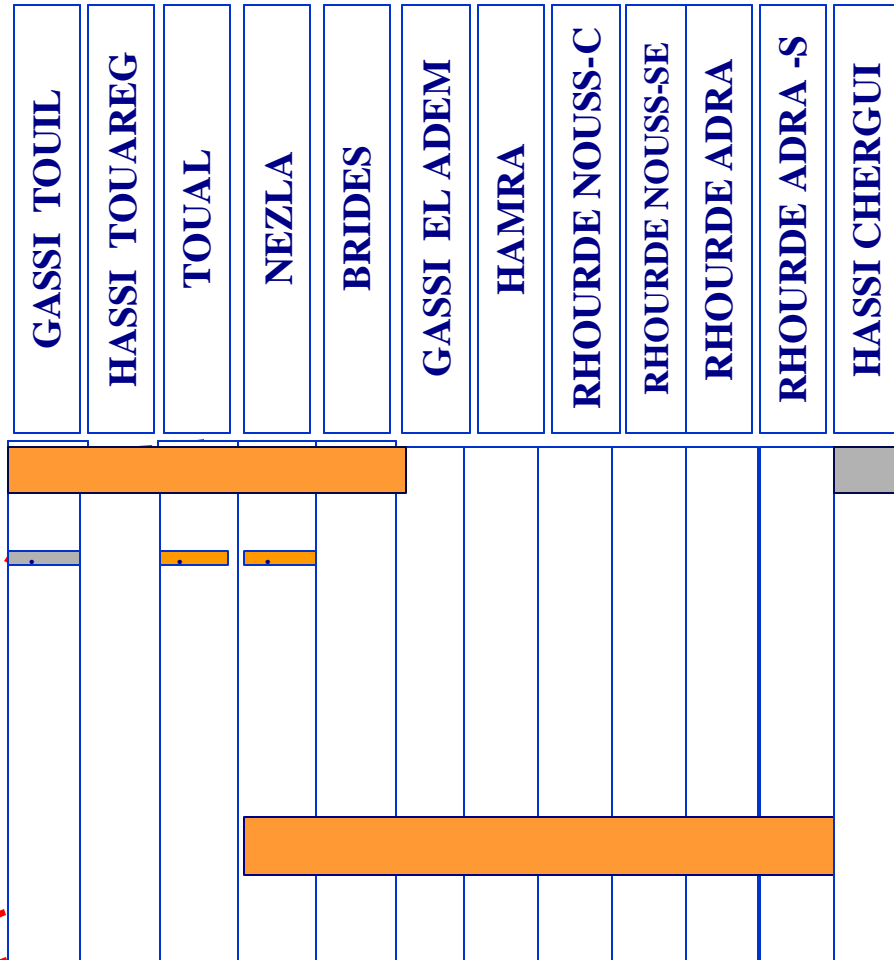
- Commercialisation of LNG will take place via a Company resident outside of Algeria which is owned by SH (51%) and the Contractor (49%).

# Planning



# Stratigraphic Column

STRATIGRAPHIC COLUMN			
AGE	FORMATION	LITHOLOGY	
CRETACEOUS	QUAT.	Sol.	
	MIO-PLIOGENE	Sol., Dol., Lemat.	
	DARFUGATE		Dol., Shale
	BERNIAN		Anhy., Dol.
	SALT	Shale	
	TURONIAN	Limestone, Shale	
	CENOMANIAN	Limestone, Salt Shale	
	ALBIAN	Sol., Lignite	
APTIAN	Dol.		
BATTEMAN	Sol., Shale, Lignite		
JURASSIC	NEOCOMIAN	Shale, Sol., Dol.	
	MALM		
			Shale, Sol., Anhy., Dol.
	ANSELMIK	Shale	
	LAMUNARE	Shale, Limestone	
	ANHYDRITE	Anhydrite, Shale	
	SALT	Sol.	
	RENE B	Sol., Limestone	
	01 + 02	Sol., Anhy.	
	03	Sol.	
04	Sol., Anhy.		
CARB.	PERMIAN	Sol., Shale	
	TRIASSIC	Sol., Shale	
	TRIASSIC	Sol., Shale	
	TRIASSIC	Sol., Shale	
	TRIASSIC	Sol., Shale	
	TRIASSIC	Sol., Shale	
	TRIASSIC	Sol., Shale	
	TRIASSIC	Sol., Shale	
	TRIASSIC	Sol., Shale	
	TRIASSIC	Sol., Shale	
DEVONIAN	DEVONIAN	Shale	
	DEVONIAN	Shale	
	DEVONIAN	Shale	
	DEVONIAN	Shale	
	DEVONIAN	Shale	
	DEVONIAN	Shale	
	DEVONIAN	Shale	
	DEVONIAN	Shale	
	DEVONIAN	Shale	
	DEVONIAN	Shale	
ORDOVICIAN	ORDOVICIAN	Shale	
	ORDOVICIAN	Shale	



