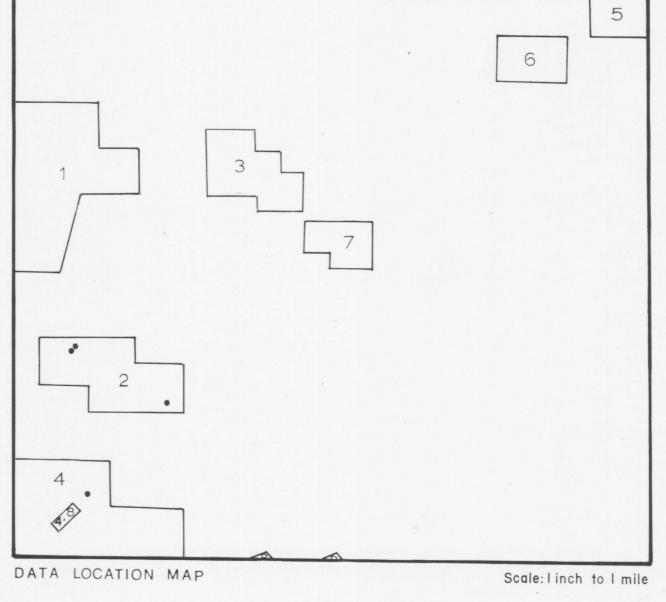
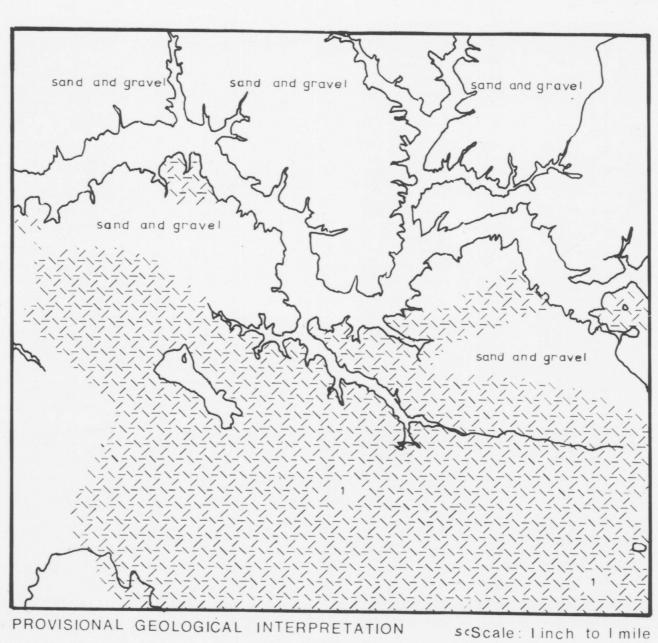
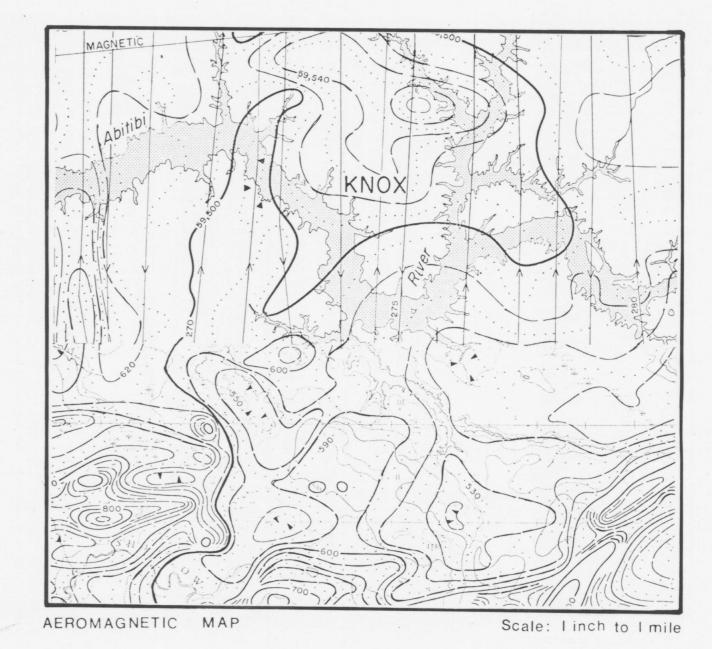
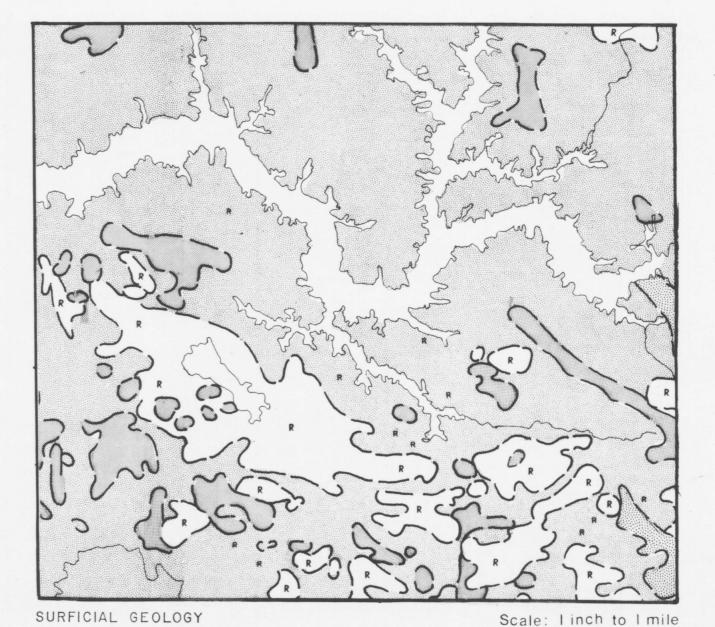


