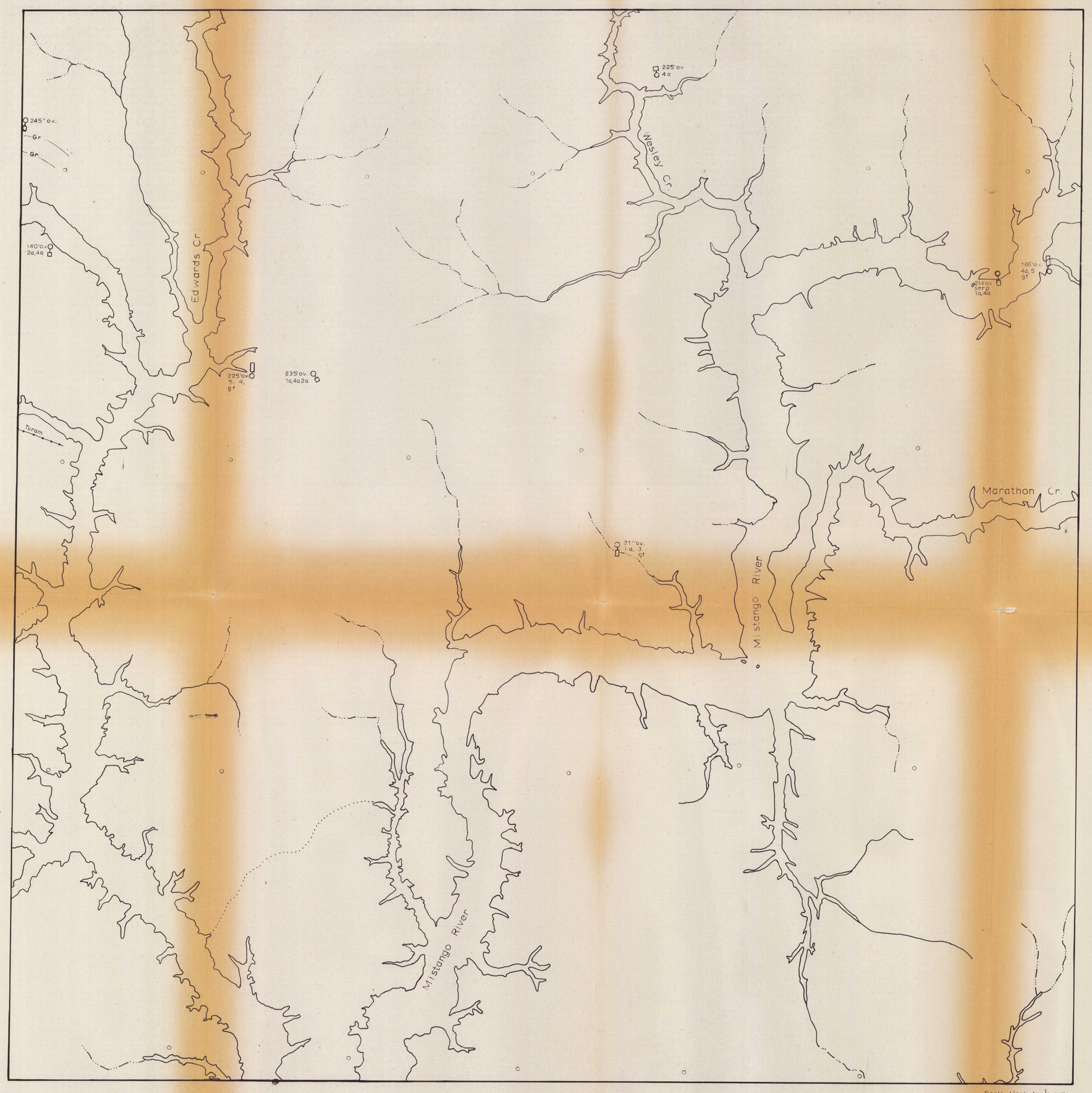
# WESLEY TOWNSHIP

DISTRICT OF COCHRANE, ONTARIO




Scale: 1 inch to 1/4 mile.

