

SHERRING TOWNSHIP

DISTRICT OF COCHRANE, ONTARIO

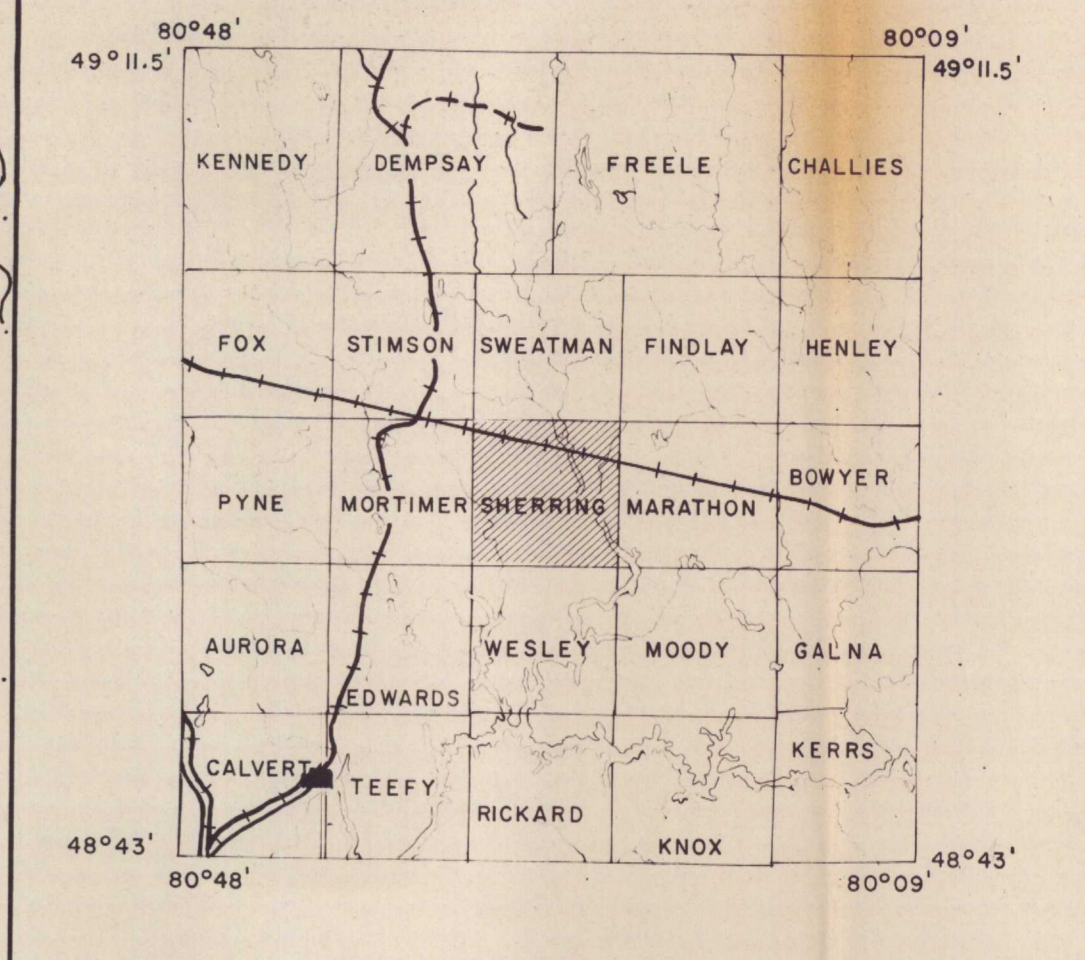
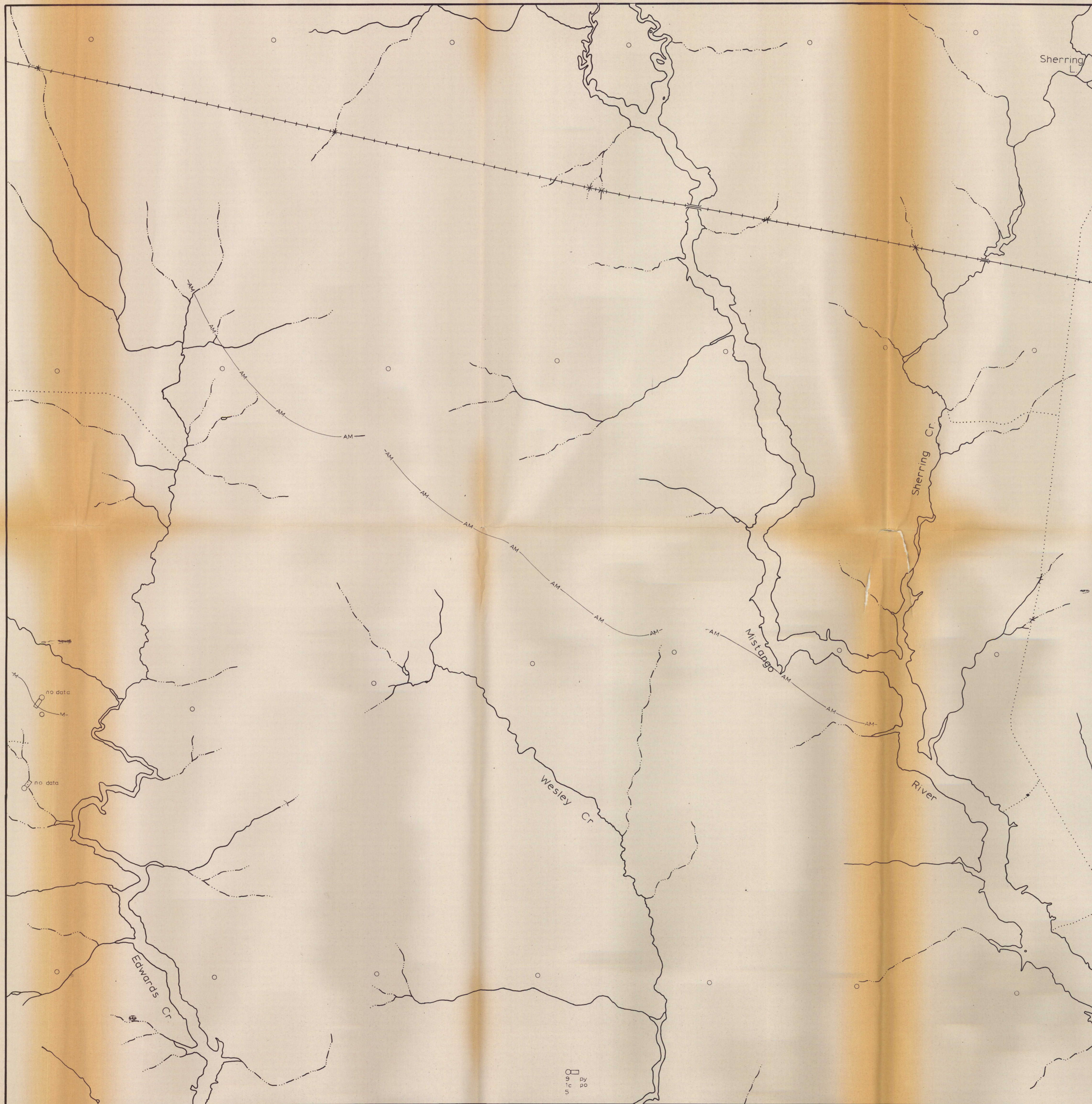


