Go to Table of Contents

Go to index map

Mannville Continuous (Basin-Center) Gas Assessment Unit 52430502

Mannville Continuous (Basin-Center) Gas Assessment Unit 52430502
Alberta Basin Geologic Province 5243
Other geologic province boundary

Geologic Summary

Detailed map of this assessment unit

Exploration/Discovery-History Data
- Plots of Known Field Sizes
- Tables

Assessment Input Data

Assessment Results
- This assessment unit was not
- assessed quantitatively.

USGS PROVINCES: Alberta Basin and Rocky Mountain Deformed Belt (5243 and 5245)

GEOLOGIST: M.E. Henry

TOTAL PETROLEUM SYSTEM: Mannville-Upper Mannville (524305)

ASSESSMENT UNIT: Mannville Continuous (Basin-Center) Gas (52430502)

DESCRIPTION: This gas assessment unit includes much of the eastern part of the Rocky Mountain Deformed Belt and a western portion of the Alberta Basin east of the deformed belt. The eastern and northern boundaries of the unit were taken from a published account of an area described as a deep basin accumulation. The Canadian-United States International Boundary forms the southern boundary and the western boundary was drawn to include possible areas where similar geologic conditions favorable to this type of accumulation may exist.

SOURCE ROCKS: Source rocks for this unit are believed to be Jurassic through Lower Cretaceous coals and Lower Cretaceous carbonaceous shales. These gas prone source rocks may have generated comparatively little liquid petroleum.

MATURATION: Probable source rocks are mature for generation of liquid or gas petroleum throughout the unit.

MIGRATION: The location of pools assigned to this unit with regard to the thermal maturity pattern and the distribution of source rocks can be explained by local migration.

RESERVOIR ROCKS: Reservoir rocks are numerous sandstones of the Mannville Group. Reservoir sands were generally deposited by fluvial systems in the south and shoreline systems in the north.

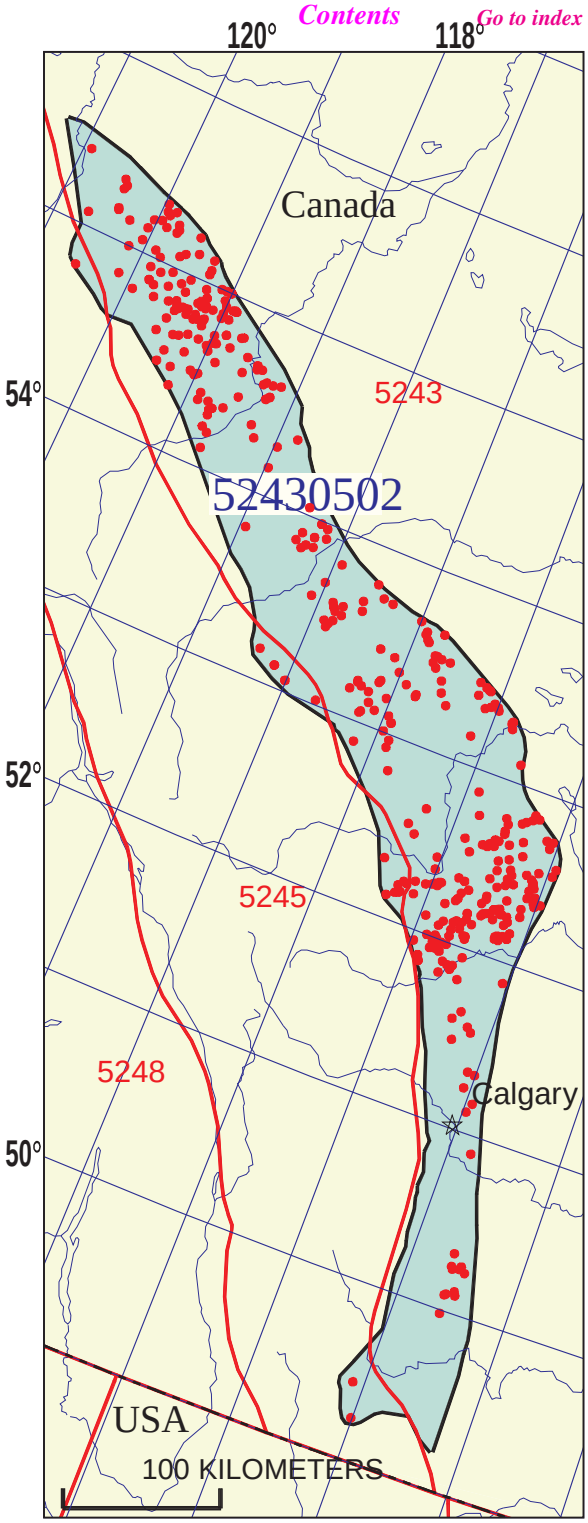
TRAPS AND SEALS: Combination traps are most common in this unit. Hydrodynamic sealing is believed to be the principal sealing mechanism for this entire unit. Interbedded shales may also be locally important.

REFERENCES:

Creaney, S. and Allen, J., 1990, Hydrocarbon generation and migration in the Western Canada sedimentary basin: *in* Brooks, J., ed., Classic petroleum provinces: Geological Society of London Special Publication No. 50, p. 189-202.

Masters, J.A., 1984, Lower Cretaceous oil and gas in Western Canada, *in* Masters, J.A., ed., Elmworth–Case study of a deep basin gas field: American Association of Petroleum Geologists Memoir 38, p. 1-34.

NRG Associates, Inc., 1994, The significant oil and gas pools of Canada: Colorado Springs, Colo., NRG Associates, Inc. Database available from NRG Associates, Inc., P.O. Box 1655, Colorado Springs, CO 80901.



Mannville Continuous (Basin-Center) Gas Assessment Unit - 52430502

EXPLANATION

- Hydrography
- Shoreline
- 5243 Geologic province code and boundary
- Country boundary
- Gas pool centerpoint
- Oil pool centerpoint
- 52430502 Assessment unit code and boundary

Projection: Lambert. Standard parallels: 49 and 77. Central meridian: -92

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

Date:…….. 8/10/99
Assessment Geologist:…….. M.E. Henry
Region:…….. North America Number: 5
Province:…….. Alberta Basin Number: 5243
Priority or Boutique…… Priority
Total Petroleum System:…… Mannville-Upper Mannville Number: 524305
Assessment Unit:…… Mannville Continuous (Basin-Center) Gas Number: 52430502
* Notes from Assessor Not conventional. Includes Elmsworth area.

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%)……			