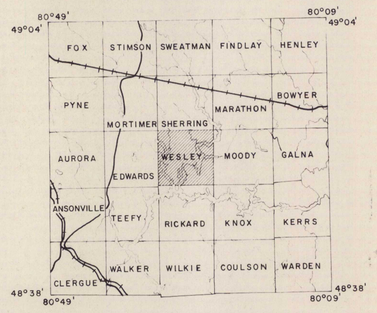



TABLE OF LITHOLOGICAL UNITS
KIRKLAND LAKE DATA SERIES

CENOZOIC
PLEISTOCENE AND RECENT
18a ORGANIC DEPOSITS
Open and semi-open bogs
18b COCHRANE DEPOSITS
Clay till
18c BARLOW – OJIBWAY DEPOSITS
Varved sediments
Sand and gravel deposits
18d GLACIO – FLUVIAL DEPOSITS
Esker complexes; associated outwash sand and gravel deposits
18e GROUND MORAINE DEPOSITS
Sandy grey boulder till, with minor contained stratified drift, resting on bedrock.

UNCONFORMITY

MESOZOIC
17 Kimberlite

INTRUSIVE CONTACT

PALEOZOIC
LOWER AND MIDDLE SILURIAN
16a Clinton (Thorntoe) Formation: limestone, dolomite, sandstone
16b Wabi Formation: limestone, shale

MIDDLE AND UPPER ORDOVICIAN
15a Dawson Point Formation: shale
15b Farr Formation: limestone
15c Rucke Formation: limestone, shale
15d Guigues Formation: sandstone

UNCONFORMITY

PRECAMBRIAN
LATE PRECAMBRIAN (PROTEROZOIC)
MAFIC INTRUSIVE ROCKS[e]
14 Diabase dikes

INTRUSIVE CONTACT

MIDDLE PRECAMBRIAN (PROTEROZOIC)
ALKALIC INTRUSIVE ROCKS[f]
13 Syenite, nepheline syenite, lamprophyre

MAFIC INTRUSIVE ROCKS[f]
12 Diabase, transition rock, and granophyre sheets and dikes

INTRUSIVE CONTACT

COBALT GROUP
11 Lorrain Formation: quartzite, arkose
10 Gowganda Formation:
10 Undifferentiated
10a Firstbrook Member: argillite, siltstone, greywacke, arkose
10b Coleman Member: conglomerate, greywacke, quartzite, arkose, argillite

UNCONFORMITY

EARLY PRECAMBRIAN (ARCHEAN)
MAFIC INTRUSIVE ROCKS[e]
9 Diabase dikes

INTRUSIVE CONTACT

ALKALIC INTRUSIVE ROCKS[d]
8 Syenite, monzonite, lamprophyre[h]

INTRUSIVE CONTACT

ALKALIC METAVOLCANICS[b]
7 Trachyte, leucitic trachyte; flows, tuff, breccia

METASEDIMENTS[j]
6 Conglomerate, greywacke, siltstone, slate, argillite, iron formation[b]
5 Greywacke, siltstone, slate, iron formation[c]

FELSIC INTRUSIVE ROCKS[dj]
4 Granitic intrusive rocks
4a Quartz porphyry, quartz-feldspar porphyry, feldspar porphyry, granophyre, felsite[h]
4b Trondhjemite, granodiorite, quartz monzonite: simple batholiths and stocks[h]
4c Trondhjemite, granodiorite, quartz monzonite, quartz diorite, aplite, pegmatite, migmatite: complex batholiths

INTRUSIVE CONTACT

FELSIC METAVOLCANICS AND VOLCANICS[bj]
3 Undifferentiated, rhyolite
3a Iron formation and ferruginous chert
3b Flows
3c Pyroclastic rocks

INTRUSIVE CONTACT

METAMORPHOSED MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS[cj]
2 Undifferentiated
2a Gabbro, diorite
2b Peridotite, dunite, pyroxenite, serpentinite