TABLE OF LITHOLOGICAL UNITS
KIRKLAND LAKE DATA SERIES

CENOZOIC	
PLEISTOCENE AND RECENT	
18a ORGANIC DEPOSITS	
18a Open and semi-open bogs	
18b COCHRANE DEPOSITS	
18b Clay Hill	
18c BARLOW-GUIBWAY DEPOSITS	
18c Varved sediments	
18c Sand and gravel deposits	
18d GLACIAL-FLUVIAL DEPOSITS	
18d Esker complex, associated outwash sand and gravel deposits	
18e GROUND MORaine DEPOSITS	
18e Sandy gravel boulder fill, with minor contained stratified drift, resting on bedrock	
UNCONFORMITY	
MESOZOIC	
17 Kimberlite	
INTRUSIVE CONTACT	
PALEOZOIC	
LATE AND MIDDLE SILURIAN	
16a Clinton (Thebes) Formation: limestone, dolomite, sandstone	
16b Wall Formation: limestone, shale	
WIDE AND UPPER DEVONIAN	
15a Dawson Point Formation: shale	
15b Farr Formation: limestone	
15c Bucke Formation: limestone, shale	
15d Guelph Formation: sandstone	
UNCONFORMITY	
PRECAMBRIAN	
LATE PRECAMBRIAN (PROTEROZOIC)	
14 Diabase dikes	
INTRUSIVE CONTACT	
MIDDLE PRECAMBRIAN (PROTEROZOIC)	
ALKALIC INTRUSIVE ROCKS^a	
13 Syenite, nepheline syenite, lamprophyre	
MAFIC INTRUSIVE ROCKS^b	
12 Diabase, transition rock, and granophyre sheets and dikes	
INTRUSIVE CONTACT	
COBALT GROUP	
11 Lorrain Formation: quartzite, arkose	
10 Onondaga Formation	
10a Undifferentiated	
10b Firestone Group: gneissite, siltstone, gneiss, arkose	
10c Onondaga Group: conglomerate, greywacke, quartzite, arkose, arillite	
UNCONFORMITY	
EARLY PRECAMBRIAN (ARCHAIC)	
MAFIC INTRUSIVE ROCKS^c	
9 Diabase dikes	
INTRUSIVE CONTACT	
ALKALIC INTRUSIVE ROCKS^d	
8 Syenite, nephelite, lamprophyre	
INTRUSIVE CONTACT	
ALKALIC METAVOLCANICS^e	
7 Trachyte, leucitic trachyte, flows, tuff, breccia	
METASEDIMENTS	
6 Conglomerate, greywacke, siltstone, slate, argillite, iron formation	
5 Greywacke, siltstone, slate, iron formation	
FELSIC INTRUSIVE ROCKS^f	
4 Granitic intrusive rocks	
4a Quartz porphyry, quartz-feldspar porphyry, felsic porphyry, monzonite, rhyolite	
4b Trondhjemite, granodiorite, quartz monzonite, granite	
4c Trondhjemite, quartzite, quartz monzonite, quartz diorite, quartz syenite, migmatite, complex high-grade	
INTRUSIVE CONTACT	
FELSIC METAVOLCANICS AND VOLCANICS^g	
3 Undifferentiated, rhyolite	
3a Iron formation and terrigenous chert	
3b Flow	
3c Pyroclastic rocks	
INTRUSIVE CONTACT	
METAMORPHIC MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS^h	
2 Undifferentiated	
2a Gabbro, diorite	
2b Peridotite, diorite, pyroxenite, serpentinite	
INTRUSIVE CONTACT	
INTERMEDIATE AND MAFIC METAVOLCANICSⁱ	
1 Undifferentiated quartz, amosite, and basalt	
1a Intermediate flows	
1b Intermediate pyroclastic rocks	
1c Mafic flows	
1d Mafic pyroclastic rocks	

^a Formerly classified as Neenawa
^b Formerly classified as Timiskaming
^c Formerly classified as Neoproterozoic
^d Formerly classified as Algonquin
^e Includes north-trending dikes of the Algonquin group
^f Includes Neoproterozoic and Archaic
^g Includes Neoproterozoic
^h Several areas were until recently considered to be volcanic formations whereas others are volcanic
ⁱ Rocks in these groups are subdivided lithologically; the order does not necessarily imply age relationships within or among groups