	DATA FILED WITH THE ONTARIO DEPARTMENT OF MINES AND NORTHERN AFFAIRS RESIDENT GEOLOGIST AT KIRKLAND LAKE Through March 1972	GEOLOGICAL	DIAMOND DRILLING	AIRBORNE MAGNETOMETER	AIRBORNE ELECTROMAGNETOMETER	GROUND MAGNETOMETER	VERTICAL LOOP ELECTROMAGNETOMETER	HORIZONTAL LOOP ELECTROMAGNETOMETER	TURAM ELECTROMAGNETOMETER	JEM	INDUCED POLARIZATION	VLF	RESISTIVITY	GRAVITY	GEOCHEMICAL	OTHERS
1. 2. 3. 4. 5. 6. 7.	Biltaurm Noranda Bobs Lake Noranda Central Abitibi Noranda Lower Shallow River Noranda "Knox Kerrs" Noranda "Knox Kerr 7!" Noranda East Abitibi Twin Falls Syndicate * Lundberg Airborne EM system		65		52*	64 65 65 65 65 65		65								
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.																









KNOX TOWNSHIP DISTRICT OF COCHRANE, ONTARIO

48°58' Wilkie Walker Coulson

> TABLE OF LITHOLOGICAL UNITS KIRKLAND LAKE DATA SERIES

CENOZOIC
PLEISTOCENE AND RECENT
18 a ORGANIC DEPOSITS Open and semi-open bogs 186 COCHRANE DEPOSITS 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

UNCONFORMITY

bedrock.

INTRUSIVE CONTACT PALEOZOIC LOWER AND MIDDLE SILURIAN 16a Clinton (Thornloe) Formation: limestone, dolomite, sandstone

17 Kimberlite

16b Wab! Formation: limestone, shale MIDDLE AND UPPER ORDOVICIAN 15b Farr Formation: 11mestone 15c Bucke Formation: limestone, shale 15d Guigues Formation: sandstone

UNCONFORMITY LATE PRECAMBRIAN (PROTEROZOIC)
MAFIC INTRUSIVE ROCKS⁹ 14 Diabase dikes

INTRUSIVE CONTACT MIDDLE PRECAMBRIAN (PROTEROZOIC) ALKALIC INTRUSIVE ROCKS Λ Λ Λ 13 13 Syenite, nepheline syenite, lamprophyre

> MAFIC INTRUSIVE ROCKS 12 Diabase, transition rock, and granophyre sheets and dikes INTRUSIVE CONTACT

