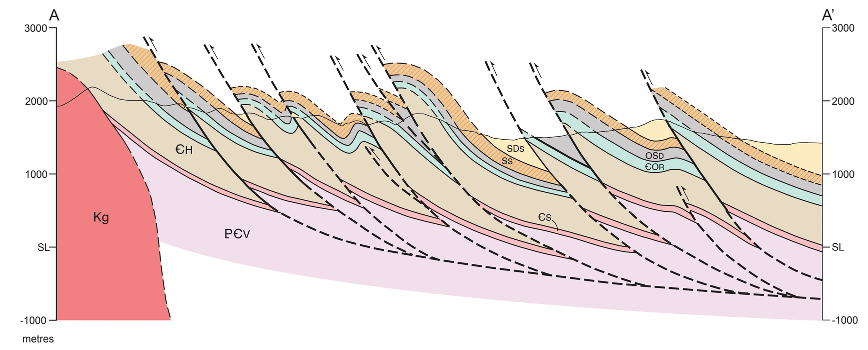
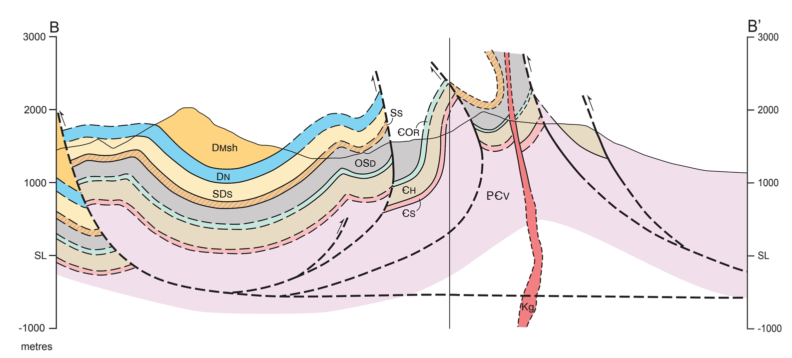
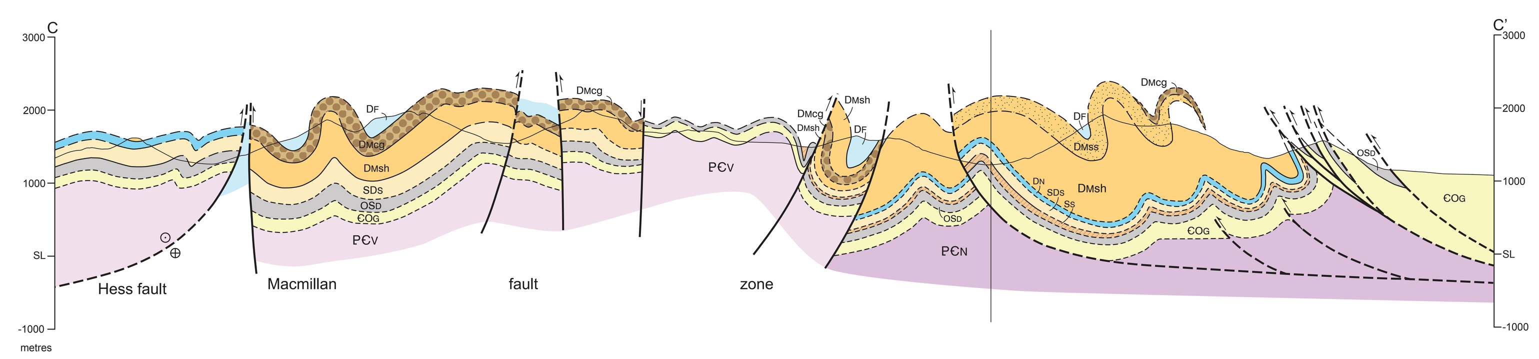
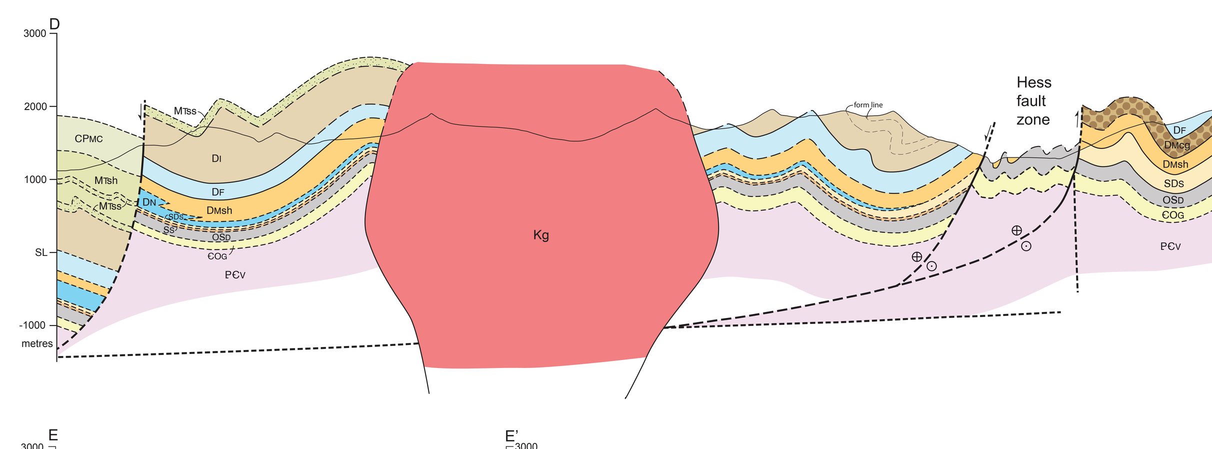
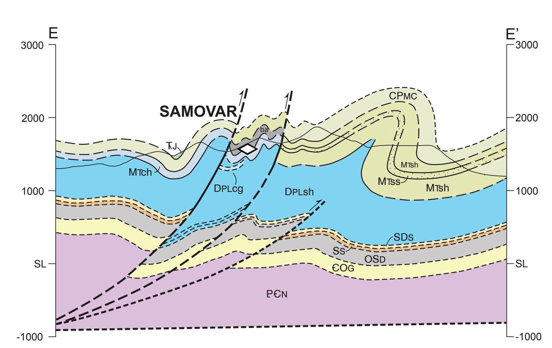
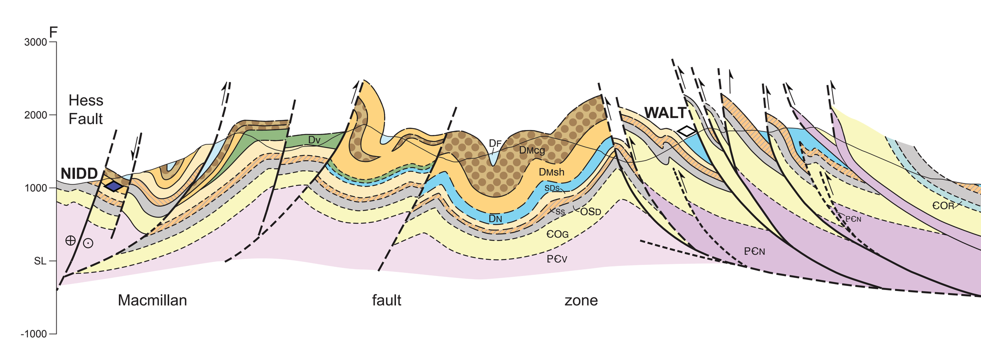