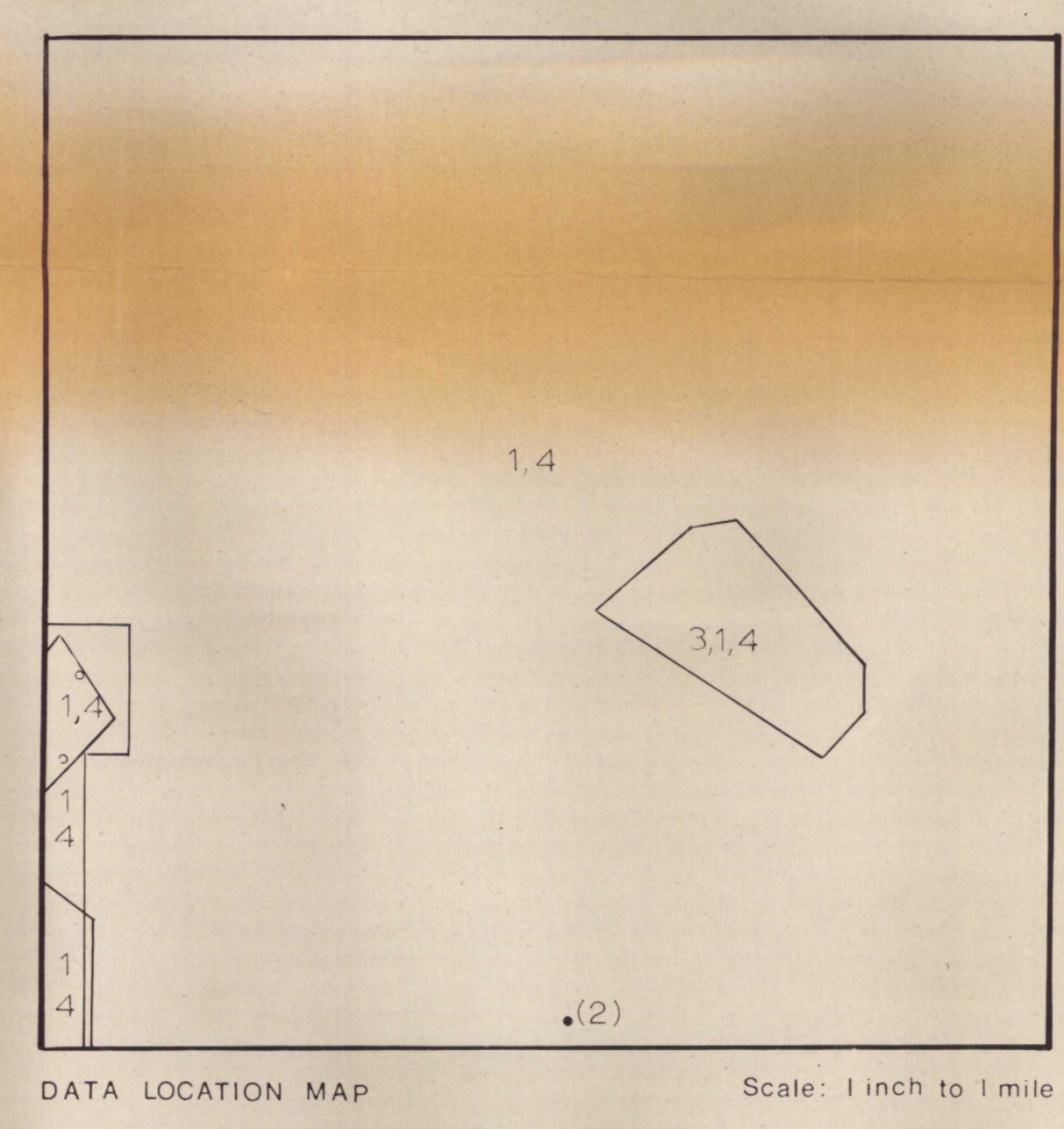
Scale: 1 inch to 1/4 mile

DATA FILED WITH THE
ONTARIO DEPARTMENT OF MINES
AND NORTHERN AFFAIRS
RESIDENT GEOLOGIST
AT KIRKLAND LAKE
Through February 1972

