

LEGEND

This legend is common to maps 1412A, 1413A, 1414A, and 1415A (uncoloured blocks do not appear on this map)

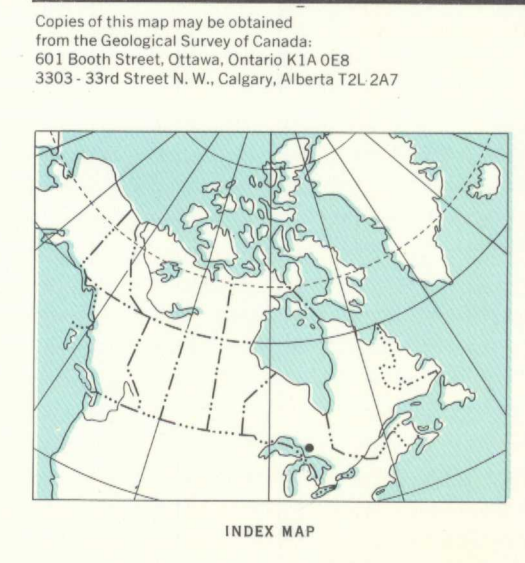
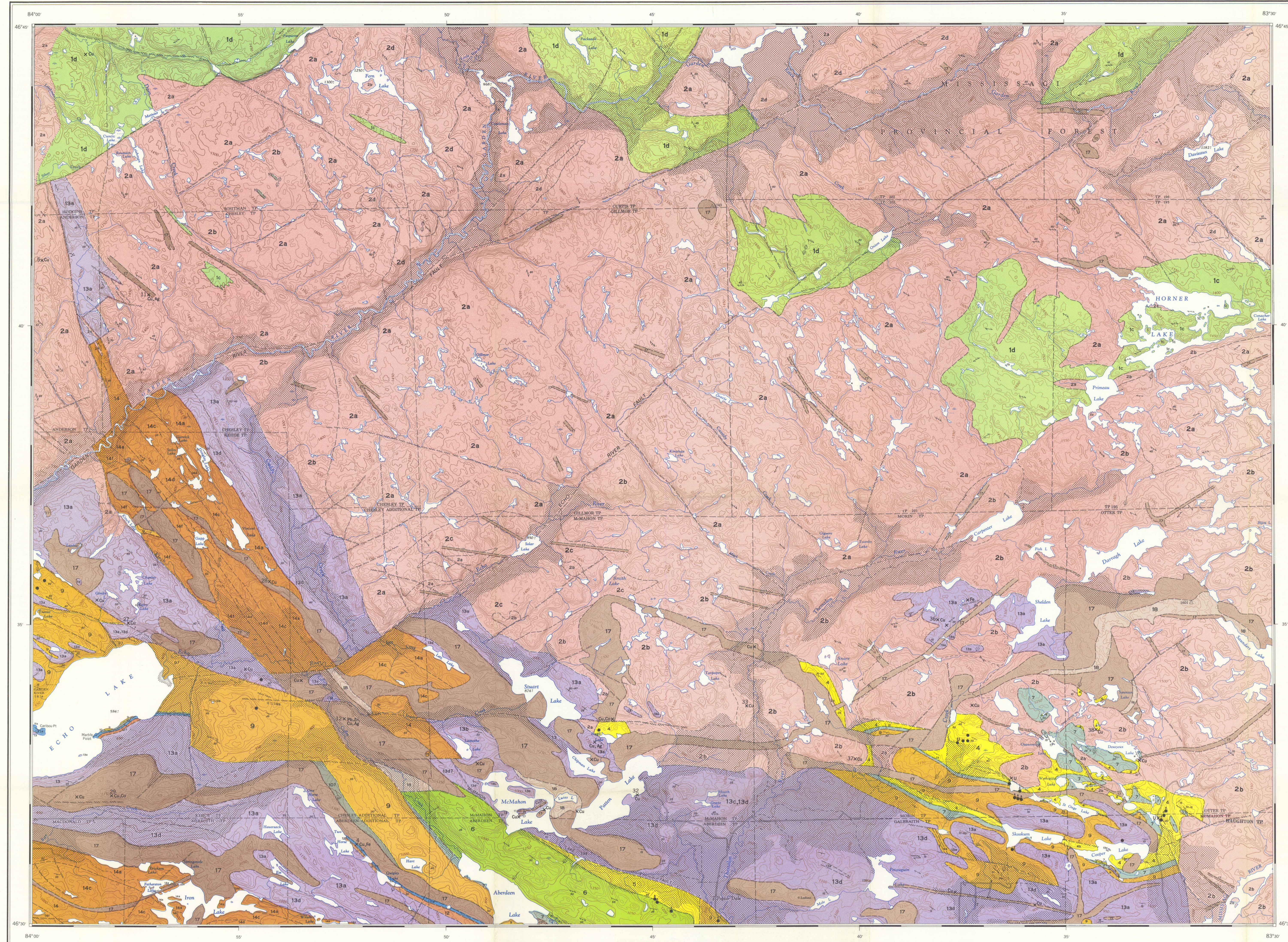
- PALEOZOIC
ORDOVICIAN
21 Trenton and Black River Groups
Undifferentiated
HADRYNIAN (?)
20 JACOBVILLE FORMATION: sandstone, shale, conglomerate
NEOHELKIAN
19 MAMAINSE POINT FORMATION: basalt, rhyolite
APHEBIAN
17, 18 NIPISSING DIABASE: quartz diabase, gabbro, subordinate granophyre;
17a, mainly micropaguro;
17b, mainly granophyre diabase and gabbro
HURONIAN SUPERGROUP
16 BAR RIVER FORMATION: white quartzite, minor argillite
15 GORDON LAKE FORMATION: varicoloured siltstone, chert
14 LORRAIN FORMATION: quartzite, pebbly quartzite, arkose, jasper conglomerate, argillaceous quartzite, argillite
13 GOWGANDA FORMATION: paraconglomerate, orthoconglomerate, argillite, greywacke, arkose, siltstone, quartzite, 13a, mainly paraconglomerate;
13b, mainly quartzite; 13c, mainly pink arkose, quartzite, and siltstone; 13d, mainly argillite; greywacke and quartzite; 13dm, upper argillite member
12 SERPENT FORMATION: feldspathic quartzite, polymictic conglomerate; 12a, polymictic conglomerate
11 ESPANOLA FORMATION: 11a, Bruce limestone member; 11b, Espanola siltstone member; 11c, dolomite member
10 BRUCE FORMATION: paraconglomerate, minor quartzite, grit, and orthoconglomerate
9 HOUGH LAKE GROUP (7-9)
