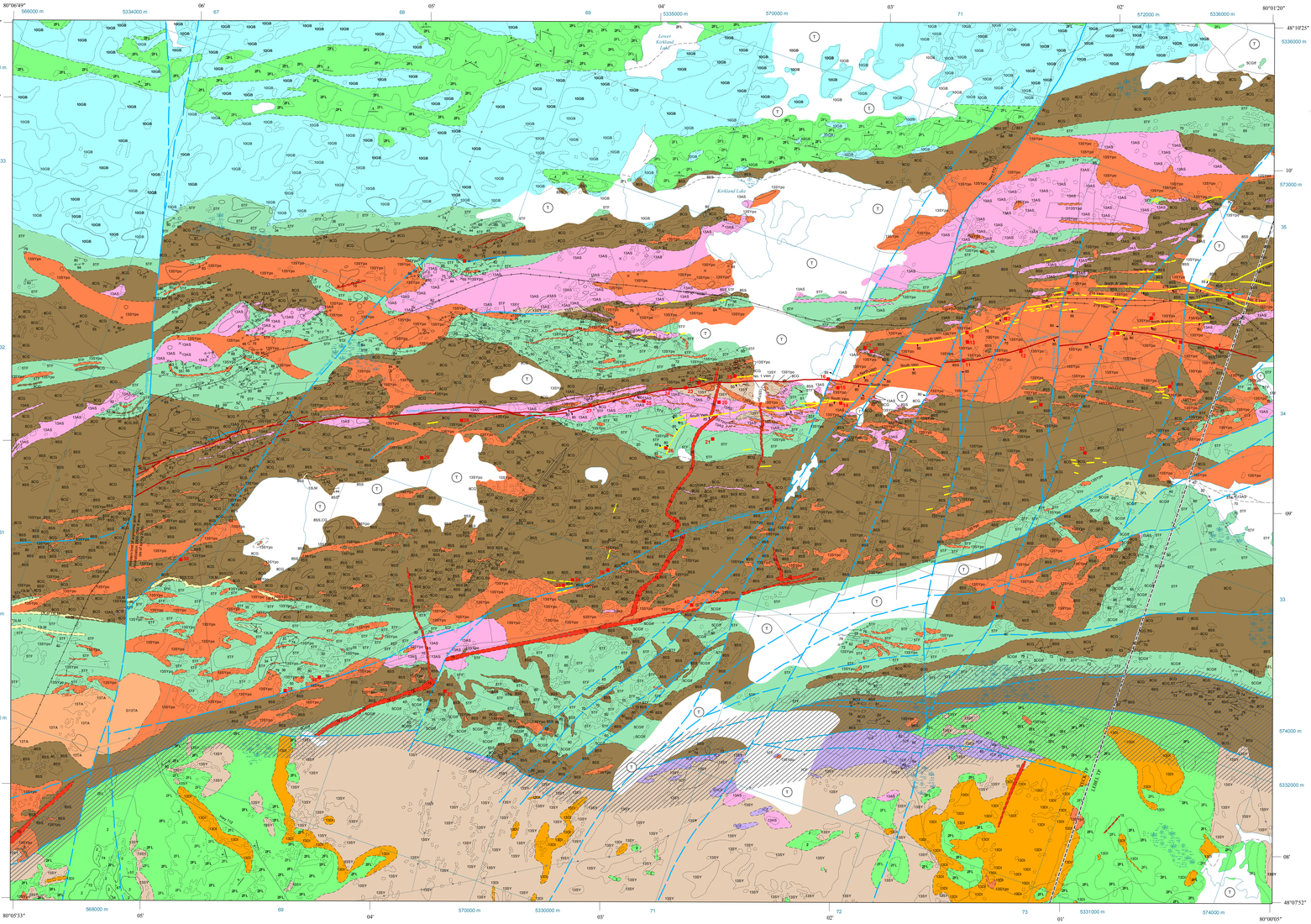


LEGEND[#6]