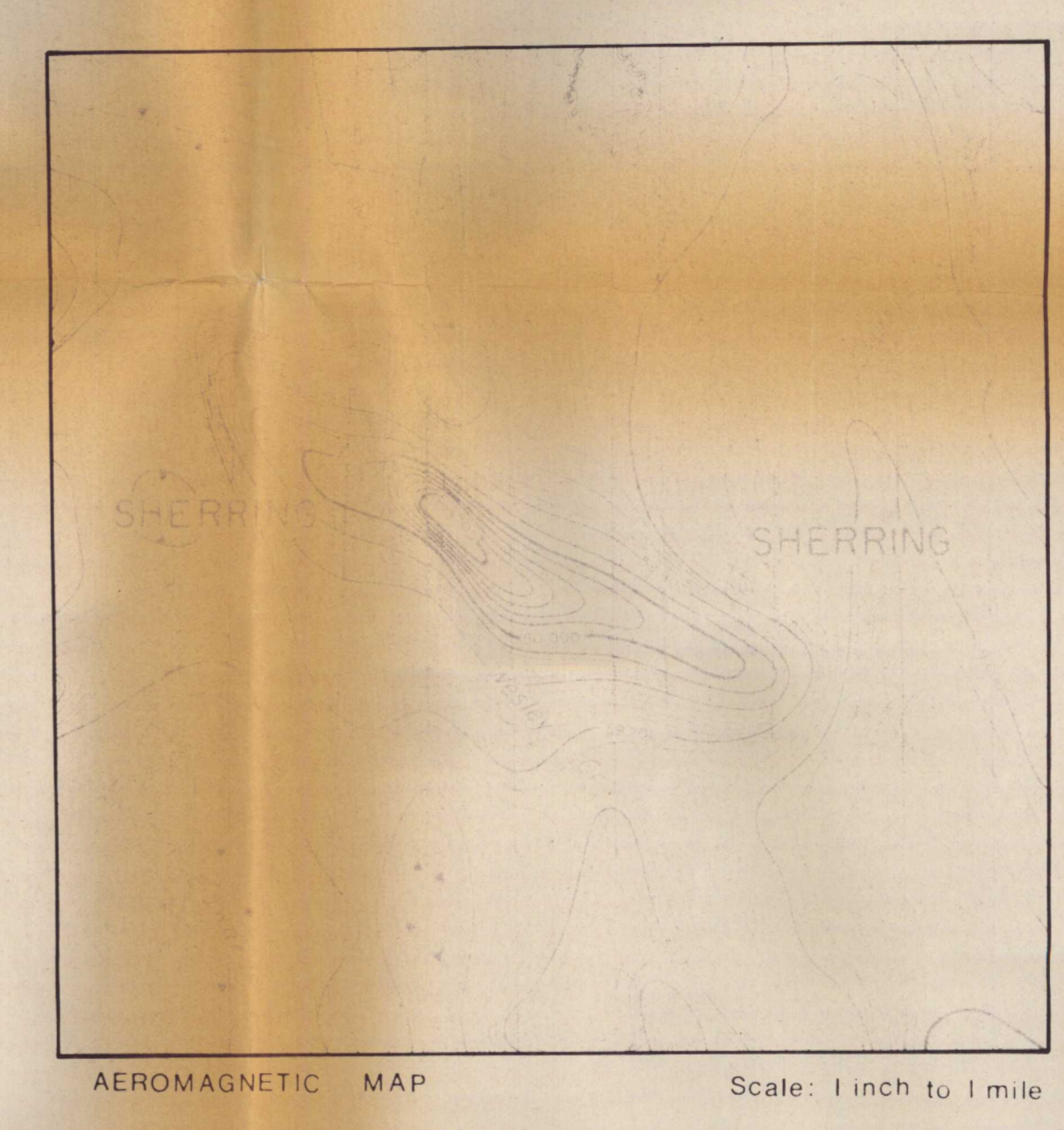
	GEOLOGICAL	DIAMOND DRILLING	AIRBORNE MAGNETOMETER	AIRBORNE ELECTROMAGNETIC/INDUCED POLARIZATION	GROUND MAGNETOMETER	VERTICAL LOOP ELECTROMAGNETIC/INDUCED POLARIZATION	LOW-FREQUENCY ELECTROMAGNETIC/INDUCED POLARIZATION	TURAM ELECTROMAGNETOMETER	JEM	INDUCED POLARIZATION	VLF	RESISTIVITY	GRAVITY	GRAVITY DATA	OTHER
1. Glen Lake Silver Mines Ltd.		63	63	63				64							
2. International Nickel Co. of Canada Ltd.		64													
3. Mistano River Mines Ltd.					64										
4. North American Rare Metals Ltd.		62	62 ^b												