MISSISSAGI FORMATION: fine to coarse-grained feldspathic quartzite, pebble conglomerate, and paraconglomerate, minor orthoconglomerate; 9a, paraconglomerate; 9A, AWERES FORMATION: feldspathic quartzite, greywacke, quartz-pebble conglomerate, paraconglomerate, minor argillite, arkose (formerly correlated with the Serpent Formation)
8 PECORS FORMATION: argillite, siltstone
7 RAMSAY LAKE FORMATION: paraconglomerate, minor quartzite, argillite
6 ELLIOT LAKE GROUP (4-6)
THESSALON FORMATION: basalt, andesite, rhyolite, minor pyroclastic rocks and intercalated sediments; 6a, basalt, minor quartzite and quartz-pebble conglomerate; 6b, rhyolite; 6c, quartzite; 6d, amygdaloidal basalt
4, 5 MATINDA FORMATION: feldspathic quartzite, arkose, grit, quartz-pebble conglomerate, polymictic conglomerate, minor basalt; 4a, polymictic conglomerate; 4b, basalt
3 LIVINGSTONE CREEK FORMATION: feldspathic quartzite, siltstone, polymictic conglomerate, quartz-pebble conglomerate
2 JARVIS BATHOLITH: quartz monzonite, granite, syenite, quartz diorite
1 2a, mainly pink to grey granite to diorite gneiss, including numerous remnants of 1b and 1c, and areas of 2b; 2b, mainly massive pink granite, quartz monzonite, syenite, gneiss, and quartz diorite, possibly in part younger than 2a, 2c; 2c, mainly porphyritic pink granite; 2d, mixed migmatite, amphibolite, and granitic rocks; 2e, mainly migmatite
1a, achistose basal to acidic flows and pyroclastic rocks; subordinate sediments including iron-formation, minor diorite and gabbro; 1b, biotite and hornblende-plagioclase-quartz gneisses, commonly with granitic intercalations; 1c, amphibolite; 1d, mixed zones of amphibolite, biotite gneiss and granite, "granitized" amphibolite, migmatite