PHANEROZOIC

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT

UNCONFORMITY

PRECAMBRIAN

PROTEROZOIC

15 **Diabase Dikes (Matachewan Swarm)**

INTRUSIVE CONTACT

ARCHEAN

13 **Alkalic Intrusive Rocks**

- Lamprophyre
- Syenite porphyry
- Syenite
- Mafic (augite) syenite
- Trachyandesite
- Diorite, hornblendite

INTRUSIVE CONTACT

10 **Mafic Intrusive Rocks:** Gabbro, quartz gabbro, quartz diorite[1]

8 **Timiskaming-Type Metasedimentary Rocks:** Conglomerate, sandstone, minor siltstone, basal breccia

5 **Alkalic Metavolcanic Rocks**

- Tuff, tuffaceous conglomerate
- Trachyte, trachyte breccia

2 **Mafic Metavolcanic Rocks**

1 **Ultramafic Metavolcanic Rocks**

[#] The rock unit codes for this legend were designed for use with a database of geoscientific information related to the Discover Abitibi Initiative. As a result, not all codes used in the database are shown in this legend.

[1] Rock codes preceded by letter "D" indicate that surface geology is based on diamond drill-hole data compiled from Thomson (1945).

[4] May include coarse-grained mafic flows of unit 2.

SYMBOLS

- Geologic contact (observed, interpreted from geophysical data)
- Unconformity (interpreted)
- Ore-controlling Kirkland Lake Fault[#] (Main Break) and its splays (observed, interpreted)
- Other faults[#] (observed, inferred)
- Gold-bearing veins[#], exposed on surface and projected from underground workings
- Area of bedrock outcrop (mapped by author, compiled)
- Small bedrock outcrop (mapped by author)
- Graded bedding; facing known (inclined)
- Cross-bedding; facing known (inclined)
- Sedimentary bedding; facing known - unspecified facing indicators (trend only, inclined)
- Sedimentary bedding; facing known - unspecified facing indicators (vertical, overturned)
- Bedding, unsubdivided; facing unknown (inclined)
- Pillows; facing known
- Foliation; second generation (inclined)
- Foliation; third generation (inclined)
- Foliation; fourth generation (inclined, vertical)
- Foliation; unknown generation (inclined)
- Tailings[5]
- Larder Lake–Cadillac deformation zone
- Shafts and shaft sites, keyed to list below

[#] Where present, arrows indicate dip direction and angle.

[5] May not reflect present day extent.

SELECTED SHAFTS

No. on Map	Property[1]	Name
	Kirkland Lake main ore zone	
1.	Toburn	No.2 shaft
2.	Toburn	No.3 shaft
3.	Toburn	'A' shaft
4.	Toburn	'B' shaft
5.	Toburn	No.4 shaft
6.	Sylvanite	No.2 shaft
7.	Sylvanite	No.4 shaft
8.	Sylvanite	
9.	Sylvanite	
10.	Wright-Hargreaves	No.1 shaft
11.	Wright-Hargreaves	No.3 shaft
12.	Wright-Hargreaves	No.2 shaft
13.	Wright-Hargreaves	
14.	Lake Shore	No.1 shaft
15.	Lake Shore	No.3 shaft
16.	Lake Shore	No.5 shaft
17.	Lake Shore	No.2 shaft
18.	Lake Shore	Lake Shore ramp[2]
19.	Teck-Hughes	No.1 shaft
20.	Teck-Hughes	Central shaft
21.	Teck-Hughes	South shaft
22.	Teck-Hughes	No.3 shaft
23.	Teck-Hughes	Orr shaft
24.	Kirkland Lake Gold	No.1 shaft
25.	Kirkland Lake Gold	Main shaft
26.	Kirkland Lake Gold	
27.	Macassa	Elliott shaft
28.	Macassa	No.1 shaft
29.	Macassa	No.2 shaft[2]
30.	Macassa	No.3 shaft[2]
	Other occurrences	
31.	Kirkland Gold Rand (Hudson-Rand Gold Mines)	
32.	Black	
33.	Catawirk	Abba shaft
34.	Kirkland Lake Gold	
35.	Kirkland Lake Gold	
36.	Amalgamated Kirkland	
37.	Amalgamated Kirkland	
38.	Amalgamated Kirkland	
39.	Amalgamated Kirkland	
40.	Amalgamated Kirkland	
41.	Kirkland Townsite	

[1] Property names after Thomson (1945).

