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Basin-Centered Gas Assessment Unit 60990103

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Maracaibo Basin Geologic Province 6099

Geologic Summary

Detailed map of this assessment unit

Assessment Input Data

Assessment Results

This assessment unit was not assessed quantitatively.

USGS PROVINCE: Maracaibo Basin (6099) **GEOLOGIST:** C.J. Schenk

TOTAL PETROLEUM SYSTEM: La Luna/Maracaibo (609901)

ASSESSMENT UNIT: Basin-Centered Gas (60990103)

DESCRIPTION: This hypothetical assessment unit was defined to outline the possibility for a basin-centered gas accumulation in the south-central part of the Maracaibo Basin.

SOURCE ROCKS: The main source rocks are mudstones of the Cretaceous La Luna Formation.

MATURATION: The majority of the Cretaceous La Luna Formation reached gas maturity in the Miocene and Pliocene over a wide area of the Maracaibo Basin.

MIGRATION: Migration would be local as gas from the La Luna would be reservoired in adjacent carbonates and sandstones.

RESERVOIR ROCKS: Reservoir rocks are postulated to be fractured Cretaceous carbonates, and possibly distal blanket sandstones of the Eocene that were deposited during the Eocene erosional event to the northeast.

TRAPS AND SEALS: The trap for this postulated basin-centered accumulation is the low permeability sandstones within which the gas resides.

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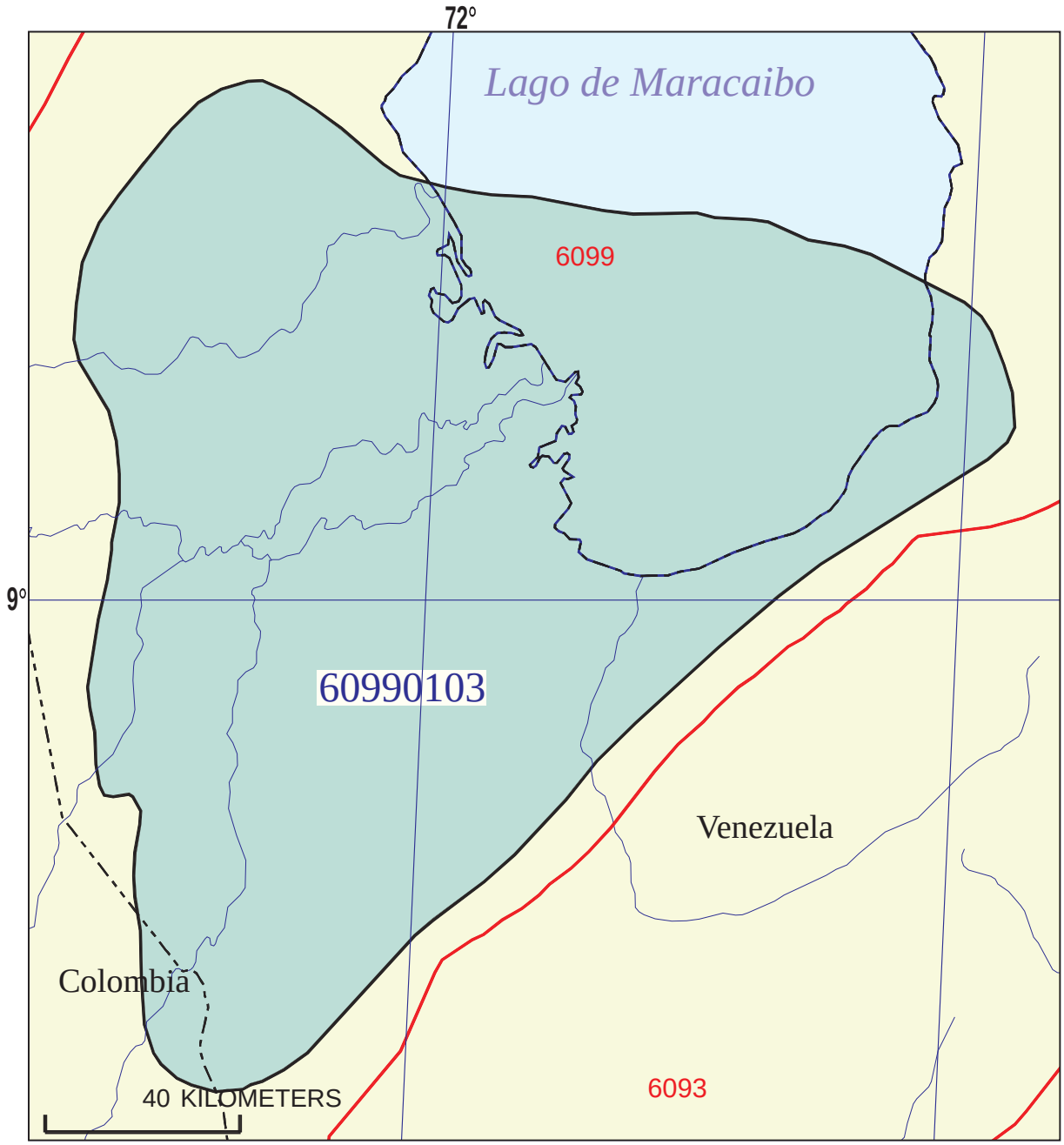
James, K.H., 1990, The Venezuelan hydrocarbon habitat, *in* Brooks, J., ed., Classic petroleum provinces: Geological Society of London Special Publication 50, p. 9-35.