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

UNCONFORMITY

MAFIC INTRUSIVE ROCKSe 9 Diabase dikes INTRUSIVE CONTACT ALKALIC INTRUSIVE ROCKSd 8 Syenite, monzonite, lamprophyreh

EARLY PRECAMBRIAN (ARCHEAN)

INTRUSIVE CONTACT ALKALIC METAVOLCANICSb 7 Trachyte, leucitic trachyte; flows, tuff, METASEDIMENTSJ

6 Conglomerate, greywacke, siltstone, slate, argillite, iron formation^b 5 Greywacke, siltstone, slate, iron formationa FELSIC INTRUSIVE ROCKSdJ 4 Granitic intrusive rocks 4a Quartz porphyry, quartz-feldspar porphyry, feldspar porphyry, granophyre, felsiteh

4b Trondhjemite, granodiorite, quartz monzonite:

simple batholiths and stocksh 4c Trondhjemite, granodiorite, quartz monzonite, quartz diorite, aplite, pegmatite, migmatite: complex batholiths INTRUSIVE CONTACT FELSIC METAVOLCANICS AND VOLCANICS al 3 Undifferentiated, rhyolite

3a Iron formation and ferruginous chert

INTRUSIVE CONTACT METAMORPHOSED MAFIC AND ULTRAMAFIC INTRUSIVE ROCKSCJ 2 Undifferentiated 2a Gabbro, diorite 2b Peridotite, dunite, pyroxenite, serpentinite

INTRUSIVE CONTACT

3c Pyroclastic rocks

INTERMEDIATE AND MAFIC METAVOLCANICS BJ I Undifferentiated dacite, andesite, and basalt la Intermediate flows Ib Intermediate pyroclastic rocks Ic Mafic flows ld Mafic pyroclastic rocks

a Formerly classified as Keewatin b Formerly classified as Timiskaming c Formerly classified as Haileyburian. 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. Drill hole; (projected vertically). Overburden Esker, medial ridge.

Drill hole in overburden only; (vertical or collar, inclined). Overburden shown. R Small bedrock outcrop. Bedding, top unknown; (inclined, vertical). ☑ 150' Shaft; depth in feet. Bedding, top (arrow) from grain gradation; (inclined, Mineral occurrence at surface.

Bedding, top (arrow) from cross bedding; (inclined, Airborne electromagnetic anomaly (Canadian Aero vertical, overturned). System). Lava flow; top (arrow) from pillows shape and packing. Airborne electromagnetic anomaly (Quester 6 Channel Input System). Schistosity; (horizontal, inclined, vertical).

vertical, overturned).

O 2 channel response. Gneissosity, (horizontal, inclined, vertical). • 3 channel response. 4 channel response. Layering, (horizontal, inclined, vertical). 6 5 channel response.

30° 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.

Very low freq.; Turam; JEM-Crone EM-16). Airborne electromagnetic Lineament. anomaly (Lundberg 1952 system) Jointing; (horizontal, inclined, vertical). 80° 5° Drag folds with plunge. Anticline, syncline, with plunge.

Induced Polarization anomaly SP Spontaneous Polarization anomaly Gravity anomaly Radiometric anomaly Resistivity anomaly

6 channel response and coincident magnetic anomaly.

Airborne magnetometer anomaly.

Ground magnetometer anomaly.

Ground electromagnetic conductor (VEM-Vert-loop; HEM-Horizontal loop; VLF-

METAL AND MINERAL REFERENCE For Kirkland Lake Data Series

ug	Silver	mo	Molybdenite
asb	Asbestos	Ni	Nickel
Au	Gold	Pb	Lead
Cd	Cadmium	Pd	Palladium
Co	Cobalt	pent	Pentlandite
cp	Chalcopyrite	ро	Pyrrhotite
Cr	Chromium	Pt	Platinum
Cu	Copper	ру	Pyrite
ep	Epidote	qcv	Quartz-carbonate vein
Fe	Iron		Quartz vein
f1	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/9, 42 A/16 ODM-GSC Aeromagnetic Maps 296G (rev.), 2355G ODM Geological Compilation Series Map 2046 ODM Geological Report No. 37 GSC Surficial Geology Map 46-1959