[2] Presently operating under ownership of Kirkland Lake Gold Inc.

EXPLANATION OF ROCK CODES

This map uses codes that are to be read from left to right.

① ③

8SStgCG

② ④

① The lithology code (8) identifies the main lithologic unit within a polygon or outcrop. Lithology codes correspond to units listed in LEGEND, at left. The letters "C", "G" or "D" preceding a lithology code refer to, respectively, information compiled from previously published sources, information interpreted from geophysical data, and information derived from drill-hole logs.

② The primary rock type code (SS) identifies subdivisions of the main lithologic unit. Explanations of rock type codes are listed below under "Rock Type".

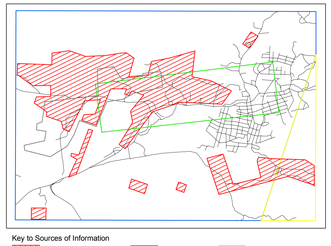
③ The texture code (tg) supplies additional information about the texture of the rock. Explanations of texture codes are listed below under "Textural Description".

④ The secondary codes (CG), where present, identify a second, less abundant lithologic unit and rock type within the polygon or outcrop. These codes are the same as those listed under LEGEND, "Rock Type" and, where applicable, "Textural Description".

Using the legend and the explanations listed below, therefore, 8SStgCG indicates a polygon or outcrop of Timiskaming-type metasedimentary rocks composed primarily of fine-grained sandstone, with subordinate conglomerate.

8SStgCG

Rock Type		Textural Description	
AG	Argillite	am	amygdaloidal
AK	Arkose	ap	aphyric
AP	Aplite	av	alteration breccia
AS	Mafic (Augite) Syenite	bd	bedded
AT	Ash Tuff	bx	brecciated
BK	Basaltic Komatiite	cb	cross bedded
BT	Block Tuff	cf	cooling fractures
BX	Breccia	cg	coarse grained
CC	Carbonate	cl	clast supported
CF	Carbonate-Fuchsite Schist	cu	cumulate
CG	Conglomerate	cy	cryptic
CH	Chert	dc	dacitoic
CP	Clinopyroxenite	ec	elongated clasts
CS	Chlorite Schist	eo	elongated pillows
CT	Cherty Tuff	ey	eyes
CU	Cumulate	fb	flow banding
DA	Dacite	fc	flattened clasts
DI	Diorite	fg	fine grained
DN	Dunite	fl	finely laminated
DS	Dike or Sill	fp	flattened pillows
EX	Exhalite	ft	fluidal texture
FL	Flow	fx	fractured
FP	Feldspar Porphyry	gp	glomeroporphyritic
FX	Flow Breccia	hu	hummocky cross-stratified
GB	Gabbro	ib	intrusive breccia
GD	Granodiorite	ig	inverse grading
GH	Hornblende Gabbro	lm	laminated
GL	Leucogabbro	mg	medium grained
GM	Melanogabbro	mm	monomictic
GN	Gabbronorite	mp	matrix supported
GP	Graphitic Phyllite	my	mylonite
GR	Granite	ng	normal grading
GS	Graphitic Shale	op	ophitic
GT	Graphitic Tuff	pg	pegmatic
GW	Greywacke	pj	polygonal joints
HY	Hyaloclastite	pm	polymictic
IF	Iron Formation	po	porphyritic
JA	Jasper	ps	polysutured
KI	Kimberlite	re	reworked
KO	Komatiite	sc	schistose
LA	Litharenite	sh	sheared
LG	Leucogranite	sp	spherulitic
LM	Lamprophyre	sr	soft-sediment deformation
LS	Lapillistone	sx	spinifex
LT	Lapilli Tuff	tb	turbidite
LX	Lobe and Microbreccia	tc	trachytic
MA	Marble	tf	tuffaceous
MD	Monzodiorite	tl	tectonic breccia
MU	Mudstone	va	variolitic
MZ	Monzonite	ve	vesicular
NO	Norite	vf	aphanitic
PD	Peridotite	xl	xenoliths
PG	Porphyritic Granite		
PI	Pillows		
PL	Parallel Laminated		
PP	Peperite		
PR	Pyroxenite		
PT	Crystal Tuff		
PX	Pillow Breccia		
PY	Pyroclastic Rock		
QD	Quartz Diorite		
QM	Quartz Monzonite		
QP	Quartz Porphyry		
QS	Quartz Syenite		
QZ	Quartzite		
SA	Syenite		
SE	Serpentinite		
SL	Sandstone-Siltstone		
SP	Spinifex		
SS	Sandstone		
ST	Siltstone		
SY	Syenite		
TA	Trachyandesite		
TB	Trachybasalt		
TC	Talc-Chlorite Schist		
TF	Tuff		
TN	Tonalite		
TR	Trachyte		
TS	Talc Schist		
TX	Tuff Breccia		
VB	Volcaniclastic Breccia		
VC	Volcaniclastic Rock		
VS	Volcaniclastic Sandstone		
VX	Volcanic Breccia		
WA	Wackke		
WT	Welded Tuff		
YX	Pyroclastic Breccia		
ZG	Monzodiorite		
ZG	Monzogabbro		
ZP	Quartz-Feldspar Porphyry		