GAS CAPS available in 2015

TAGS Reservoir

TAGI Reservoir

ORDOVICIAN Reservoirs

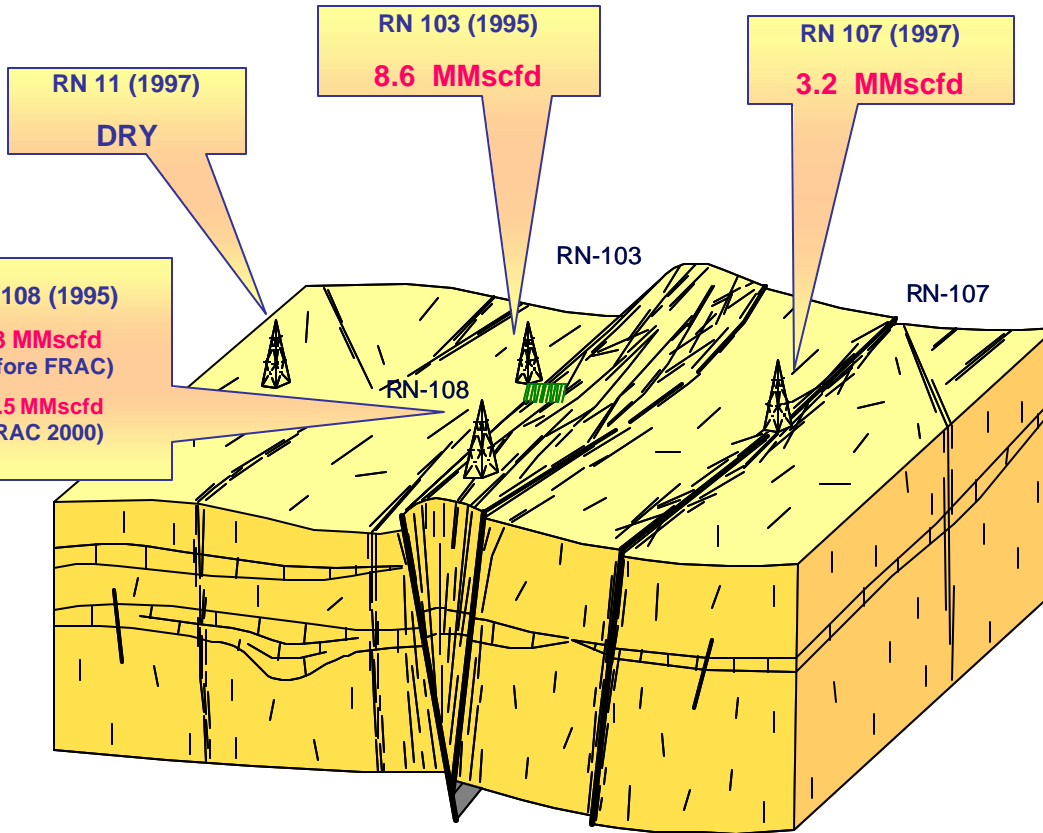
# Fields

Zone	Gassi Touil	Hassi Touraeg	Nezla Sud	Toual	Hassi Chergui	Gassi El Adem	REK	Brides	Brides West	Brides Sud	Azzel Nord	Taouil	REH	RNC	RNSE	RNSW	RA	RAS	Hamra
TAGS	Prod	Prod	Prod	Prod	Gas Cap			Undev	Undev	Expl									
TAGI	Gas Cap		Undev	Prod			Undev												
HQ	Expl	Expl	Undev	Expl	Expl	Undev	Expl	Undev	Expl	Expl	Expl	Expl	Expl	Undev	Undev	Undev Oil	Undev	Undev	Undev