INTRUSIVE CONTACT

INTERMEDIATE AND MAFIC METAVOLCANICS[bj]
1 Undifferentiated dacite, andesite, and basalt
1a Intermediate flows
1b Intermediate pyroclastic rocks
1c Mafic flows
1d Mafic pyroclastic rocks

e Formerly classified as Keewatin
b Formerly classified as Timiskaming
c Formerly classified as Huronian
d Formerly classified as Algoman
e Includes north-trending dikes of Matachewan swarm
f Includes Nipissing and Sudbury-type
g Includes Keweenawan
h Several ages; some units appear to be intrusive equivalents of volcanic formations whereas others postdate volcanism
j Rocks in these groups are subdivided lithologically; the order does not necessarily imply age relationship within or among groups

GEOLOGICAL AND MINING SYMBOLS FOR KIRKLAND LAKE DATA SERIES

Glacial striae.
Esker, medial ridge.
Small bedrock outcrop.
Bedding, top unknown; (inclined, vertical).
Bedding, top (arrow) from grain gradation; (inclined, vertical, overturned).
Bedding, top (arrow) from cross bedding; (inclined, vertical, overturned).
Lava flow; top (arrow) from pillows shape and packing.
Schistosity; (horizontal, inclined, vertical).
Gneissosity, (horizontal, inclined, vertical).
Layering, (horizontal, inclined, vertical).
Lineation with plunge.
Geological boundary, observed.
Geological boundary, position interpreted.
Geological boundary, deduced from geophysics.
Fault; (observed, assumed). Spot indicates down throw side, arrows indicate horizontal movement.
Lineament.
Jointing; (horizontal, inclined, vertical).
Drag folds with plunge.
Anticline, syncline, with plunge.

Drill hole; (projected vertically). Overburden shown.
Drill hole in overburden only; (vertical or collar, inclined). Overburden shown.
Shaft; depth in feet.
Mineral occurrence at surface.
Airborne electromagnetic anomaly (Canadian Aero System).
Airborne electromagnetic anomaly (Quester 6 Channel Input System).
2 channel response.
3 channel response.
4 channel response.
5 channel response.
6 channel response and coincident magnetic anomaly.
Airborne magnetometer anomaly.
Ground magnetometer anomaly.
Ground electromagnetic conductor (VEM-Vert-loop; HEM-Horizontal loop; VLF-Very low freq.; Turam; JEM-Crone EM-16).
Induced Polarization anomaly
Spontaneous Polarization anomaly
Gravity anomaly
Radiometric anomaly
Resistivity anomaly

METAL AND MINERAL REFERENCE

For Kirkland Lake Data Series

| | | | |
|---|---|---|---|
| Ag | Silver | mo | Molybdenite |
| asb | Asbestos | Ni | Nickel |
| Au | Gold | Pb | Lead |
| Cd | Cadmium | Pd | Palladium |
| Co | Cobalt | pent | Pentlandite |
| cp | Chalcopyrite | po | Pyrrhotite |
| Cr | Chromium | Pt | Platinum |
| Cu | Copper | py | Pyrite |
| ep | Epidote | qcv | Quartz-carbonate vein |
| Fe | Iron | qv | Quartz vein |
| fl | Fluorite | serp | Serpentine |
| gf | Graphite | sp | Sphalerite |
| gn | Galena | spec | Specularite |
| mag | Magnetite | talc | Talc |
| mar | Marcasite | Sn | Tin |
| ml | Millerite | Zn | Zinc |

Sources of Information

Compiled by the Geological Survey of Canada in co-operation with the Ontario Department of Mines and Northern Affairs from data on file with the Resident Geologist (Ontario Department of Mines and Northern Affairs), Kirkland Lake.

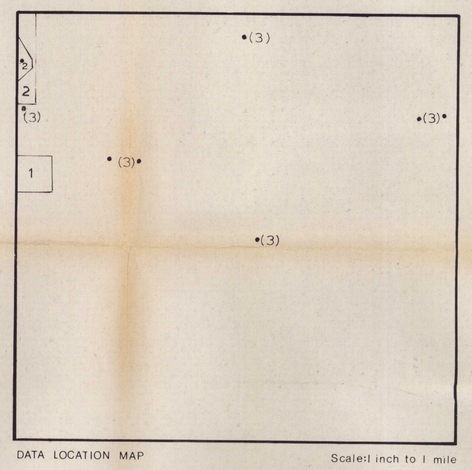
NTS Reference 42 A/15, 42 A/16
GDM-GSC Aeromagnetic Maps 2337G, 2355G
GDM Geological Compilation Series Map 2046
GSC Surficial Geology Map 1959

