Go to Table of Contents

Go to index map

North Cuba Fold and Thrust Belt
Assessment Unit 61170101

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Greater Antilles Deformed Belt Geologic Province 6117

Geologic Summary

Detailed map of this assessment unit

Exploration/Discovery-History Data

- Plots of Known Field Sizes
- Plots of Grown Resources
- Tables

Assessment Input Data

Assessment Results

- Assessment Unit Summary
- Detailed Assessment Results
- Undiscovered Field-Size Distributions

USGS PROVINCE: Greater Antilles Deformed Belt (6117) **GEOLOGIST:** C.J. Schenk

TOTAL PETROLEUM SYSTEM: Upper Jurassic-Neocomian (611701)

ASSESSMENT UNIT: North Cuba Fold and Thrust Belt (61170101)

DESCRIPTION: This assessment unit encompasses the fold and thrust structures that formed as a result of northwest collision between the Cuban island arc and the southern margin of North America in the Campanian-Maastrichtian to Eocene.

SOURCE ROCKS: The main source rocks are mudstones of the Upper Jurassic-Neocomian with TOC values as high as 14 percent and HI values as much as 760 mg HC/g. Type II organics are dominant in these source rocks.

MATURATION: Maturation of organic-bearing mudstones to the oil generative window is estimated to have occurred in the Middle to Late Tertiary following the deposition of the orogenic clastic wedge following collision.

MIGRATION: Migration is considered to have been mainly along the numerous thrust faults and inverted faults and into carbonate reservoirs.

RESERVOIR ROCKS: Reservoirs are mainly Upper Jurassic and Cretaceous shelf limestones in structural traps with secondary porosity reported as high as 18 percent, with permeabilities as much as 500 mD.

TRAPS AND SEALS: Traps are dominantly faulted anticlines, anticlines, north-verging folds, fault-tip folds, and inverted block faults formed during the collision of the Cuban island arc with the southern margin of the Bahamian carbonate platform. Seals may be a problem, but intraformational mudstones and diagenetic seals have been recognized in this unit.

REFERENCES:

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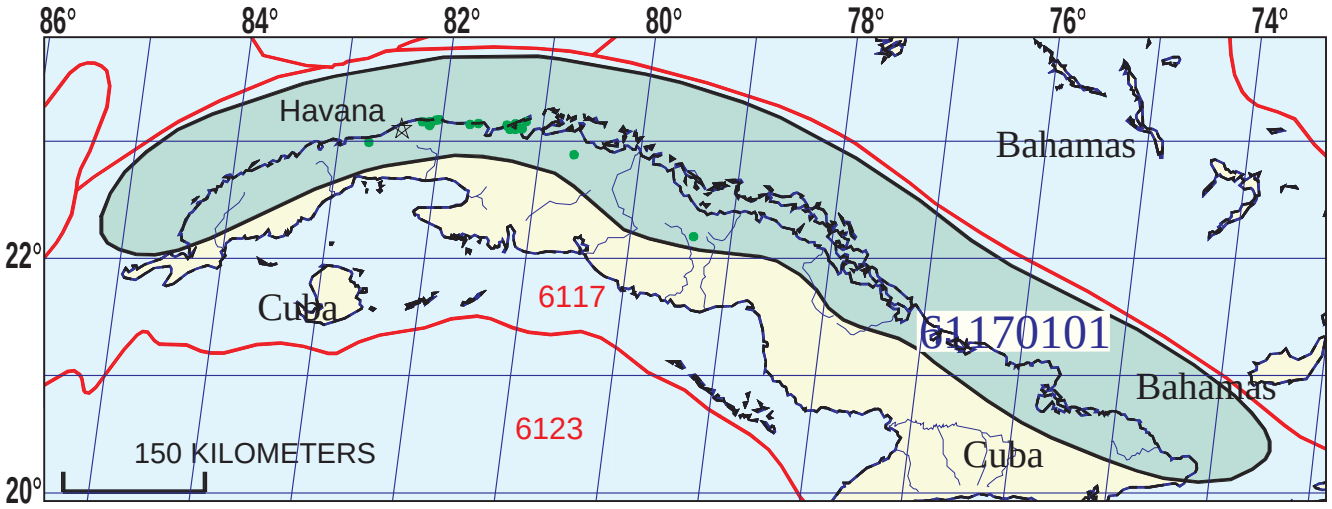

North Cuba Fold and Thrust Belt
Assessment Unit - 61170101

EXPLANATION

- Hydrography
- Shoreline
- 6117 — Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 61170101 — Assessment unit code and boundary

Projection: Robinson. Central meridian: 0

SEVENTH APPROXIMATION
NEW MILLENNIUM WORLD PETROLEUM ASSESSMENT
DATA FORM FOR CONVENTIONAL ASSESSMENT UNITS

Date:……..	12/15/99		
Assessment Geologist:……..	C.J. Schenk		
Region:……..	Central and South America	Number:	6
Province:……..	Greater Antilles Deformed Belt	Number:	6117
Priority or Boutique……	Boutique		
Total Petroleum System:……	Upper Jurassic-Neocomian	Number:	611701
Assessment Unit:……..	North Cuba Fold and Thrust Belt	Number:	61170101
* Notes from Assessor	Lower 48 growth factor.		