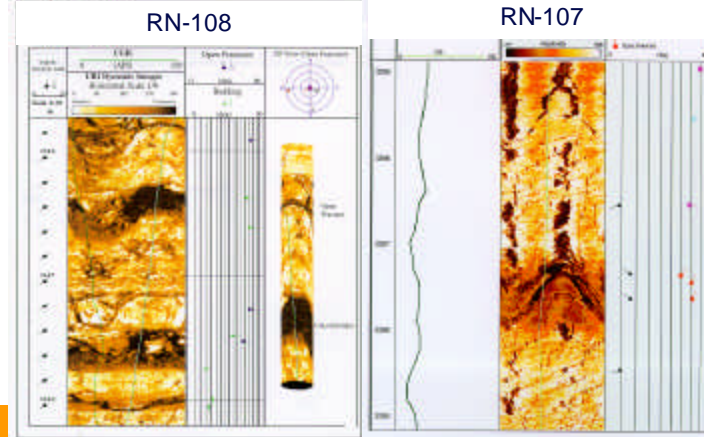
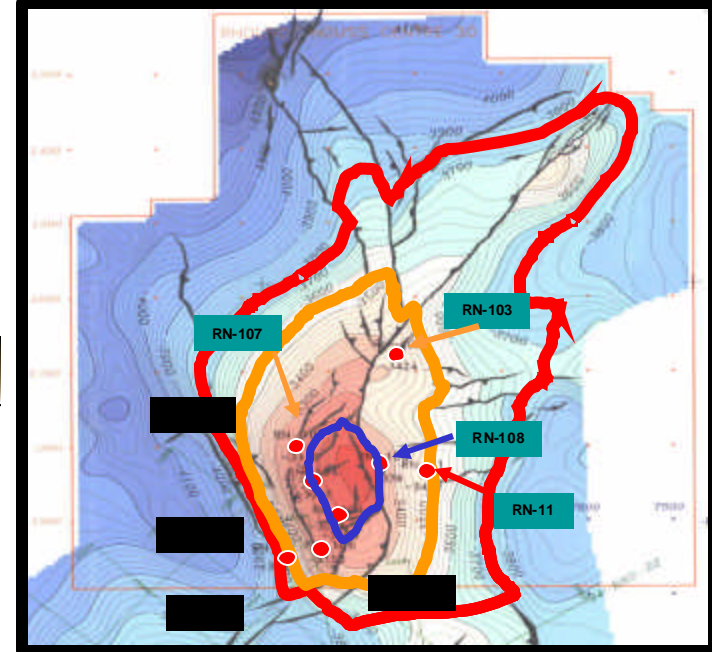
Prod	4 Producing Gas Fields with 5 Reservoirs
Gas Cap	2 Producing Oil Rims with Gas Caps available in 2015
Undev	10 Undeveloped Gas Discoveries with 12 Reservoirs
Undev Oil	1 Undeveloped Oil Field requiring Appraisal
Expl	6 Fields with Deeper HQ Potential 4 Prospects with 5 Reservoir Objectives