^a quote from file: "The E.M. survey indicates an unusually large number of anomalies No attempt has been made to classify the E.M. anomalies"

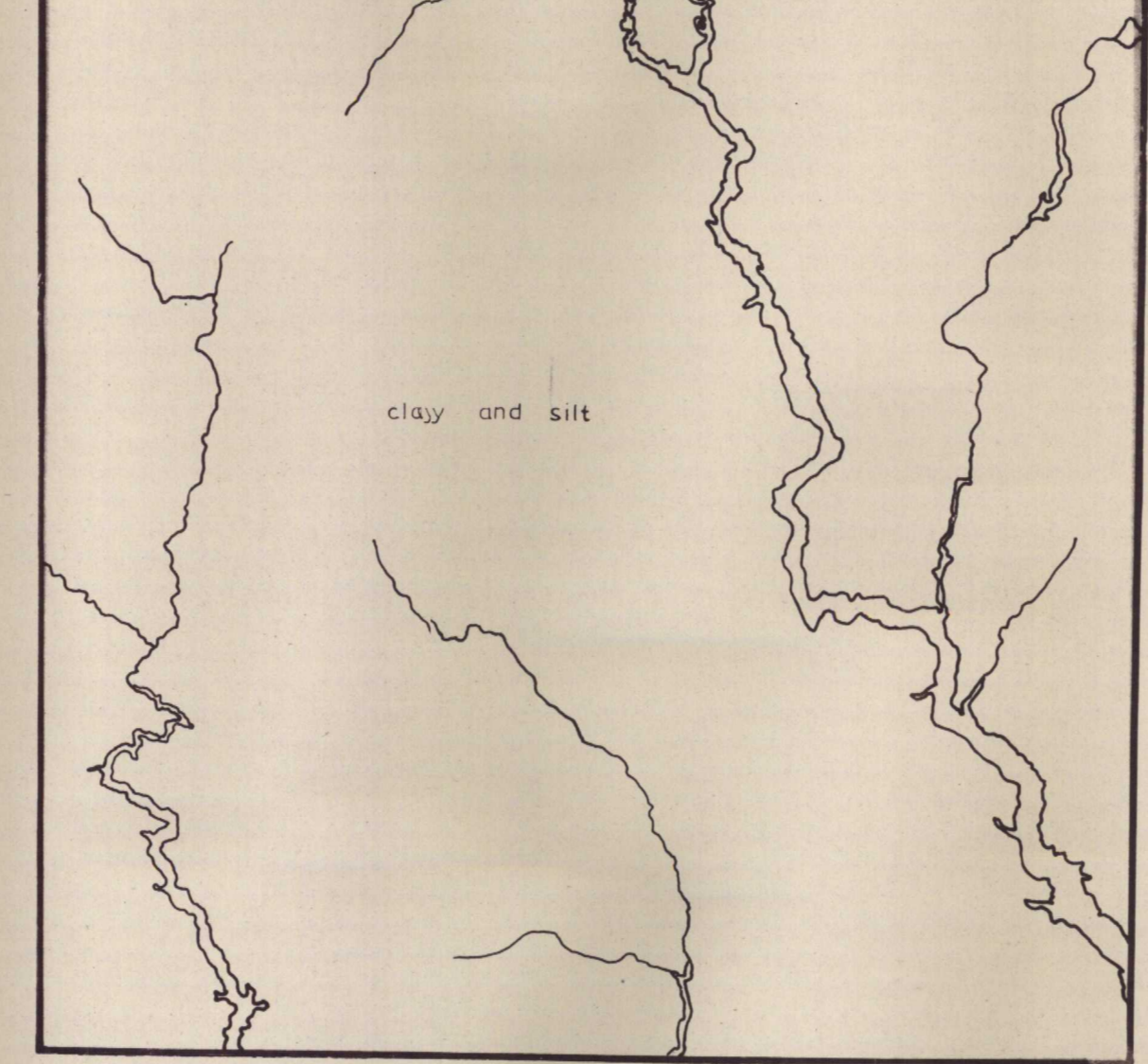
Note: The numbers on the above list stand for the year when the work was done, e.g., 66 for 1966. On the accompanying DATA LOCATION MAP, only areas for which work was submitted to the Department are outlined, and thus a company may hold more ground than indicated here. The numbers on the DATA LOCATION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