CHARACTERISTICS OF ASSESSMENT UNIT

Oil (<20,000 cfg/bo overall) **or** Gas (≥20,000 cfg/bo overall):… Oil

What is the minimum field size?……. 1 mmboe grown (≥1mmboe)
(the smallest field that has potential to be added to reserves in the next 30 years)

Number of discovered fields exceeding minimum size:…… Oil: 16 Gas: 0
Established (>13 fields) X Frontier (1-13 fields) _____ Hypothetical (no fields) _____

Median size (grown) of discovered oil fields (mmboe):
1st 3rd 4.2 2nd 3rd 8.3 3rd 3rd 6.2
Median size (grown) of discovered gas fields (bcfg):
1st 3rd _____ 2nd 3rd _____ 3rd 3rd _____

Assessment-Unit Probabilities:

Attribute	Probability of occurrence (0-1.0)
1. **CHARGE:** Adequate petroleum charge for an undiscovered field ≥ minimum size……	1.0
2. **ROCKS:** Adequate reservoirs, traps, and seals for an undiscovered field ≥ minimum size……	1.0
3. **TIMING OF GEOLOGIC EVENTS:** Favorable timing for an undiscovered field ≥ minimum size	1.0

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3):…….. 1.0

4. **ACCESSIBILITY:** Adequate location to allow exploration for an undiscovered field ≥ minimum size…… 1.0

UNDISCOVERED FIELDS

Number of Undiscovered Fields: How many undiscovered fields exist that are ≥ minimum size?:
(uncertainty of fixed but unknown values)

Oil fields:……min. no. (>0)	5	median no.	60	max no.	130
Gas fields:……min. no. (>0)	_____	median no.	_____	max no.	_____

Size of Undiscovered Fields: What are the anticipated sizes (**grown**) of the above fields?:
(variations in the sizes of undiscovered fields)

Oil in oil fields (mmbo)……min. size	1	median size	3	max. size	300
Gas in gas fields (bcfg):……min. size	_____	median size	_____	max. size	_____

Assessment Unit (name, no.)
North Cuba Fold and Thrust Belt, 61170101

AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

Oil Fields:	minimum	median	maximum
Gas/oil ratio (cfg/bo)……	600	1200	1800
NGL/gas ratio (bngl/mmcfg)……	30	60	90

Gas fields:	minimum	median	maximum
Liquids/gas ratio (bngl/mmcfg)……			
Oil/gas ratio (bo/mmcfg)……			

SELECTED ANCILLARY DATA FOR UNDISCOVERED FIELDS

(variations in the properties of undiscovered fields)

Oil Fields:	minimum	median	maximum
API gravity (degrees)……	15	25	40
Sulfur content of oil (%)……	0.5	2.5	5
Drilling Depth (m) ……	500	2000	4000
Depth (m) of water (if applicable)……	0	200	500

Gas Fields:	minimum	median	maximum
Inert gas content (%)……			
CO_2 content (%)……			
Hydrogen-sulfide content (%)……			
Drilling Depth (m)……			
Depth (m) of water (if applicable)……			

Assessment Unit (name, no.)
North Cuba Fold and Thrust Belt, 61170101

ALLOCATION OF UNDISCOVERED RESOURCES IN THE ASSESSMENT UNIT TO COUNTRIES OR OTHER LAND PARCELS (uncertainty of fixed but unknown values)

1. Cuba represents 100 areal % of the total assessment unit

Oil in Oil Fields:	minimum	median	maximum
Richness factor (unitless multiplier):……			
Volume % in parcel (areal % x richness factor):…		100	
Portion of volume % that is offshore (0-100%)……		80	

Gas in Gas Fields:	minimum	median	maximum
Richness factor (unitless multiplier):……			
Volume % in parcel (areal % x richness factor):…			
Portion of volume % that is offshore (0-100%)……			

North Cuba Fold and Thrust Belt, AU 61170101
Undiscovered Field-Size Distribution