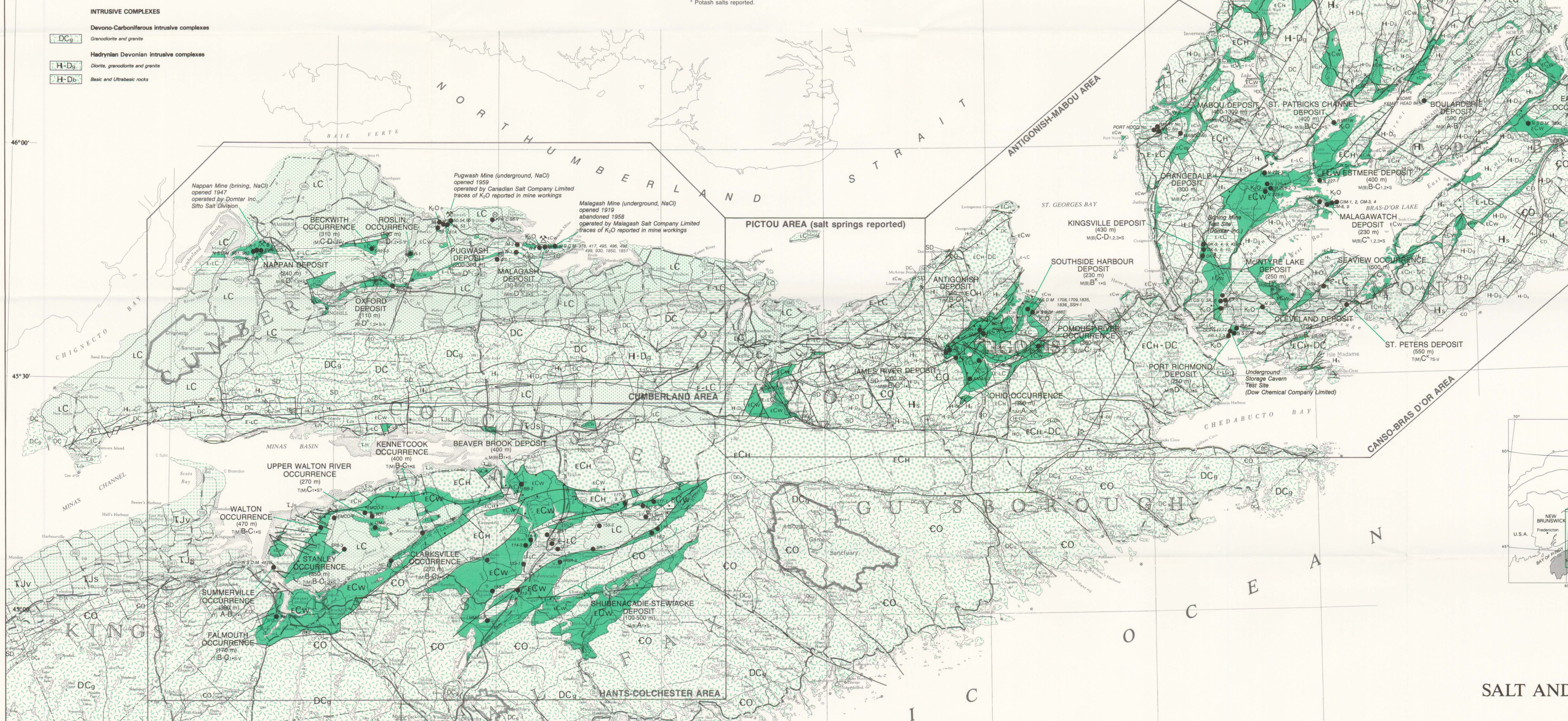
MAP 83-3

SALT AND POTASH RESOURCES OF NOVA SCOTIA



LEGEND

(Adapted from the Metallogenic Map of Nova Scotia, A.K. Chatterjee, 1983)