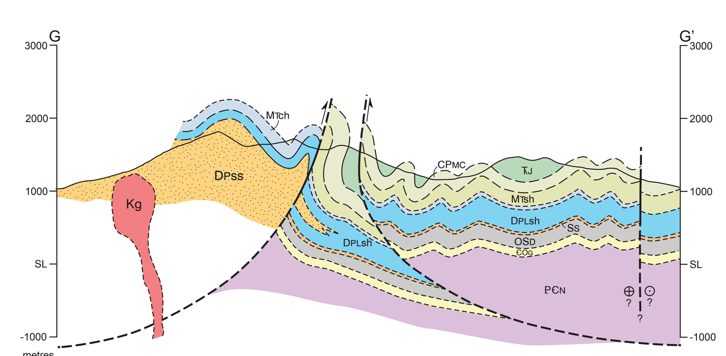


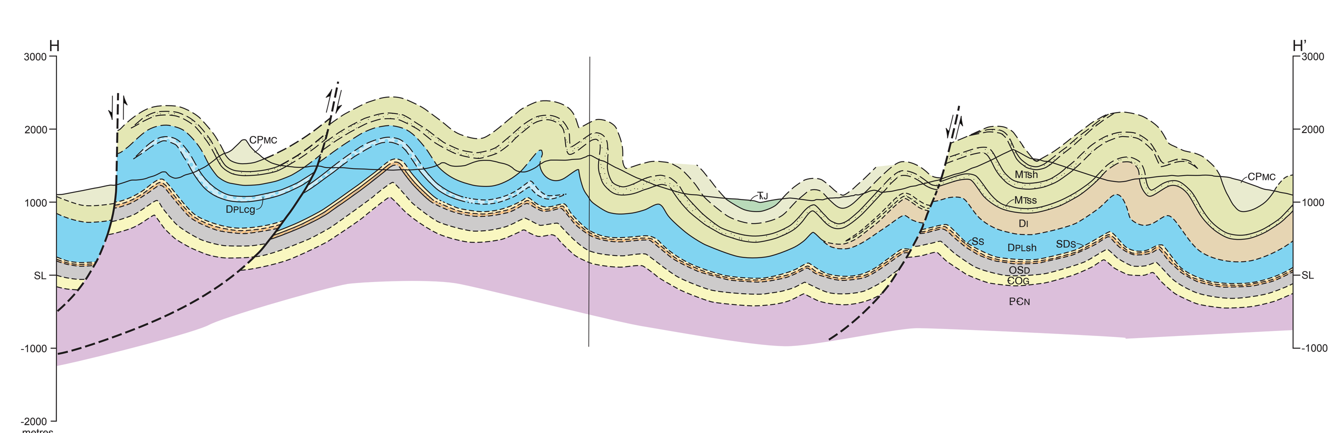


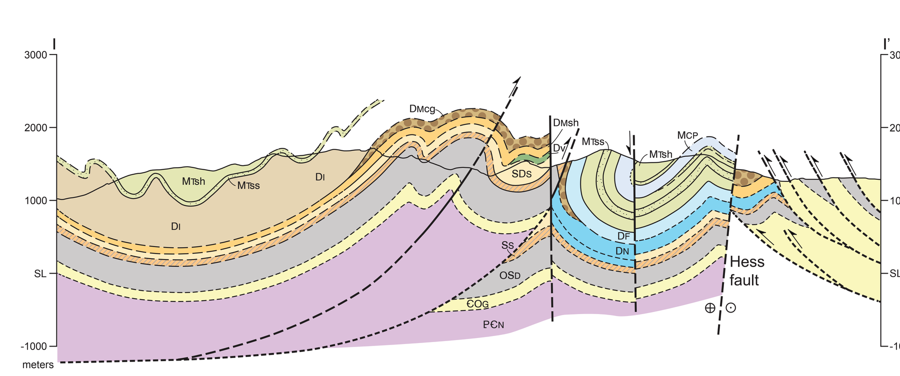










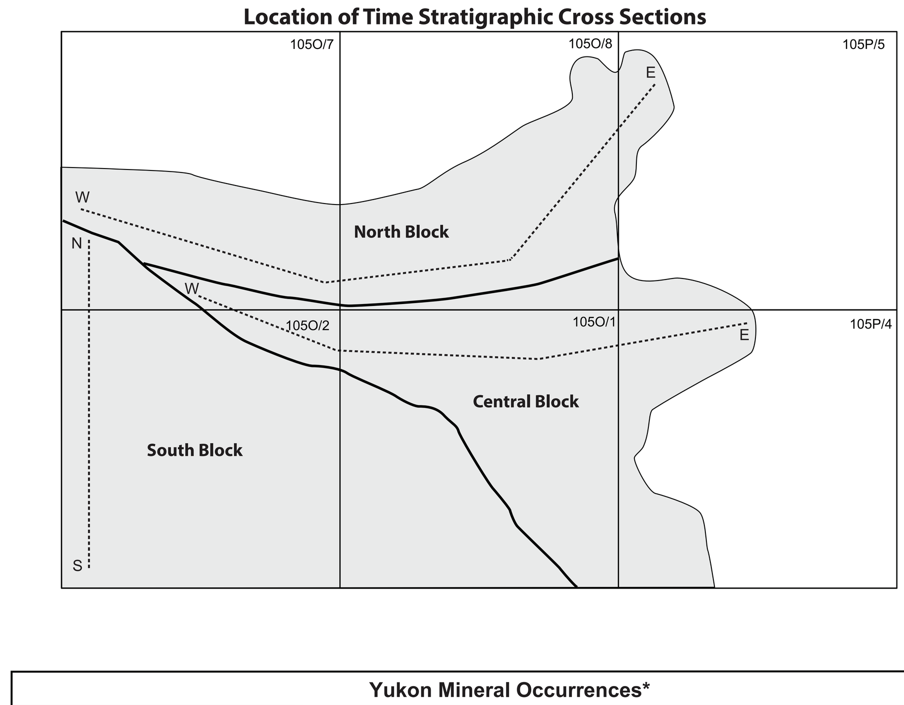


PALEONTOLOGY**

MAP ID	NTS 50K	FORMATION	AGE	FOSSIL TYPE	GSC CURATION NUMBER	COLLECTOR	AUTHOR**
1	105O/2	Jones Lake Fm.	Late Triassic, Early Norian	conodont	C-089946	Abbott, J.G.	M.J. Orchard
2	105O/7	Tsichu Gp., Caribou Pass Fm	Late Mississippian, late Visean-Serpukhovian	conodont	C-102271	Abbott, J.G.	M.J. Orchard
3	105O/7	Tsichu Gp., Caribou Pass Fm	Late Mississippian, late Visean-Serpukhovian	conodont	C-102272	Abbott, J.G.	M.J. Orchard
4	105O/7	Tsichu Gp., Caribou pass Fm	Late Mississippian, late Visean-Serpukhovian	conodont	C-087569	Gordey, S.P.	M.J. Orchard
5	105O/7	Tsichu Gp., Caribou Pass Fm	Late Mississippian, late Visean-Serpukhovian	conodont	C-087567	Gordey, S.P.	M.J. Orchard
6	105O/7	Tsichu Gp., sandstone facies	Late Mississippian, late Visean-Serpukhovian	conodont	C-087566	Gordey, S.P.	M.J. Orchard
7	105O/2	Tsichu Gp., chert facies	Late Mississippian, late Visean-Serpukhovian	conodont	C-089931	Abbott, J.G.	M.J. Orchard
8	105O/7	Tsichu Gp., shale facies at base of Tsichu Gp	Mississippian, late Tournaisian	conodont	C-108152	Abbott, J.G.	M.J. Orchard
9	105O/2	Tsichu Gp., chert facies	Mississippian, late Tournaisian	conodont	C-108154	Abbott, J.G.	M.J. Orchard
10	105O/2	Tsichu Gp., TEA (SAMOVAR) barite	Mississippian, late Tournaisian	conodont	C-089975	Abbott, J.G.	M.J. Orchard
11	105O/2	Tsichu Gp., TEA (SAMOVAR) barite	Mississippian, Tournaisian	conodont	C-086426	Jonasson, I.R.	M.J. Orchard
12	105J/15	Tsichu Gp., limestone in chert facies	Mississippian, late Tournaisian	conodont	C-108153	Abbott, J.G.	M.J. Orchard
13	105O/7	Tsichu Gp., shale facies	Mississippian, early-middle Tournaisian	conodont	C-089930	Abbott, J.G.	M.J. Orchard
14	105O/7	Tsichu Gp., chert facies	Mississippian, early-middle Tournaisian	conodont	C-089932	Abbott, J.G.	M.J. Orchard
15	105P/4	Tsichu Gp., shale facies	Mississippian, Tournaisian	conodont	C-087563	Abbott, J.G.	M.J. Orchard
16	105P/4	Tsichu Gp., shale facies	Carboniferous	conodont	C-089939	Abbott, J.G.	M.J. Orchard
17	105O/7	Itsi Fm.	Late Devonian, early middle Famennian	conodont	C-089929	Abbott, J.G.	M.J. Orchard
18	105O/1	Portrait Lake Fm., shale facies	Late Devonian, middle Famennian	conodont	C-089933	Abbott, J.G.	M.J. Orchard
19	105O/8	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, middle Famennian	conodont	C-087685	Abbott, J.G.	M.J. Orchard
20	105O/1	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, late Frasnian	conodont	C-087560	Abbott, J.G.	M.J. Orchard
21	105O/1	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, late Frasnian	conodont	C-102342	Abbott, J.G.	M.J. Orchard
22	105O/1*	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, middle-late Frasnian	conodont	C-086425	Jonasson, I.R.	M.J. Orchard
23	105O/1*	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian middle-late Frasnian	conodont	C-176309	Turner, R.	M.J. Orchard
24	105I/13	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, middle Frasnian	conodont	C-087557	Abbott, J.G.	M.J. Orchard
