Oil and Gas Activity
Onshore NL
ONSHORE

- Administered by Province
- Department of Natural Resources (DNR) – Energy Branch
- Office – St. John’s, NL
- Maintains Data Repository, Core Storage Facilities, etc.
- Web: www.nr.gov.nl.ca/nr

OFFSHORE

- Administered by conjoint Federal / Provincial Board
- Canada – Newfoundland & Labrador Offshore Petroleum Board (C-NLOPB)
- Office – St. John’s, NL
- Maintains Data Repository, Core Storage Facility, etc.
- Web: www.cnlopb.nl.ca/
Western NL (Onshore & Offshore Basins)
• Numerous small to medium size Independents active in Western Newfoundland.

• Prolific Onshore seeps recorded, working Petroleum System.

• Conventional and Unconventional hydrocarbon plays, including deep sub-thrust carbonate platform targets, large 4-Way Dip Closures, Shale Gas and Basin Centered Gas being targeted.
Current Land Tenure & Wells

**Land Tenure**
- 9 Licenses (offshore)
- 9 Permits (onshore)
- 1 Production Lease (onshore)

**Drilling Summary**
- 29 Exploration Wells
- 4 Stratigraphic Holes
Anticosti Basin

Age: Cambrian - Devonian

Area: ~13,100 km²

Basin Type: Foreland Basin
(developed over deformed passive margin)

Basin Infill: 3500+ m; 2000+ m

Source Rock (TOC’s)
- CHG - Green Point Fm. – up to 11%
- GTG - Mainland/Black Cove Fm. – up to 8.1%
- Table Cove Fm./Curling Group – potential

Kerogen Type
- mainly Type II (marine derived)

Thermal Maturity
- immature to overmature (oil)
- maturity increases from W to E; S to N
**Deer Lake Basin**

**Age:** Upper Paleozoic  
**Area:** ~2400 km²  
**Basin Type:** Strike-slip  
**Basin Infill:** 3,000+ m

**Source Rock (TOC’s)**
- Rocky Brook Fm. – up to 15.9% (L)
- Forty-five Brook Fm. – up to 2.5% (L)
- Cape Rouge Fm. – no data (L)
- Saltwater Cove Fm. – no data (L)

**Kerogen Type**
- Type I (lacustrine), Type III (terrestrial)

**Thermal Maturity**
- post-Anguille Group: Immature to mature (oil)
- Anguille Group: late mature to overmature (oil)
Bay St. George Basin

**Age:** Upper Paleozoic

**Area:** ~2400 km²

**Basin Type:** Strike-slip

**Basin Infill:** 9,000+ m

**Source Rock (TOC’s)**
- (BG) up to 31.9% (L)
- (CG) Woody Cape Fm. – up to 3%
- (CG) Robinson’s River Fm. – up to 4%
- (AG) Snakes Bight Fm. – up to 2% (L)

**Kerogen Type**
- Type III (terrestrial), minor Type I & II

**Thermal Maturity**
- variable; northern BSG – ‘Oil window’
- southern BSG – mostly ‘gas window’
• Three onshore permits in Parson’s Pond area
• First well in three well program encountered gas
• Two more wells to be drilled in 2010, 2nd well spudded
• Over 31,500 bbls of oil and 120 MMscf of gas produced at PAP #1 (Garden Hill) on the Port au Port Peninsula

• Drilled horizontal sidetrack to discovery well PAP #1 in 2009

• Well re-entry and stimulation operations being planned for 2010
Canadian Imperial Venture Corp (CIVC)

- Onshore to offshore well to pursue oil-in-shale play, slated for fall/2010
- Offshore exploration license awarded in 2002
- Over 103,000 ha north of Port au Port peninsula

Image credit – Canadian Imperial Venture Corp.
Deer Lake Oil and Gas Inc.

- Three exploration permits in Deer Lake Basin
- Continuous core well drilled in Q1, 2010 - well results currently under evaluation
- Admirals Rise #1 slated to commence in Q4, 2010
Vulcan Minerals Inc.

- Three onshore permits in region
- Gas encountered in both wells drilled in 2009
- Completions operations commenced in August, 2010
- Line cutting commenced for 140 km 2-D seismic program
PEEP Funded Project
AEROMAG SURVEY

“Collaboration between Geological Survey/Energy Branch (DNR) & Nalcor Energy”

- 4 OPEN FILES (No Cost).
- 46 maps - 23 NTS areas, available in pdf. format.
- 63,000 line km; ~11,400 km².
- Residual Magnetic Field.
- 1st Vertical Derivative of Residual Magnetic Field.

http://www.nr.gov.nl.ca/mines&en/geosurvey/
http://www.nr.gov.nl.ca/mines&en/geosurvey/publications/openfiles/
**PEEP Funded Project**

MUN SIST Seismic Source (Dr. Chuck Hurich)

- **Study Area** - Five mile road; located just to the south of Arches Provincial Park, Northern Peninsula.

- First production level field trial - June 2009.

- Initial test results look promising, possible further testing in 2010.

- Approx. cost $50,000.

- **MUNSIST**: MUN Swept Impact Seismic Technique (Economic, portable, environmentally friendly seismic source).
“Prospects for Conventional & Unconventional Hydrocarbon Plays for the Winterhouse Fm., Port au Port Peninsula, NL”

- Winterhouse Fm. outcrop study - focused on sedimentology, paleontology, structural geology & potential petroleum prospects.
- Grey calcareous siltstone with intercalated grey/white sandstone beds & conglomerates.
- **Results** – lower Winterhouse Fm. (~130m) more organic rich than upper section (650+ m); locally, sandstone & conglomerate beds are petroliferous; occasional pyrobitumen along joints/fractures; petroliferous beds unevenly distributed.
PEEP Funded Project
Michael Kelly & Elliott Burden

“Atlas of strata and source rock characteristics for the Rocky Brook Formation, Deer Lake Group, Newfoundland and Labrador”

- Pasadena Core Library (7 of 9) & active mineral exploration program (3).
- Core examined for lithology, sedimentary structures; sampled for Rock-eval analysis; core photography.
- Plus – archival assessment reports; core & sample data summarized.
- Results - Core Atlas produced for Rocky Brook Fm.; assessment of thermal maturity & generative capacity.
MAGNIFY YOUR OPPORTUNITIES
EXPLORE WESTERN NEWFOUNDLAND

Paleozoic Basins along the Appalachian Structural Front

5th INTERNATIONAL SYMPOSIUM
OIL & GAS RESOURCES
IN WESTERN NEWFOUNDLAND
Marble Mountain Resort, Steady Brook, NL, Canada
September 22 - 24, 2010
Summary

- Three onshore basins (with proven petroleum systems)
- Conventional & Unconventional resource plays
- Multiple play types & associated reservoir rock
- Multiple, rich source rocks (Type I, II, III) – variable maturity
- Large land parcels (onshore – up to 40,000 ha; offshore – up to 80,000 ha)
- Modern data & core libraries (onshore & offshore)
- Imminent Call for Postings for Onshore Acreage in 2010
Come visit us for more information at Booth #621
David Middleton
Director of Petroleum Geoscience
NL Department of Natural Resources