Cretaceous

K — *Clays, silica sand and lignite*

Triassic-Jurassic includes Fundy Group

TJv — *Mafic volcanic rocks*

TJs — *Shale, siltstone and sandstone*

Late Carboniferous includes Cumberland, Pictou, Stellarton and Morien Groups

LC — *Mixed sandstone to shale sequences*

Early to Late Carboniferous includes Canso and Riversdale Groups

E-LC — *Mixed shale to sandstone sequences*

Early Viséan includes Windsor Group

ECW — *Siltstone, mudstone, shale, sandstone, conglomerate, gypsum, anhydrite, halite, limestone and dolostone*

Early Carboniferous includes Horton Group and *Grantmire Formation* (may include Late Devonian rocks)

ECH — *Conglomerate, sandstone, siltstone and shale*

Devono-Carboniferous includes Fountain Lake Group and *Greville River, Rapid Brook, Nuttby Falls, Murphy Brook, McAdam Lake and Fisset Brook Formations*

DC — *Conglomerate, sandstone, siltstone and volcanic rocks*

Siluro Devonian includes Arisaig Group and *New Canaan, Kentville, White Rock, Portapique River, Wilson Brook, Knoydart, Earltown, Bear Brook, McGillivary Brook and Dunn Point Formations*

SD — *Siltstone, shale, sandstone and volcanic rocks and their metamorphic equivalents*

Cambro-Ordovician includes Meguma, Iron Brook, McDonalds Brook, Bourinot and Kelvin Glen Groups

€O — *Shale, siltstone, sandstone, conglomerate and volcanic rocks and their metamorphic equivalents*

Hadrynian includes George River, Fourchu and Georgeville Groups, and rocks of Mount Thom Complex

Hs — *Shale, siltstone, sandstone, conglomerate and volcanic rocks and their metamorphic equivalents*

Hc — *Limestone, dolostone, sandstone, and shale and their metamorphic equivalents*

INTRUSIVE COMPLEXES

Devono-Carboniferous intrusive complexes

DCg — *Granodiorite and granite*

Hadrynian Devonian intrusive complexes

H-Dg — *Diorite, granodiorite and granite*

H-Db — *Basic and Ultrabasic rocks*

SYMBOLS

- Uncomformity
- Normal fault
- Reverse fault
- Thrust fault
- Wrench fault
- Fault
- Geological boundary
- Deposit or occurrence name (depth to salt in metres) .... Ohio(110 m)
- Salt mine, underground (operating)
- Salt mine, underground (abandoned)
- Salt mine, brining (operating) .... B
- Drill- or borehole intersecting salt, Windsor Group or younger D-1
- Horton Group salt is also present
- Potash salts present; sylvite-KCl and/or carnallite-$KMgCl_3 \cdot 6H_2O$ .... K_2O
- Salt spring or seepage reported, locations only approximate .... *

SALT RESOURCE CLASSIFICATION CODE

M(B)A K 2,3•S-V

- RESOURCE MAGNITUDE (to maximum depth of 1000 m): Billion tonnes = B; Million tonnes = M; Thousand tonnes = T; probable; possible; uncertain = ?
- MAJOR CLASSIFICATION TYPE: A,B,C or D
- POTASH ASSOCIATED
- MODE OF OCCURRENCE: Stratified = S; Vein and secondary = V
- STRATIGRAPHY: Major Cycle 3 = 3,4,5*; Major Cycle 2 = 2*; Major Cycle 1 = 1*

* Major Cycles of Giles (1981)

Deposit: geologically defined, significant thickness, typically greater than 100 m, associated with a major Bouguer gravity anomaly (minimum); no consideration given to exploitability factors such as depth, geographic location or purity.