25	105I/13	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, middle Frasnian	conodont	C-102321	Abbott, J.G.	M.J. Orchard
26	105O/7	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, early Frasnian	conodont	C-102281	Abbott, J.G.	M.J. Orchard
27	105O/1	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, Frasnian	conodont	C-102340	Abbott, J.G.	M.J. Orchard
28	105O/1*	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, Frasnian	conodont	C-118030	McClay, K.M.	M.J. Orchard
29	105O/1*	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian, Frasnian	conodont	C-087698	Dawson, K.M.	M.J. Orchard
30	105I/13	Portrait Lake Fm., Fuller Lake Mbr	Late Devonian	conodont	C-102332	Abbott, J.G.	M.J. Orchard
31	105P/4	Portrait Lake Fm., Fuller Lake Mbr	probably Late Devonian	conodont	C-089936	Abbott, J.G.	M.J. Orchard
32	105P/4	Portrait Lake Fm., Macmillan Pass Mbr	Late Devonian, probably Frasnian	conodont	C-102320	Abbott, J.G.	M.J. Orchard
33	105O/7	Portrait Lake Fm., Niddery Lake Mbr	Middle Devonian, Eifelian	conodont	C-087690	Abbott, J.G.	M.J. Orchard
34	105O/7	Portrait Lake Fm., Niddery Lake Mbr	Middle Devonian, Eifelian	conodont	C-089951	Abbott, J.G.	M.J. Orchard
35	105O/8	Portrait Lake Fm., Niddery Lake Mbr	Middle Devonian, Eifelian	conodont	C-089962	Abbott, J.G.	M.J. Orchard
36	105O/1	Portrait Lake Fm., Niddery Lake Mbr	Middle Devonian, Eifelian	conodont	C-089976	Abbott, J.G.	M.J. Orchard
37	105O/7*	Portrait Lake Fm., Niddery Lake Mbr	Middle Devonian, Givetian	conodont	C-087692	Dawson, K.M.	M.J. Orchard
38	105O/7	Portrait Lake Fm., Niddery Lake Mbr	late Early Devonian, Emsian	conodont	C-087538	Abbott, J.G.	M.J. Orchard
39	105O/7	Portrait Lake Fm., Niddery Lake Mbr	Middle Devonian-Mississippian, Emsian-Tournaisian	conodont	C-089972	Abbott, J.G.	M.J. Orchard
40	105O/7	Portrait Lake Fm., Niddery Lake Mbr	late Early Devonian, Emsian	conodont	C-108974	Abbott, J.G.	M.J. Orchard
41	105O/1	Portrait Lake Fm., Niddery Lake Mbr	Middle-Late Devonian, Emsian-Frasnian	conodont	C-087685	Abbott, J.G.	M.J. Orchard
42	105O/7	Portrait Lake Fm., Niddery Lake Mbr	Middle Devonian-Early Carboniferous	conodont	C-102266	Abbott, J.G.	M.J. Orchard
43	105O/8	Portrait Lake Fm., Niddery Lake Mbr	Middle Devonian	conodont	C-102309	Abbott, J.G.	M.J. Orchard
44	105O/7	Portrait Lake Fm., Niddery Lake Mbr	Early Devonian, Emsian	conodont	C-087689	Abbott, J.G.	M.J. Orchard
45	105O/7	Portrait Lake Fm., Niddery Lake Mbr	Early Devonian, late Pragian-early Emsian	conodont	C-087688	Abbott, J.G.	M.J. Orchard
46	105O/1	Sapper Fm.? above Macmillan Pass volcanics	Middle Devonian-Mississippian, Eifelian-Tournaisian	conodont	C-089964	Abbott, J.G.	M.J. Orchard
47	105O/7	Calc. shale lens in Macmillan Pass volcanics	Middle Devonian, middle Eifelian-early Givetian	conodont	C-087687	Abbott, J.G.	M.J. Orchard
48	105O/1	Sapper Fm	Middle Devonian, Eifelian	conodont	C-087554	Abbott, J.G.	M.J. Orchard
49	105O/1	Sapper Fm	Middle Devonian, Eifelian	conodont	C-108165	Abbott, J.G.	M.J. Orchard
50	105O/1	Sapper Fm	Middle Devonian, Eifelian	conodont	C-102347	Abbott, J.G.	M.J. Orchard