Key to Sources of Information

- Mapping by Ispolatov, 2004
- MacLean, 1944
- Thomson, 1945
- Todd, 1928
- Unpublished company maps provided by Kirkland Lake Gold Inc.

SOURCES OF INFORMATION

Base map information derived from the Ontario Land Information Warehouse, Land Information Ontario, Ontario Ministry of Natural Resources, scale 1:20 000. Universal Transverse Mercator (UTM) co-ordinates are in North American Datum 1983 (NAD 83), Zone 17.

Compiled geology derived from:

MacLean, A. 1944. Township of Lebel, District of Timiskaming, Ontario; Ontario Department of Mines, Map 53a, scale 1:12 000.

Thomson, J.E. 1945. Township of Teck, District of Timiskaming, Ontario; Ontario Department of Mines, Map 1945-1, scale 1:12 000.

Todd, E.W. 1928. West sheet, Central ore zone and vicinity, Kirkland Lake gold area; Ontario Department of Mines, Map 37a-1, scale 1:2400.

———1928. Central sheet. Central ore zone and vicinity, Kirkland Lake gold area; Ontario Department of Mines, Map 37a-2, scale 1:2400.

Unpublished company maps provided by Kirkland Lake Gold Inc.

Geophysical data derived from:

Ontario Geological Survey 2004. Ontario airborne geophysical surveys, magnetic data, grid data (ASCII format) and vector data, Kirkland Lake – Larder Lake area; Ontario Geological Survey, Geophysical Data Set 1053a.

Ontario Geological Survey 2004. Ontario airborne geophysical surveys, magnetic data, grid data (Geosoft® format) and vector data, Kirkland Lake – Larder Lake area; Ontario Geological Survey, Geophysical Data Set 1053b.

Metric conversion factor: 1 foot = 0.3048 m (0.304 m for drill-hole data).

Magnetic declination approximately 12°W in 2004.

Ontario

Ontario Geological Survey

MAP P.3558

PRECAMBRIAN GEOLOGY

TECK TOWNSHIP TRANSECT

Scale 1:10 000

250 m 0 250 500 m

NTS Reference: 42 A/1

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Location Map 1cm equals 10 km

This geologic map represents one of the products of the Greenstone Architecture Project of the Discover Abitibi Initiative, which was designed to stimulate mineral exploration in the Ontario portion of the Abitibi greenstone belt and has components that range from geophysical surveying to deposit-scale mapping (see Ayer et al. 2003). This map presents results from the second year of the Gold Subproject 2 study, as summarized in Ispolatov, Lafrance and Dubé 2004.