# Rhourde Nouss: Wells tests performed

## RHOURDE NOUSS CENTRAL DISCOVERY



**CONCEPTUAL  
GEOLOGICAL MODEL**



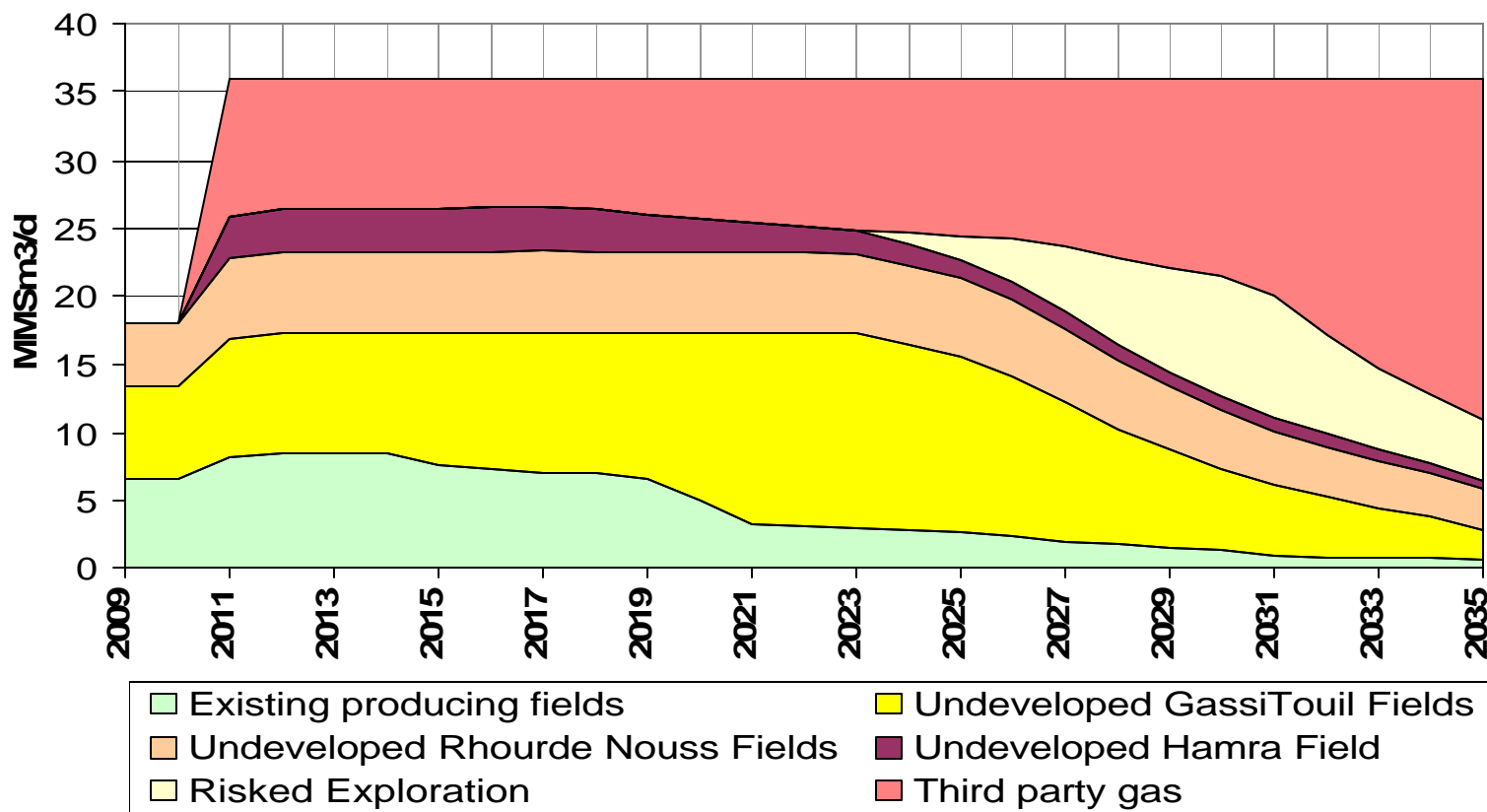


# Production Test Results

Field	Well	Production Test Results (Mm3/d)	
		Pre-Frac	Post-Frac
BRIDES	BRIDES-5	N/A	0,653
BRIDES	BRIDES-6	0,212	1,056
RN	RN-108	0,184	0,651

# Production Scenario for 2 LNG Trains

Proportion of third party gas for second train will depend on results of appraisal and exploration



## ONE LNG PLANT

		100% Project	RY-GN
Upstream	M\$	2051	1384
LNG Plant	M\$	895	716
<b>TOTAL</b>	<b>M\$</b>	<b>2946</b>	<b>2100</b>
	<b>M€</b>	<b>2284</b>	<b>1628</b>