Lugo, J. and Mann, P., 1995, Jurassic-Eocene tectonic evolution of the Maracaibo Basin, Venezuela, *in* Tankard, A.J., Suarez S., R., and Welsink, H.J., eds., Petroleum basins of South America: American Association of Petroleum Geologists Memoir 62, p. 699-725.

Talukdar, S., Gallango, O., and Lien, C.A., 1986, Generation and migration of hydrocarbons in the Maracaibo Basin, Venezuela–an integrated basin study: Organic Geochemistry, v. 10, p. 261-279.

Talukdar, S., and Marcano, F., 1994, Petroleum systems of the Maracaibo Basin, Venezuela, *in* Magoon, L.B., and Dow, W.G., eds., The petroleum system–from source to trap: American Association of Petroleum Geologists Memoir 60, p. 463-481.



Basin-Centered Gas Assessment Unit - 60990103

EXPLANATION

- Hydrography
- Shoreline
- 6099 Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 60990103 Assessment unit code and boundary

Projection: Robinson. Central meridian: 0

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

Date:…….. 4/27/99
Assessment Geologist:…….. C.J. Schenk
Region:…….. Central and South America Number: 6
Province:…….. Maracaibo Basin Number: 6099
Priority or Boutique…… Priority
Total Petroleum System:…… La Luna/Maracaibo Number: 609901
Assessment Unit:…… Basin-Centered Gas Number: 60990103
* Notes from Assessor

CHARACTERISTICS OF ASSESSMENT UNIT

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

What is the minimum field size?……. _____ 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: _____ Gas: _____
Established (>13 fields) _____ Frontier (1-13 fields) _____ Hypothetical (no fields) _____

Median size (grown) of discovered oil fields (mmboe):
1st 3rd _____ 2nd 3rd _____ 3rd 3rd _____
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……	
2. **ROCKS:** Adequate reservoirs, traps, and seals for an undiscovered field ≥ minimum size……	
3. **TIMING OF GEOLOGIC EVENTS:** Favorable timing for an undiscovered field ≥ minimum size	
Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3):……..	
4. **ACCESSIBILITY:** Adequate location to allow exploration for an undiscovered field ≥ minimum size……	

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) _____ median no. _____ max no. _____
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 _____ median size _____ max. size _____
Gas in gas fields (bcfg):……min. size _____ median size _____ max. size _____

Assessment Unit (name, no.)

_____

AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

Oil Fields:	minimum	median	maximum
Gas/oil ratio (cfg/bo)……			
NGL/gas ratio (bngl/mmcfg)……			

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)……			
Sulfur content of oil (%)……			
Drilling Depth (m) ……			
Depth (m) of water (if applicable)……			

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.)

_____

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

1. _____ represents _____ areal % of the total assessment unit

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

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%)……			