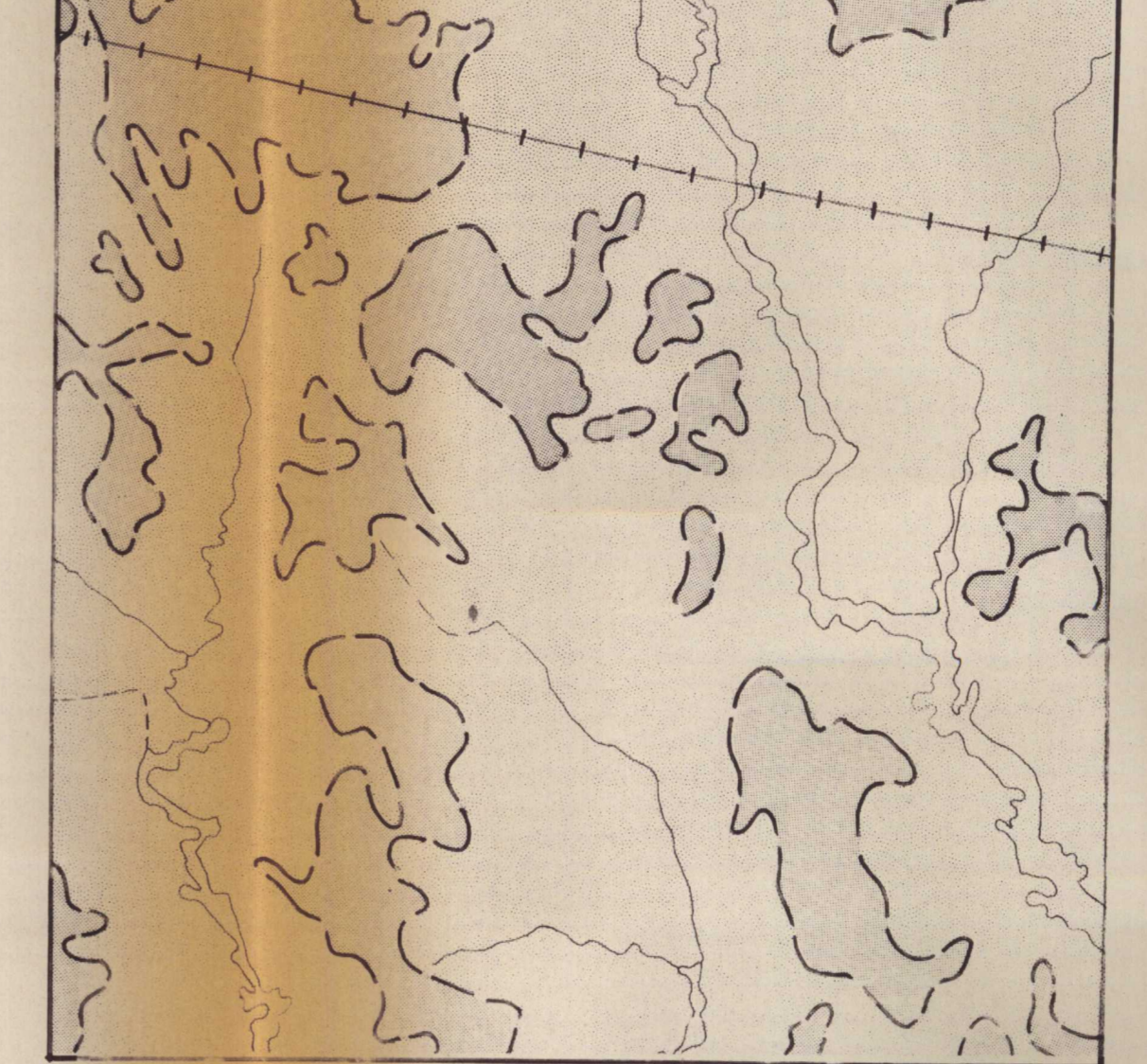
DATA LOCATION MAP Scale: 1 inch to 1 mile