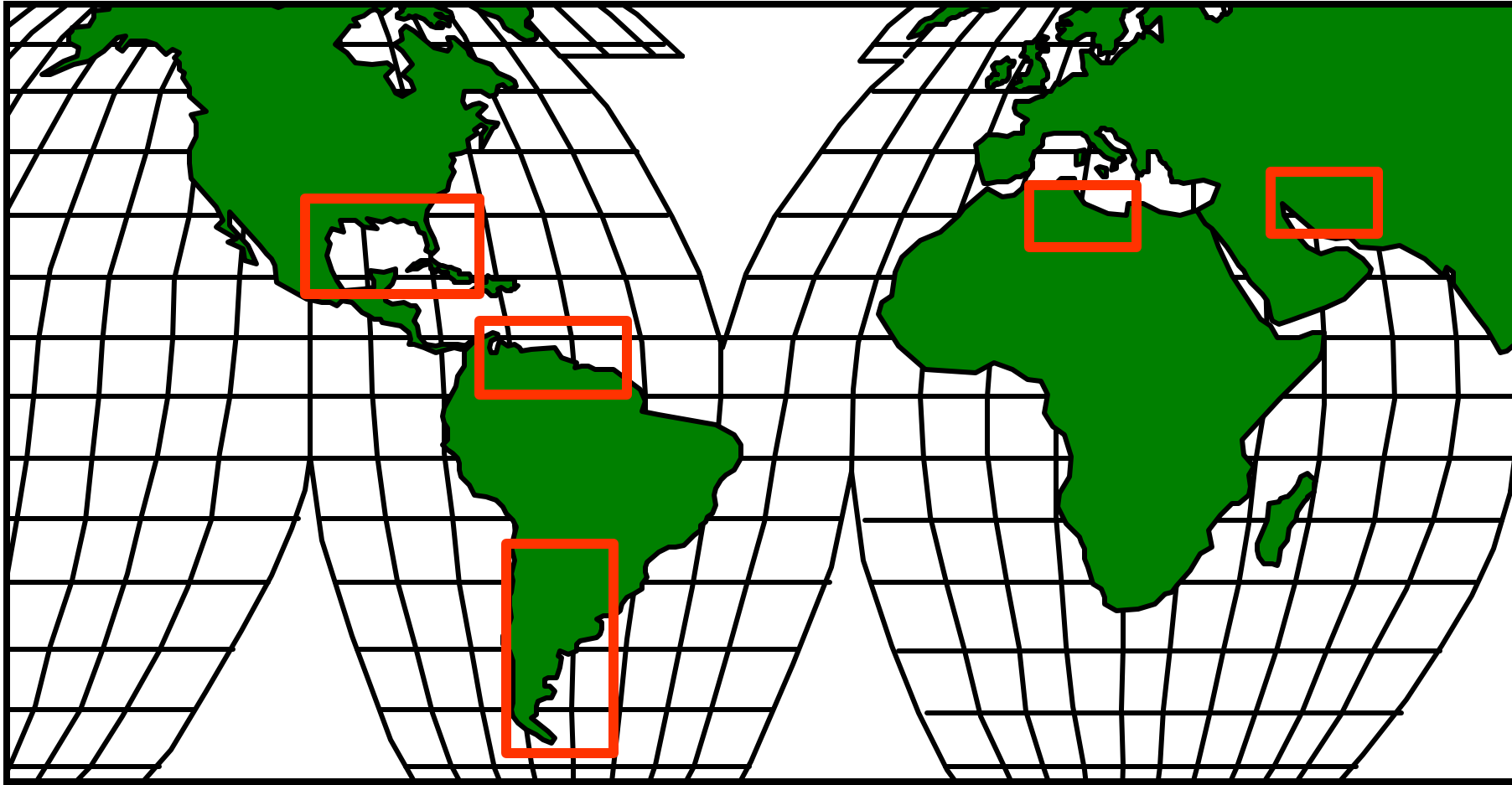
## TWO LNG PLANTS

		100% Project	RY-GN
Upstream	M\$	2486	1631
LNG Plant	M\$	1448	1158
<b>TOTAL</b>	<b>M\$</b>	<b>3934</b>	<b>2789</b>
	<b>M€</b>	<b>3050</b>	<b>2162</b>