Cette carte géologique représente un des produits découlant du projet Architecture des ceintures de roches vertes du projet Découvrons l'Abitibi dans le cadre de l'initiative Découvrons l'Abitibi, conçue pour stimuler l'exploration minérale dans la section ontarienne de la ceinture de roches vertes de l'Abitibi et comporte de diverses composantes, depuis les levés géophysiques jusqu'aux cartes à l'échelle du gisement (voir Ayer et al. 2003). Cette carte présente les résultats de la deuxième année de l'étude portant sur le sous-projet 2 relatif à l'or, résumée dans Ispolatov, Lafrance et Dubé 2004.

Ayer, J.A., Thurston, P.C., Dubé, B., Fowler, A.D., Gibson, H.L., Hudak, G., Lafrance, B., Lesher, C.M., Piercey, S.J., Reed, L.E. and Thompson, P.H. 2003. Overview of the Discover Abitibi Greenstone Architecture project: subprojects, goals and results; *in* Summary of Field Work and Other Activities 2003, Ontario Geological Survey, Open File Report 6120, p.32-1 to 32-12.

Ispolatov, V., Lafrance, B. and Dubé, B. 2004. Discover Abitibi. Gold Subproject 2: Lithostratigraphic mapping and gold mineralization studies, Kirkland Lake gold camp (Gauthier and Teck townships); *in* Summary of Field Work and Other Activities 2004, Ontario Geological Survey, Open File Report 6145, p.42-1 to 42-6.

CREDITS

Geology by V.O. Ispolatov, 2004.

Digitization and preparation of GIS product by V.O. Ispolatov and N. Laliber.

Cartographic production by A. Evers.

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Contract management, project management by Robert Calhoun, Project Manager, Discover Abitibi Initiative.

Overall project management by Timmins Economic Development Corporation.

Laurie Reed (consulting geophysicist) integrated data and generated custom plots of total magnetic field and first vertical derivatives of total magnetic field for Discover Abitibi.

FedNor Canada

Ontario Northern Ontario Heritage Fund Fonds du patrimoine du Nord de l'Ontario

Discover Abitibi

A project of innovation, exploration and revitalization

Découvrons l'Abitibi

Un projet d'innovation, de exploration et de renouvellement

Discover Abitibi Initiative

The Discover Abitibi Initiative is a regional, cluster economic development project based on geoscientific investigations of the western Abitibi greenstone belt. The initiative, centred on the Kirkland Lake and Timmins mining camps, will complete 19 projects developed and directed by the local stakeholders. FedNor, Northern Ontario Heritage Fund Corporation, municipalities and private sector investors have provided the funding for the initiative.

Initiative Découvrons l'Abitibi

L'initiative *Découvrons l'Abitibi* est un projet de développement économique régional dans une grappe d'industries, projet fondé sur des études géoscientifiques de la ceinture de roches vertes de l'Abitibi occidental. Cette initiative, centrée sur les zones minières de Kirkland Lake et de Timmins, comprend 19 projets élaborés et dirigés par des intervenants locaux. FedNor, la Société de gestion du Fonds du patrimoine du Nord de l'Ontario, municipalités et des investisseurs du secteur privé ont fourni les fonds de cette initiative.

Timmins

KIRKLAND LAKE DISCOVER OPPORTUNITY

To enable the rapid dissemination of information, this map has not received a technical edit. Discrepancies may occur for which the Ontario Ministry of Northern Development and Mines does not assume liability. Users should verify critical information.

Issued 2005.

Information from this publication may be quoted if credit is given. It is recommended that reference to this map be made in the following form:

Ispolatov, V.O. 2005. Precambrian geology of Teck Township transect; Ontario Geological Survey, Preliminary Map P.3558, scale 1:10 000.