51	105O/8	Sapper Fm	Middle Devonian, probably Eifelian	conodont	C-102313	Abbott, J.G.	M.J. Orchard
52	105O/1	Sapper Fm	Early-Middle Devonian	conodont	C-108155	Abbott, J.G.	M.J. Orchard
53	105O/7	Sapper Fm	Early Devonian, Emsian	conodont	C-102287	Abbott, J.G.	M.J. Orchard
54	105O/7	Sapper Fm	probably Early Devonian	conodont	C-102277	Abbott, J.G.	M.J. Orchard
55	105O/7	Sapper Fm	Early Devonian, Pragian	graptolite	C-089901	Abbott, J.G.	B.S. Norford
56	105O/7	Sapper Fm	Early Devonian, Pragian	graptolite	C-089906	Abbott, J.G.	B.S. Norford
57	105P/5	Sapper Fm	Early Devonian, Pragian	graptolite	C-089989	Abbott, J.G.	B.S. Norford
58	105O/1	Sapper Fm	latest Silurian, Pridolian	graptolite	C-089995	Abbott, J.G.	B.S. Norford
59	105O/1	Sapper Fm	Late Silurian, Ludlovian	graptolite	C-108101	Abbott, J.G.	B.S. Norford
60	105O/1	Sapper Fm	Late Silurian to early Devonian, Ludlovian-Lockovian	graptolite	C-089998	Abbott, J.G.	B.S. Norford
61	105O/1	Sapper Fm	Ordovician-Devonian	conodont	C-102351	Abbott, J.G.	M.J. Orchard
62	105P/5	Duo Lake Fm	Early Silurian, latest Llandoverian	graptolite	C-089988	Abbott, J.G.	B.S. Norford
63	105O/8	Duo Lake Fm	Early Silurian, latest Llandoverian	graptolite	C-089958	Abbott, J.G.	B.S. Norford
64	105O/8	Duo Lake Fm	early Silurian, latest Llandoverian	graptolite	C-089959	Abbott, J.G.	B.S. Norford
65	105O/1	Duo Lake Fm	Early Silurian, Late Llandoverian	graptolite	C-108108	Abbott, J.G.	B.S. Norford
66	105O/1	Duo Lake Fm	Early Silurian, middle Llandoverian	graptolite	C-89919	Abbott, J.G.	B.S. Norford
67	105O/8	Duo Lake Fm	Early Silurian, middle Llandoverian	graptolite	C-089909	Abbott, J.G.	B.S. Norford
68	105O/1	Duo Lake Fm	Early Silurian, middle Llandoverian	graptolite	C-89919	Abbott, J.G.	B.S. Norford
69	105O/2	Duo Lake Fm	Early Silurian, middle Llandoverian	graptolite	C-089908	Abbott, J.G.	B.S. Norford
70	105O/1	Duo Lake Fm	Early Silurian, middle Llandoverian	graptolite	C-089903	Abbott, J.G.	B.S. Norford
71	105O/7	Duo Lake Fm	Early Silurian, late Early-Middle Llandoverian	graptolite	C-089986	Abbott, J.G.	B.S. Norford
72	105O/7	Duo Lake Fm	Early Silurian, Llandovery	conodont	C-089971	Abbott, J.G.	M.J. Orchard
73	105O/7	Duo Lake Fm	Late Ordovician, Caradocian or Ashgillian	graptolite	C-089902	Abbott, J.G.	B.S. Norford
74	105O/1	Duo Lake Fm	Late Ordovician, Caradocian or Ashgillian	graptolite	C-089904	Abbott, J.G.	B.S. Norford
75	105O/7	Duo Lake Fm	Late Ordovician, Caradocian or Ashgillian	graptolite	C-089907	Abbott, J.G.	B.S. Norford
76	105O/1	Duo Lake Fm	Late Ordovician, Caradocian or Ashgillian	graptolite	C-089911	Abbott, J.G.	B.S. Norford
77	105O/1	Duo Lake Fm	Late Ordovician, Caradocian or Ashgillian	graptolite	C-089912	Abbott, J.G.	B.S. Norford
78	105O/8	Duo Lake Fm	Late Ordovician, Caradocian or Ashgillian	graptolite	C-089913	Abbott, J.G.	B.S. Norford
79	105O/1	Duo Lake Fm	latest Early to early Middle Ordovician, Arenigian-Llanvirnian	graptolite	C-108103	Abbott, J.G.	B.S. Norford
80	105O/7	Duo Lake Fm	Late Ordovician, Caradocian - Ashgillian	graptolite	C-089985	Abbott, J.G.	B.S. Norford
81	105O/1	Duo Lake Fm	Late Ordovician, Caradocian	graptolite	C-089992	Abbott, J.G.	B.S. Norford