DATA FILED WITH THE ONTARIO DEPARTMENT OF MINES AND NORTHERN AFFAIRS RESIDENT GEOLOGIST AT KIRKLAND LAKE

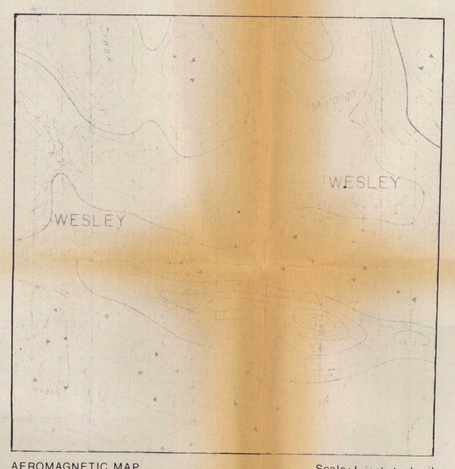
Through February 1972

| | | GEOLOGICAL | DIAMOND DRILLING | AIRBORNE MAGNETOMETER | AIRBORNE ELECTROMAGNETOMETER | GROUND MAGNETOMETER | VERTICAL LOOP ELECTROMAGNETOMETER | HORIZONTAL LOOP ELECTROMAGNETOMETER | TURAM ELECTROMAGNETOMETER | JEM | INDUCED POLARIZATION | VLF | RESISTIVITY | GRAVITY | GEOCHEMICAL | OTHERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Glen Lake Silver Mines Ltd. | | | | | 64 | | | 64 | | | | | | | |
| 2. | Glen Lake Silver Mines Ltd. | | 64 | | | | | | | | | | | 64 | | |
| 3. | International Nickel Company of Canada, Ltd., The | | 64 | | | | | | | | | | | | | |

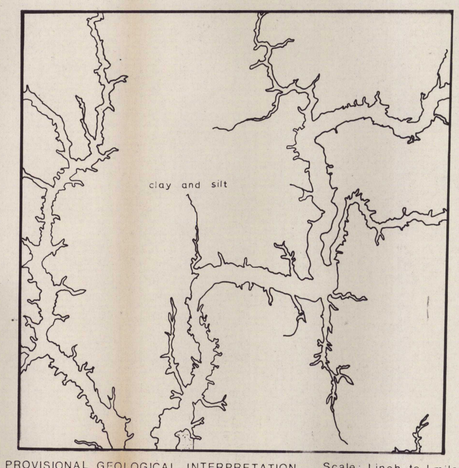
Note: The numbers on the above list stand for the year when the work was done, e.g., 66 for 1966. On the accompanying DATA LOCATION MAP, only areas for which work was submitted to the Department are outlined, and thus a company may hold more ground than indicated here. The numbers on the DATA LOCATION MAP and any circled numbers refer to the company list above.



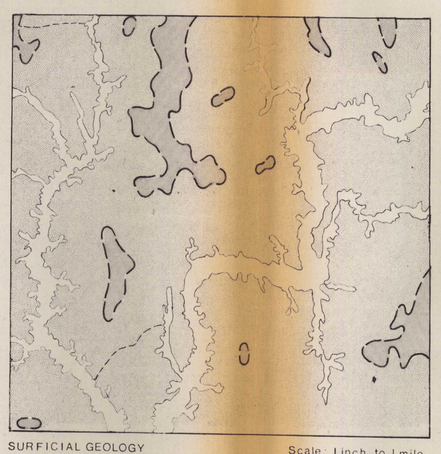

DATA LOCATION MAP — Scale: 1 inch to 1 mile




AEROMAGNETIC MAP — Scale: 1 inch to 1 mile




PROVISIONAL GEOLOGICAL INTERPRETATION — Scale: 1 inch to 1 mile



SURFICIAL GEOLOGY — Scale: 1 inch to 1 mile

OPEN FILE
84
MAR 1972
GEOLOGICAL SURVEY
OTTAWA

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