# 2004 Exploration review

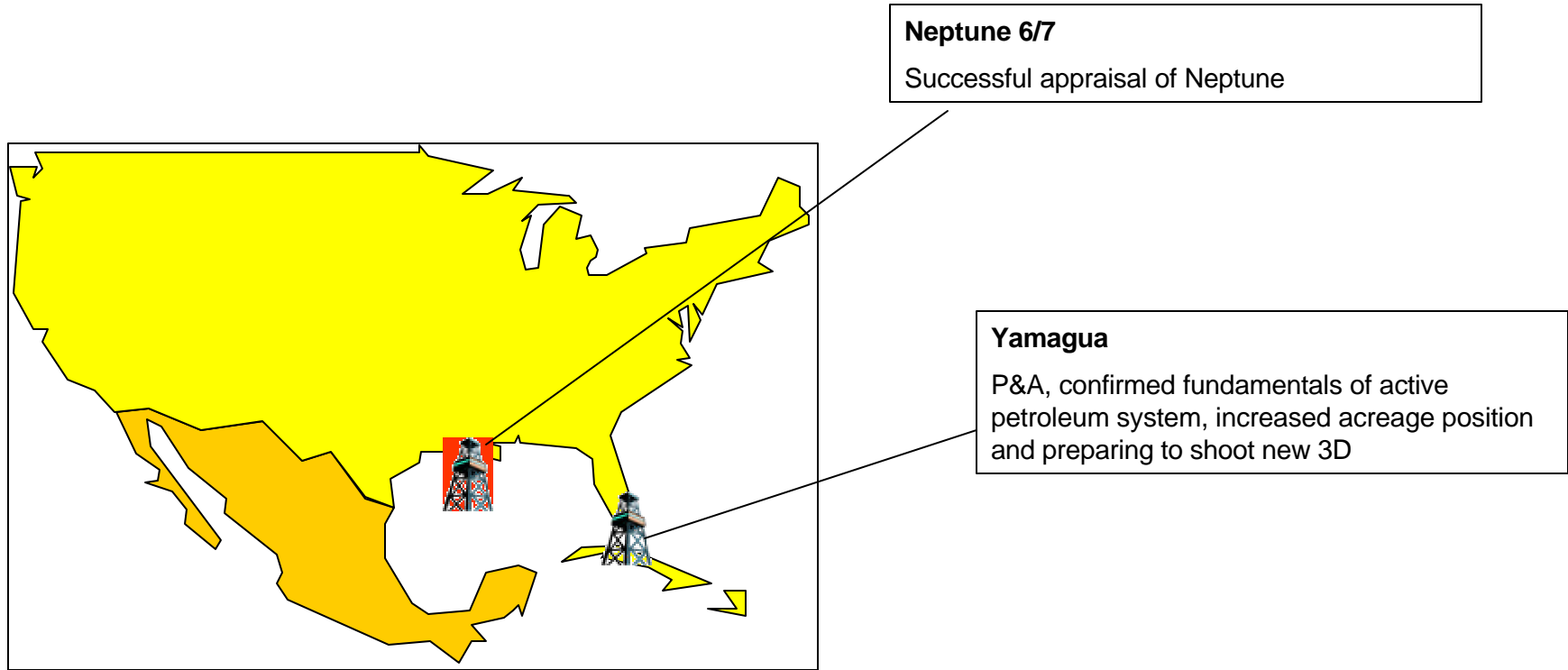
# Exploration


## Key well activity





# USA/GOM and Cuba



-  Wells finished as discoveries
-  Promising wells currently active
-  Countries with Production & Exploration
-  Countries with Exploration activities