82	105P/4	Duo Lake Fm	Late Ordovician, Caradocian - Ashgillian	graptolite	C-089994	Abbott, J.G.	B.S. Norford
83	105O/1	Duo Lake Fm	Late Ordovician, Caradocian - Ashgillian	graptolite	C-089993	Abbott, J.G.	B.S. Norford
84	105O/2	Duo Lake Fm	Late Ordovician, Caradocian - Ashgillian	graptolite	C-089997	Abbott, J.G.	B.S. Norford
85	105O/2	Duo Lake Fm	Late Ordovician, Caradocian - early Ashgillian	graptolite	C-108194	Abbott, J.G.	B.S. Norford
86	105O/2	Duo Lake Fm	Late Ordovician, Caradocian	graptolite	C-089944	Abbott, J.G.	B.S. Norford
87	105O/1	Duo Lake Fm	Late Ordovician, Caradocian	graptolite	C-108197	Abbott, J.G.	B.S. Norford
88	105O/1	Duo Lake Fm	late Middle Ordovician, Caradocian	graptolite	C-89917	Abbott J.G.	B.S. Norford
89	105O/7	Duo Lake Fm	Late Ordovician, Caradocian	graptolite	C-108104	Abbott, J.G.	B.S. Norford
90	105O/7	Duo Lake Fm	late Middle or Late Ordovician	graptolite	C-089910	Abbott, J.G.	B.S. Norford
91	105O/8	Duo Lake Fm	late Middle or Late Ordovician	graptolite	C-089960	Abbott, J.G.	B.S. Norford
92	105O/8	Duo Lake Fm	late Middle or Late Ordovician	graptolite	C-089957	Abbott, J.G.	B.S. Norford
93	105O/2	Duo Lake Fm	late Middle or Late Ordovician	graptolite	C-089983	Abbott, J.G.	B.S. Norford
94	105O/1	Duo Lake Fm	Middle to Late Ordovician	graptolite	C-089996	Abbott, J.G.	B.S. Norford
95	105O/7	Duo Lake Fm	Lower Ordovician, Arenigian	graptolite	C-089984	Abbott, J.G.	B.S. Norford
96	105O/1	Duo Lake Fm	latest Early to Late Ordovician, latest Arenig-Caradocian	graptolite	C-108102	Abbott, J.G.	B.S. Norford
97	105O/7	Duo Lake Fm	Ordovician	conodont	C-102267	Abbott, J.G.	M.J. Orchard
98	105O/7	Rabbitkettle Fm	Middle Ordovician, late Arenig-Caradocian	conodont	C-102276	Abbott, J.G.	M.J. Orchard
99	105O/7	Rabbitkettle Fm	Middle Ordovician, late Arenig -Caradocian	conodont	C-102278	Abbott, J.G.	M.J. Orchard
100	105O/7	Rabbitkettle Fm	late Early-Middle Ordovician	conodont	C-102269	Abbott, J.G.	M.J. Orchard
101	105O/8	Rabbitkettle Fm	Early Ordovician	conodont	C-089977	Abbott, J.G.	M.J. Orchard
102	105O/7	Rabbitkettle Fm	Early Ordovician	conodont	C-102290	Abbott, J.G.	M.J. Orchard
103	105O/7	Rabbitkettle Fm	Early Ordovician	conodont	C-102311	Abbott, J.G.	M.J. Orchard
104	105P/5	Rabbitkettle Fm	Early Ordovician, Tremadoc - earliest Arenigian	graptolite	C-089990	Abbott, J.G.	B.S. Norford
105	105P/5	Rabbitkettle Fm	Early Ordovician	conodont	C-089968	Abbott, J.G.	M.J. Orchard
106	105O/8	Rabbitkettle Fm	Late Cambrian-Early Ordovician	conodont	C-102303	Abbott, J.G.	M.J. Orchard
107	105O/1	Gull Lake Fm	Early Ordovician, Arenigian	graptolite	C-089982	Abbott, J.G.	B.S. Norford
108	105O/1	Gull Lake Fm	Early Ordovician, Arenigian	graptolite	C-089991	Abbott, J.G.	B.S. Norford
109	105O/8	Gull Lake Fm	Early Ordovician, late Tremadocian or early Arenigian	graptolite	C-089916	Abbott, J.G.	B.S. Norford
110	105O/8	Hess River Fm	Cambrian	protospongia	C-089954	Abbott, J.G.	W.H. Fritz
111	105O/7	Sekwi Fm	early Cambrian	archeocyathid	C-108105	Abbott, J.G.	W.H. Fritz
112	105O/7	Sekwi Fm	early Cambrian	archeocyathid	C-108106	Abbott, J.G.	W.H. Fritz
113	105O/8	Sekwi Fm	early Cambrian	archeocyathid	C-089953	Abbott, J.G.	W.H. Fritz