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

GEOLOGICAL AND MINING SYMBOLS FOR KIRKLAND LAKE DATA SERIES

Glacial striae	Drill hole; (projected vertically), Overburden shown
Esker, medial ridge	Drill hole in overburden only; (vertical or collar, inclined, vertical), Overburden shown
Shall bedrock outcrop	Shaft; depth in feet
Bedding, top unknown; (inclined, vertical)	Airborne electromagnetic anomaly (Quadlet Channel Input System)
Bedding, top (arrow) from grain gradation; (inclined, vertical, overturned)	Airborne electromagnetic anomaly (Quadlet Channel Input System)
Bedding, top (arrow) from cross bedding; (inclined, vertical, overturned)	Airborne electromagnetic anomaly (Quadlet Channel Input System)
Lava flow; top (arrow) from pillow shape and packing	2 channel response
Schistosity; (horizontal, inclined, vertical)	3 channel response
Geosynclisity; (horizontal, inclined, vertical)	4 channel response
Layering; (horizontal, inclined, vertical)	5 channel response
Lineation with plunge	6 channel response and coincident magnetic anomaly
Geological boundary, observed	Airborne magnetometer anomaly
Geological boundary, position interpreted	Ground magnetometer anomaly
Geological boundary, deduced from geophysics	Ground electromagnetic conductor (VLF-Vert-loop; NEM-Vertical loop; VLF-VLF; Very low freq.; Turam; JEM-Cross-Loop)
Fault; (observed, assumed). Spot indicates down throw side, arrows indicate horizontal movement	Induced Polarization anomaly
Lineament	Spontaneous Polarization anomaly
Jointing; (horizontal, inclined, vertical)	Gravity anomaly
Brig folds with plunge	Radiometric anomaly
Anticline, syncline, with plunge	Resistivity anomaly

METAL AND MINERAL REFERENCES
For Kirkland Lake Data Series

Ag Silver	mw Molybdenite
amb Asbestos	Ni Nickel
Au Gold	Pb Lead
Ca Calcite	pt Pyrite
Co Cobalt	ps Pyrrhotite
Co Chalcocite	pl Platinium
Cu Copper	py Pyrite
ep Epidote	qz Quartz-carbonate vein
Fe Iron	qv Quartz vein
Fl Fluorite	sc Serpentine
gt Garnet	sp Sphalerite
gn Gelsomine	st Stibnite
mag Magnetite	tal Talc
mar Marcasite	th Thallium
ml Micasite	zn Zinc

Sources of Information
Compiled by the Geological Survey of Canada in cooperation 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: 47 A/1, 47 A/16
 GEM-630 Aeromagnetic Maps 2379, 2392
 G01 Geological Compilation Series Map 2046
 G02 Surficial Geology Map 46-379

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84
1972
GEOLOGICAL SURVEY
OTTAWA