# Venezuela and T&T

## Sipororo

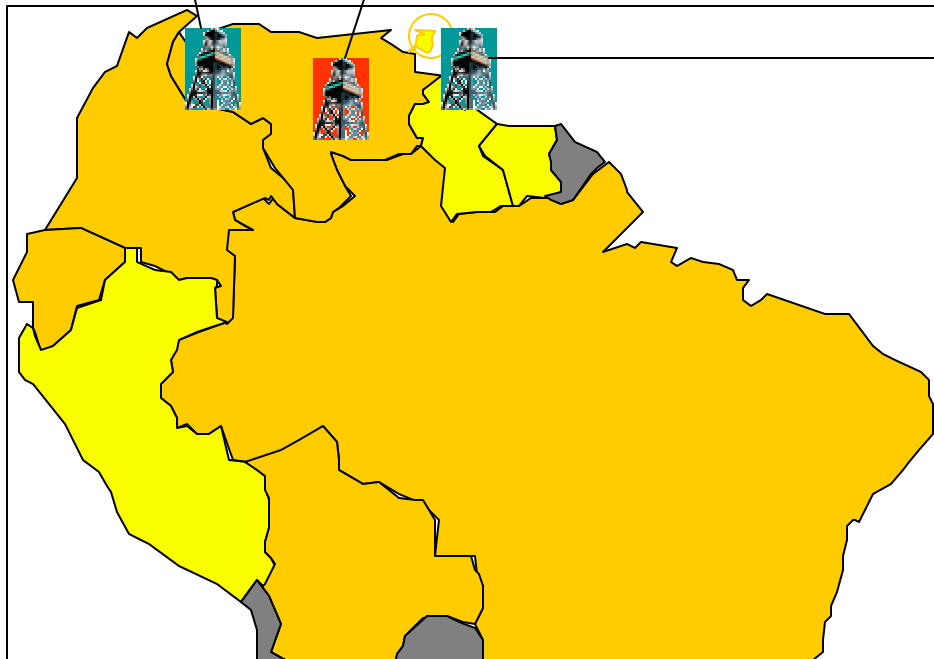
Waiting on test, excellent gas shows and good porosity

## Tropical

Waiting on test, excellent gas shows and good porosity

## Chachalaca

Drilling with good indications



Wells finished as discoveries



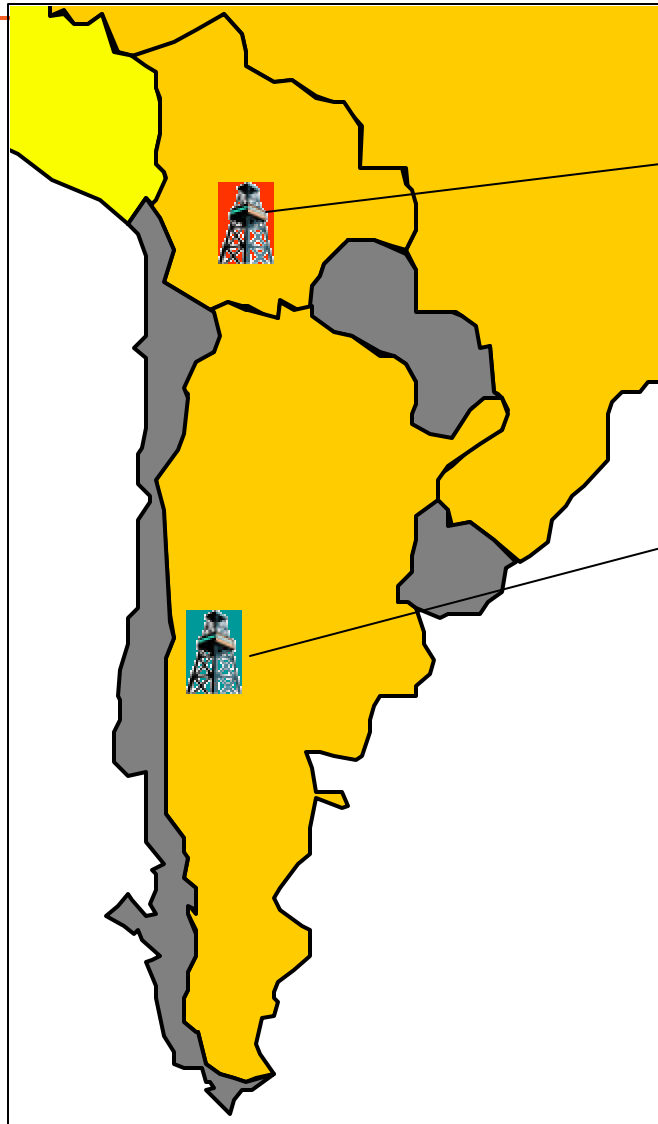
Promising wells currently active



Countries with Production & Exploration



Countries with Exploration activities



**Margarita 4**  
Stepout confirming northern extension of Margarita field. Tested first sheet, drilled through second and currently drilling to find third