* Fossil locality not accurate. **All fossil collections including others not listed here are documented in Norford et al., 1993.

Location of Time Stratigraphic Cross Sections



Yukon Mineral Occurrences*

Occurrence #	Map Symbol	Primary Name	Other Name	Status	Primary Commodity	Yukon Mineral Deposit Profile (YGS OF 2005-5)
105O 001		Tom		deposit	lead, zinc, silver, barite	sedimentary exhalative Zn-Pb-Ag (SEDEX)
105O 002		Mactung		deposit	tungsten	W skarn
105O 003		Jeff		unknown	molybdenum	Porphyry Mo (Low F-Type)
105O 004		Alp		showing	gold	Au-quartz veins
105O 011		Ben		showing	zinc	sedimentary exhalative Zn-Pb-Ag (SEDEX)
105O 013		Racicot		deposit	barite	sediment-hosted barite
105O 016		Standard		showing	lead, zinc, silver	polymetallic veins Ag-Pb-Zn+/-Au
105O 019		Jason; Main, South, End		deposit	lead, zinc, silver, barite	sedimentary exhalative Zn-Pb-Ag (SEDEX)
105O 020		Samovar	Tea	deposit	barite	sediment-hosted barite
105O 021		Walt	Cathy	deposit	barite, zinc	sediment-hosted barite
105O 024		Nidd		drilled prospect	barite, zinc	sedimentary exhalative Zn-Pb-Ag (SEDEX)
105O 025		Bremner		drilled prospect		unknown
105O 027		Gary	Gargantua	deposit	barite	sediment-hosted barite
105O 028		Fetch		drilled prospect	barite	sediment-hosted barite
105O 032		Neve	Brick	drilled prospect	gold, silver	Au-quartz veins
105O 033		Kelvin	Bord	prospect	gold	polymetallic veins Ag-Pb-Zn+/-Au
105O 035		Amax		unknown		unknown
105O 036		Fan		showing		unknown
105O 042		Fal		unknown		unknown
105O 043		Sim		showing	tungsten	W skarn
105O 045		Stroshein		showing	barite	sediment-hosted barite
105O 046		Minorco		showing	barite	sediment-hosted barite
105O 047		Bbob		unknown		unknown
105O 048		Nuke		showing	gold, lead, silver	polymetallic veins Ag-Pb-Zn+/-Au
105O 052		Bailes		prospect		sediment-hosted barite
105P 001		Mehitabel		drilled prospect	gold	Cu skarn
105O 022		Tryala		drilled prospect	barite, zinc	sediment-hosted barite
105J 023		Pete		drilled prospect	barite	sediment-hosted barite
105O 060		Hasten		drilled prospect		unknown
105O 061		Fun		unknown		unknown

* Data extracted from the YGS Mineral Occurrence Database in January 2012.

LEGEND

Southwest

CARBONIFEROUS TO PERMIAN

CPU — *MOUNT CHRISTIE FORMATION AND TSICHU GROUP CHERT FACIES undivided*

MISSISSIPPIAN

TSICHU GROUP

MTch — *CHERT FACIES:* well bedded, orange to brown weathering, black chert and dark grey shale. Contains the SAMOVAR barite occurrence and nearby lenses of limestone with barite

UPPER DEVONIAN

EARN GROUP

DPLsh — *PORTRAIT LAKE FORMATION:* *SHALE FACIES:* talus-forming, silver-blue weathering, platy, siliceous shale, minor chert

DPcg — *PREVOST FORMATION:* *CONGLOMERATE FACIES:* dark grey, resistant chert-pebble conglomerate

DPss — *SANDSTONE FACIES:* brown to rusty weathering, dark grey siltstone, silty shale, chert sandstone, granular sandstone

LOWER (?) TO UPPER DEVONIAN

EARN GROUP

DPLsh — *PORTRAIT LAKE FORMATION* undivided: *SHALE FACIES:* talus-forming silver-blue weathering platy, siliceous shale, minor chert

DPLcg — *CONGLOMERATE FACIES:* black to dark blue weathering massive chert-pebble conglomerate. The conglomerate forms discontinous lenses within the Portrait Lake shale facies

CAMBRIAN TO ORDOVICIAN

ЄOG — *GULL LAKE FORMATION*: brown weathering, finely laminated bioturbated grey and olive green shale with variable amounts of tan weathering silty limestone, grey limestone and minor limestone conglomerate. Calcareous strata are more common in the Central Block

NEOPROTEROZOIC TO LOWER CAMBRIAN

HYLAND GROUP

PЄN — *NARCHILLA FORMATION*: maroon, green and brown weathering shale, quartz grit and sandstone

SYMBOLS

- Geological contact; defined, approximate, inferred or covered
- Fault, movement not known; defined, approximate, inferred or covered
- Normal fault (symbol on hanging wall side): defined, approximate, inferred or covered
- Strike slip fault; defined, approximate, inferred or covered
- Thrust fault (symbol on hanging wall side): defined, approximate, inferred or covered
- Anticline: upright, overturned
- Syncline: upright, overturned
- Bedding: upright, vertical, overturned
- Axial plane cleavage; inclined, vertical
- Fold axis
- Fossil locality
- Limit of outcrop
- Limit of mapping
- Landslide
- Bedded barite +/- limestone
- Ice/glacier
- Road, trail
- Border, Yukon-Northwest Territories

North and Northwest

CRETACEOUS

Kg — resistant, blocky, grey weathering, porphyritic to equigranular biotite quartz monzonite and biotite granite. Metamorphic aureoles around the plutons are generally extensive