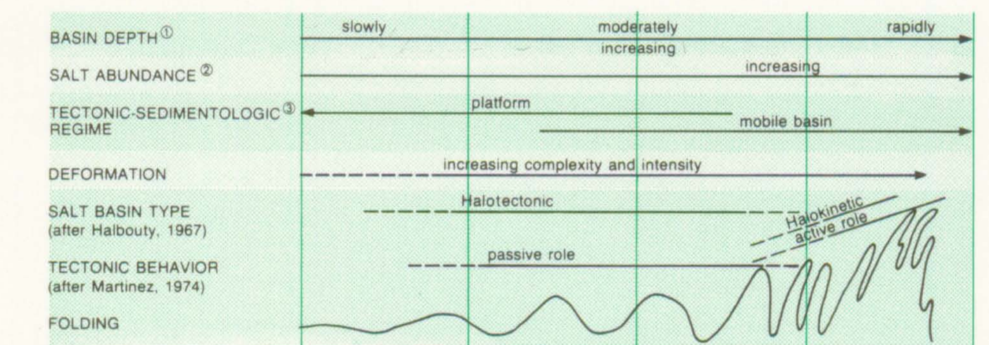
Occurrence: applied to two situations, 1) trace quantities such as veins in enclosing rocks; or 2) thin intersections of veins and impure halite layers (typically less than 10 m). If associated with a Bouguer gravity minimum, certain occurrences have good potential to be upgraded to deposit status with further drilling.

Salt deposits and occurrences of Nova Scotia.

Hants-Colchester Area	Deposit or Occurrence	Structural Type	Major Cycle(s)
Beaver Brook	Deposit	B	1
Clarksville	Occurrence	B-C	5
Falmouth	Occurrence	?	1
Kennetcook	Occurrence	B-C	1
Shubenacadie-Stewiacke	Deposit	A	1,2,5
Stanley	Occurrence	B-C	1
Summerville	Occurrence	Vein	—
Upper Walton River	Occurrence	C	1-2?
Walton	Occurrence	B-C	1-2?
Cumberland Area			
Beckwith	Occurrence	C-D	?
Malagash*	Deposit	D	?
Nappan*	Deposit	D	?
Oxford*	Deposit	D	?
Pugwash*	Deposit	D	?
Roslin	Occurrence	D	?
Antigonish-Mabou Area			
Antigonish	Deposit	B-C	1
James River*	Deposit	B-C	1
Mabou	Deposit	C-D	1-4?
Ohio	Occurrence	A	1
Pomquet River	Occurrence	C	1?
Southside Harbour*	Deposit	B	1
Canso-Bras d'Or Area			
Cleveland*	Deposit	B-C	2-5?
Estmere	Deposit	B-C	2-5?
Kingsville	Deposit	C-D	1-5?
McIntyre Lake*	Deposit	C	1-5?
Malagawatch*	Deposit	C?	1-4
Orangedale*	Deposit	C?	1-4
Port Richmond*	Deposit	C-D?	1-4
Seaview	Occurrence	C	1?
St. Patricks Channel	Deposit	C	1-4
St. Peters*	Deposit	C	1?
Sydney Area			
Boularderie*	Deposit	A-B	1-2
East Bay	Occurrence	A	1?

* Potash salts reported.

Summary of salt deposit structural classification scheme applied to Windsor Group evaporites in Nova Scotia