**Precuyano**  
Cupén Mahuida Norte discovery, currently drilling appraisals for Cupén Mahuida, and finished logging Puesto Cortadera with excellent logging results



Wells finished as discoveries



Promising wells currently active



Countries with Production & Exploration



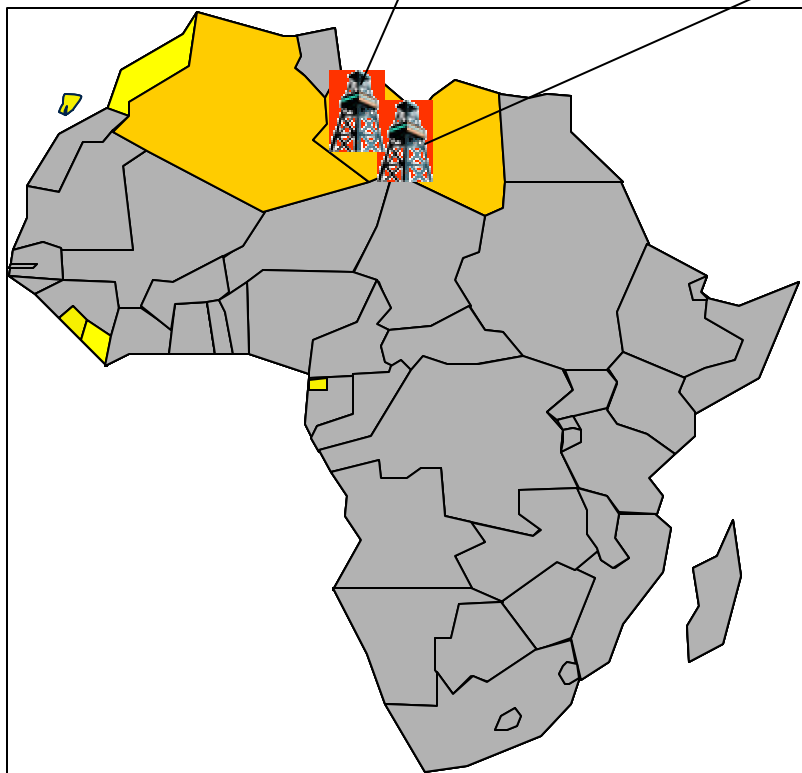
Countries with Exploration activities

## NC 186

H1 discovery in Hawaz Fm, G1 discovery in Devonian and 3 appraisals in B field

## NC 115

Successful appraisal in O structure



Wells finished as discoveries



Promising wells currently active



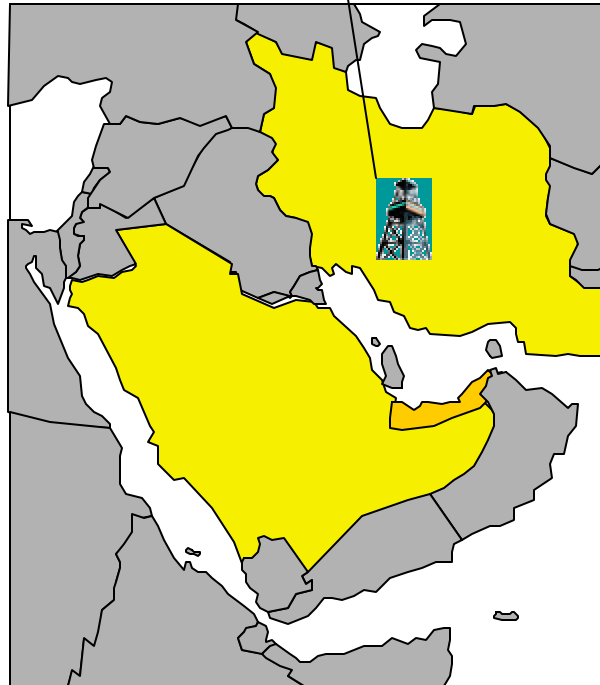
Countries with Production & Exploration



Countries with Exploration activities

## Band E Karkheh

Currently drilling, with very good indications



Wells finished as discoveries



Promising wells currently active



Countries with Production & Exploration



Countries with Exploration activities