TRIASSIC

TJ — *JONES LAKE FORMATION:* recessive, dull brown weathering, thin-bedded to thinly laminated calcareous, micaceous sandstone and shale

CARBONIFEROUS? TO PERMIAN

CPMC — *MOUNT CHRISTIE FORMATION:* resistant, dark orange-brown weathering, interbedded greenish grey siliceous shale and recessive green shale

MISSISSIPPIAN

TSICHU GROUP

MCP — *CARIBOU PASS FORMATION*: grey weathering, thick-bedded to massive bioclastic limestone; minor quartz arenite and shale

MTss — *SANDSTONE FACIES:* dark grey weathering, massive to thick-bedded quartz arenite; thin to medium-bedded sandstone and quartz arenite with shale interbeds.The sandstone facies forms stacked, discontinuous lenses within the shale facies and also occurs at the base of the unit and above the Caribou Pass Fm

MTsh — *SHALE FACIES*: recessive brown, blue-brown and dark blue weathering silty shale, shale and siliceous shale with minor sandstone and quartz arenite. Locally includes a basal interval of blue weathering siliceous shale probably equivalent to Unit MTch, but too thin to map separately

UPPER DEVONIAN

EARN GROUP

DI — *ITSI FORMATION:* resistant, brown weathering, thick-bedded, parallel laminated and ripple cross-laminated micaceous sandstone, siltstone and shale. In southwest 105O/1 and southwest 105O/2, brown weathering shale, siltstone and minor sandstone

DF — *PORTRAIT LAKE FORMATION* *FULLER LAKE MEMBER:* talus-forming silver-blue weathering, platy, siliceous shale, minor chert. Thin beds of coarse-grained limestone and platy, grey weathering barite in beds less than 1 m thick occur intermittently near the top of the unit

MIDDLE TO UPPER DEVONIAN

MACMILLAN PASS MEMBER

DMcg — *CONGLOMERATE FACIES:* resistant grey weathering, massive chert-pebble conglomerate with minor sandstone and grit. The conglomerate occurs mainly as a continuous horizon near the top of the MPM but also forms lenses within the shale facies

DMss — *PORTRAIT LAKE FORMATION* *SANDSTONE FACIES:* brown weathering, coarse to medium-grained sandstone, siltstone with lesser chert-pebble conglomerate and shale

DMsh — *PORTRAIT LAKE FORMATION* *SHALE FACIES:* brown weathering, thinly laminated "pinstriped" grey shale and siltstone with lesser chert and quartz sandstone, grit and minor chert conglomerate

LOWER TO MIDDLE DEVONIAN

DN — *NIDDERY LAKE MEMBER:* black to dark blue weathering, thin-bedded chert, cherty argillite, and siliceous shale. North of the Macmillan fault zone, light grey bioclastic limestone forms beds up to several meters thick in upper-most exposures of the unit. Barite and limestone lenses up to 30 m thick are widespread and may represent one or more tectonically dismembered horizons

MIDDLE DEVONIAN

Dv/Di — *MACMILLAN PASS VOLCANICS:* Dv; orange weathering, carbonate-rich mafic flows and volcaniclastic rocks and minor related sedimentary rocks. Di; blocky, resistant, dark grey weathering, coarse-grained gabbro sills and dikes

MIDDLE ORDOVICIAN TO MIDDLE DEVONIAN

OSDu — *SAPPER, STEEL and DUO LAKE FORMATIONS* undivided

UPPER SILURIAN TO MIDDLE DEVONIAN

SDs — *SAPPER FORMATION:* recessive, buff to tan weathering, platy, silty limestone, calcareous black shale. Locally includes lenses of massive grey limestone in 105O/1

MIDDLE TO UPPER SILURIAN

Ss — *STEEL FORMATION:* orange to green weathering, bioturbated, wispy laminated, green shale and mudstone. Thick beds of orange weathering, pyritic dolostone are intermittent

LOWER ORDOVICIAN TO MIDDLE SILURIAN

OSD — *DUO LAKE FORMATION:* brown weathering, medium-bedded, siliceous shale and chert overlain by silver to dark blue weathering, thin-bedded, black chert and siliceous shale. Grades westward to chert equivalent to the Elmer Creek Formation in 105O/7 north of the Macmillan fault zone

UPPER CAMBRIAN TO MIDDLE ORDOVICIAN

ЄOR — *RABBITKETTLE FORMATION:* buff to grey weathering, thin-bedded, silty limestone with minor limestone and grey shale interbeds. Northwestern-most exposures consist of massive to thick-bedded grey and orange weathering limestone

MIDDLE CAMBRIAN

ЄH — *HESS RIVER FORMATION:* blue-brown weathering, siliceous black shale with minor limestone and limestone conglomerate

LOWER TO MIDDLE CAMBRIAN

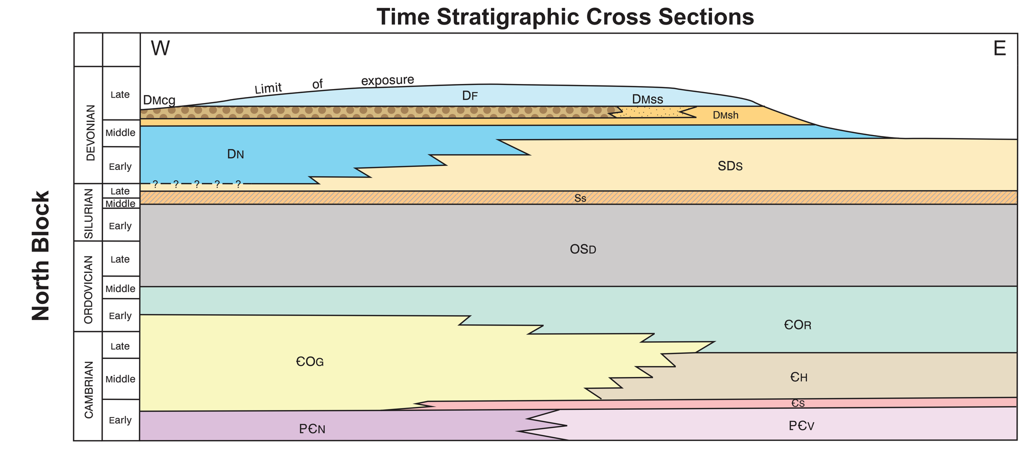
ЄS — *SEKWI FORMATION:* orange, tan and grey weathering, massive to thin-bedded, grey limestone, oolitic limestone, limestone conglomerate, and grey and green shale