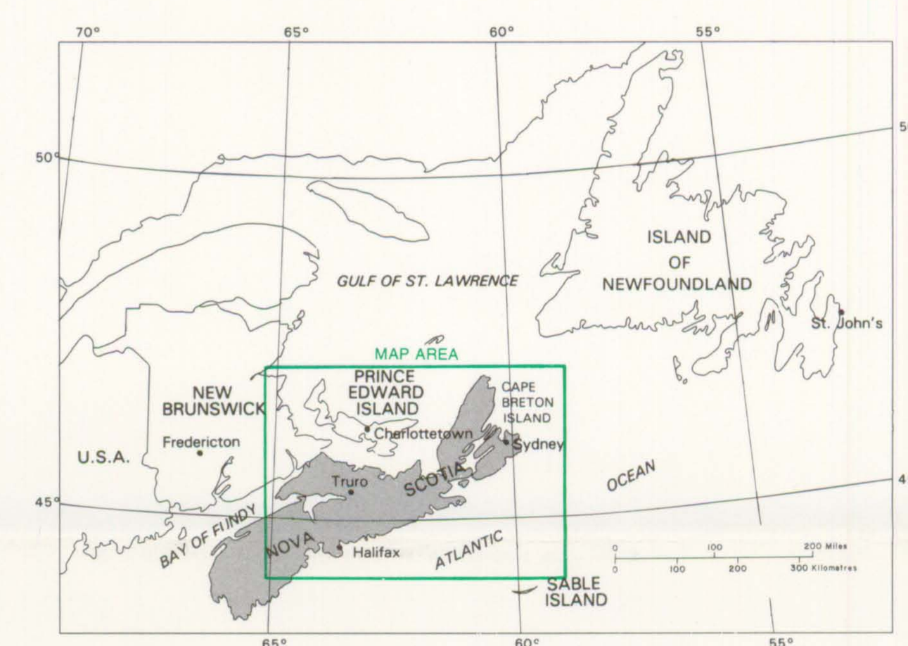


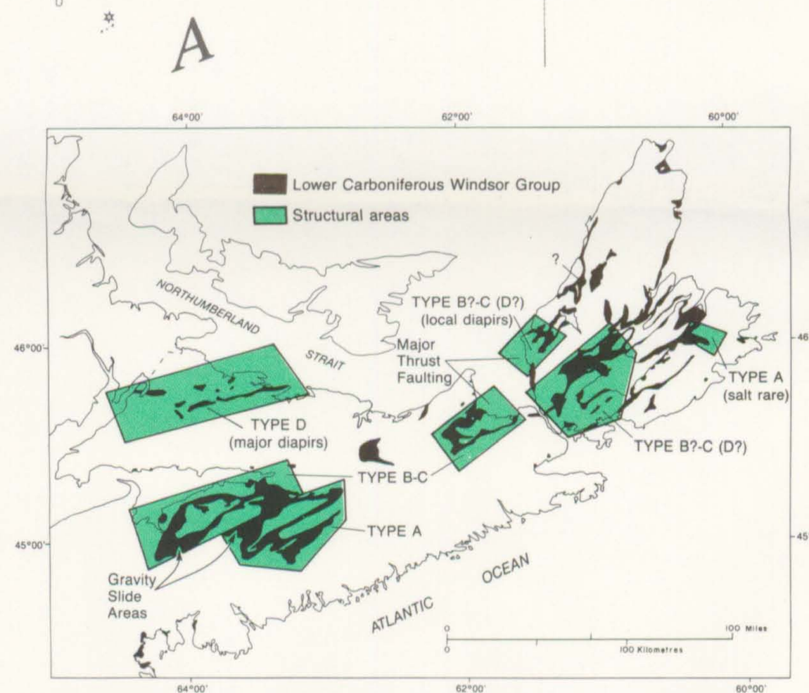
CLASSIFICATION TYPE ③	TYPE A	TYPE B	TYPE C	TYPE D
DEFORMATION INTENSITY ②	Slight Gentle, open low dips	Moderate Open moderate dips	Severe Subisoclinal Isoclinal, dips low to steep and overturned	Extreme Intrusive-diapiric character apparent
EXAMPLE AREA EXAMPLE DEPOSIT	Hants-Colchester Shubenacadie-Stewiacke	Hants-Colchester Beaver Brook	Canso-Bras d'Or McIntyre Lake?	Cumberland Pugwash

① reflects potential geostatic loading influence.