- Drift-covered area
Rock outcrop
Geological boundary (approximate, assumed)
Bedding (inclined)
Schistosity, gneissosity (inclined, vertical dip unknown)
Anticline (direction of plunge)
Syncline (direction of plunge)
Fault, shear zone (approximate, assumed, downthrow side)
Thrust or reverse fault (direction of dip)
Glacial striae (direction of ice movement known, unknown)
Raised beach
Breccia zone
Drillhole (vertical, inclined)
Mineral occurrence
Inactive mine workings

ELEMENT AND MINERAL SYMBOLS
Cobalt Co
Copper Cu
Iron Fe
Lead Pb
Pyrite py
Silica si
Silver ag
Uranium U
Zinc Zn

Geology by M.J. Frerey, 1956-58, 1963, 1967, 1970
To accompany Memoir 363 by M.J. Frerey
Geological cartography by H. Kovachic, Geological Survey of Canada
Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada
Base map at the same scale published by the Army Survey Establishment, R.C.E., in 1964

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa
Approximate magnetic declination 1974, 5°30' West decreasing 0.0' annually
Elevations in feet above mean sea-level



MAP 1413A
GEOLOGY
ECHO LAKE AREA
DISTRICT OF ALGOMA
ONTARIO
Scale 1:50,000
Kilometres 1 0 1 2 3 4 Kilometres
Miles 1 0 1 2 Miles
Universal Transverse Mercator Projection
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NATIONAL TOPOGRAPHIC SYSTEM REFERENCE
MAP 1413A
ECHO LAKE AREA
ONTARIO
Key to numbered copper prospects and past producers* by township (For descriptions see the Ontario Department of Mines, Mineral Resources Circular No.12, 1969)

- Aberdeen
1. Fraser
2. Indian Lake
3. Rock Lake
Aberdeen Additional
4. Two Horse Lake
Anderson
5. Taylor
Aweres
6. Hillman
7. Nyed
Bridgland
8. Barone
9. Pappier
10. Roaring River
Chesley
11. Ramon
Chesley Additional
12. Sabourin
13. Gouling*
Day
14. Dempsey
15. Sweeney
16. Two Lake
Deroche
17. Edgar
18. Wilnot
Gladstone
19. Glogoma*
20. Principle Strategic Minerals
Gould
21. Grand Portage*
22. Rockwin
Gussett
23. Kynoch
24. Little Picker Lake
Jarvis
25. Injpe
26. Rankow*
Keboe
27. Austin
28. Dolan
29. Gimby
Kirkwood
30. Anthony
31. Jeyco
McMahon
32. Patten Lake East
33. Romer
Montgomery
34. Cobden River
35. North Montgomery
Morin
36. Copper Queen
37. Rising Sun
Ottar
38. Fano
39. Parkinson
40. Little White River
Patton
41. Bilton*
42. Brady
43. Copper Float
44. Jury
45. Kennedy
46. Martin
Plummer Additional
47. Bird Dome
48. Bruce*
49. Copper Bay Section
50. Wellington Section
51. Taylor Section
52. Campbell-Dues
53. Centre Line
54. North Prospect
55. Stenberg
56. Algonquin
57. Canada Verde
58. Scarfe
59. Chisholm Lake
60. Plump Lake
Tarbutt Additional
57. Adit Prospect
Tarbutt, Tarbutt Additional, and Johnson
58. Desbarter
Thompson
59. Bar Fin*
60. Knoblauch
Wells
61. Whanncliffe
62. Cannon
63. Cromeridge
64. Abbeian
65. Riggford
66. Sheba

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