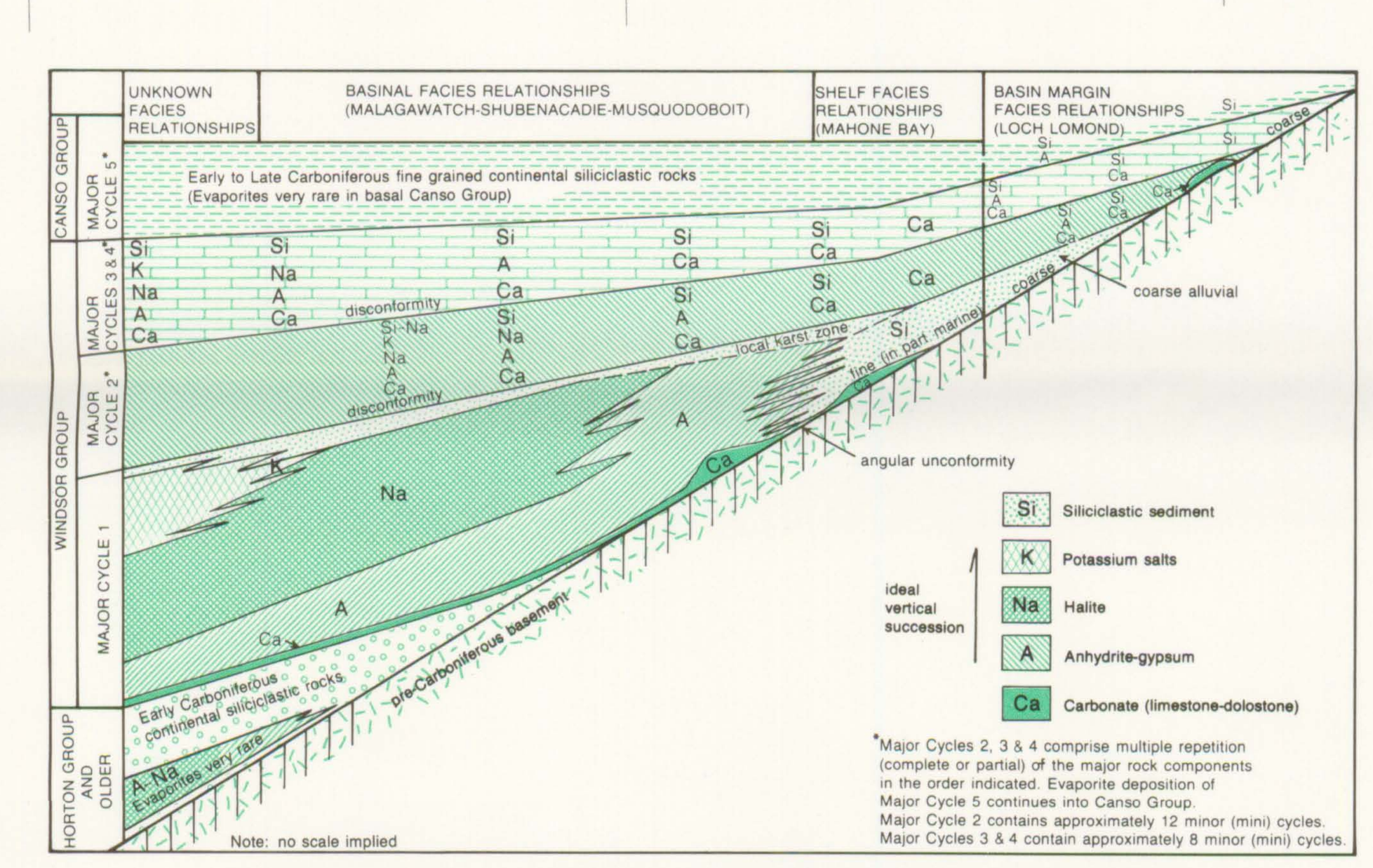
② evaporite tectonics are complicated by heterogeneous lithology, facies variation and uneven distribution of salt in the Windsor Group

③ any type may occur in simple or complex graben or half graben basins.





Distribution of salt deposit structural types in Nova Scotia



Schematic diagram of typical Windsor Group facies relationships recognized within Nova Scotia

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MAP 83-3

COMPILED BY R. C. BOEHNER

1984

NOVA SCOTIA DEPARTMENT OF MINES AND ENERGY

HONOURABLE JOEL R. MATHESON, Q.C. — MINISTER

JOHN J. LAFFIN, P. ENG. — DEPUTY MINISTER

SCALE 1:500,000 or 7.89 miles to 1 inch

Planimetric base is from Canadian Department of Energy, Mines and Resources, Surveys and Mapping Branch
Map MCR 37, Scale 1:500,000
Geological base is modified from the Geological Map of Nova Scotia (Keppie, 1979)
Transverse Mercator Projection
Jointly funded by the Nova Scotia Department of Mines and Energy and the Canada Department of Regional Economic Expansion
Cartography by Nova Scotia Department of Mines and Energy and by Maritime Resource Management Services