NEOPROTEROZOIC TO LOWER CAMBRIAN

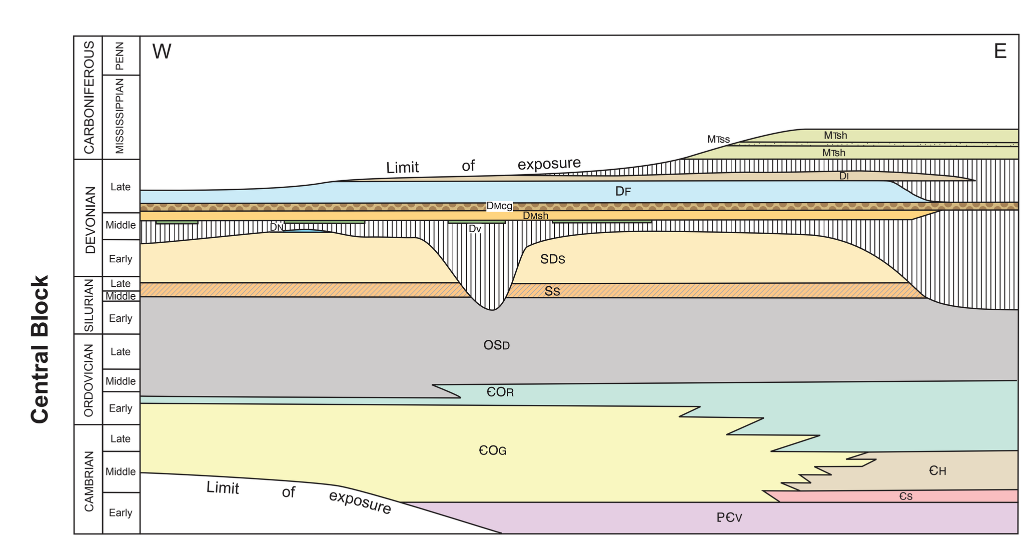
PЄV — *VAMPIRE FORMATION:* resistant, dark brown and grey weathering, grey shale, siltstone and minor quartz arenite. Quartz arenite comprises up to 10% of eastern-most exposures. Widely and irregularly spaced quartz sandstone laminae characterize western exposures

Time Stratigraphic Cross Sections

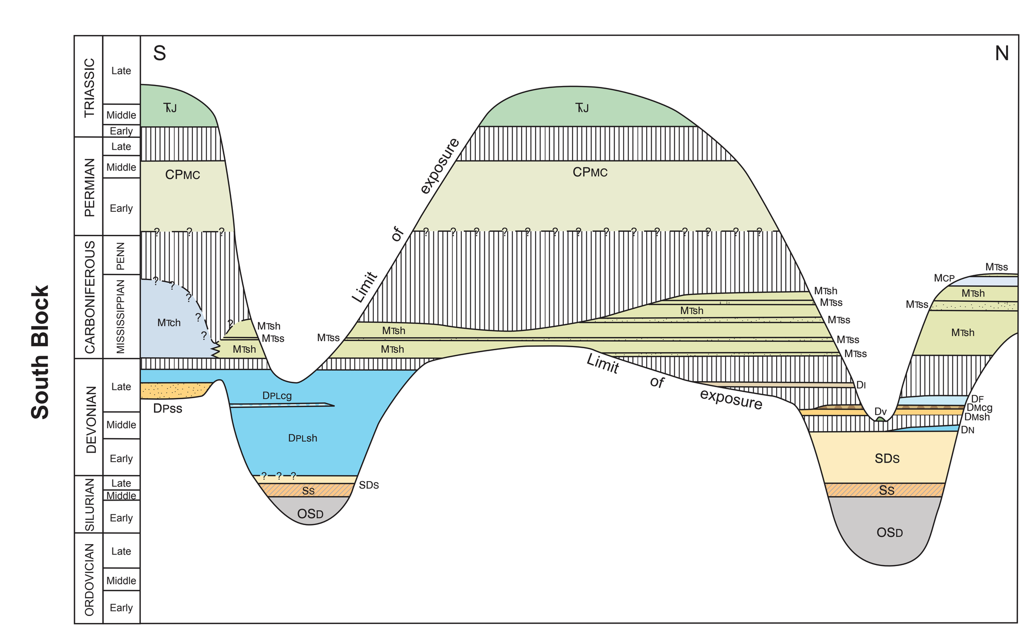
North Block



Central Block



South Block



NOTES

Most of the formations in the Macmillan Pass area are previously defined in adjacent areas by Gordey (1993) and Cecile (2000). Significant reinterpetations have been made only to the stratigraphy of the Gull Lake, Portrait Lake, and Mount Christie formations.

Strata as young as Lower Ordovician are included in the Gull Lake Formation. This interpretation conforms to that of Cecile in the adjacent area to the north, but differs markedly from that of Gordey (1993) to the south, in the Nahanni map area where the Upper Cambrian and Ordovician Rabbitkettle Formation unconformably overlies the Gull Lake Formation. In the Macmillan Pass area, the unconformity is not evident and the Gull Lake Formation is considered to be in part laterally equivalent to the lower parts of the Rabbitkettle Formation.

The Portrait Lake Formation includes two new units and the Macmillan Pass member (MPM) of Gordey (1993) is redefined. The type section of the Portrait Lake Formation consists of a lower interval of blue weathering siliceous shale overlain by brown weathering fine clastic rocks, a middle conglomerate unit (Macmillan Pass Member) and an upper blue weathering siliceous shale interval. The lower and upper siliceous shale units are here named respectively, the Niddery Lake and Fuller Lake members of the Portrait Lake Formation. The brown fine clastic facies together with a sandstone facies located elsewhere and the chert pebble conglomerate have complex stratigraphic relationships with one another and represent a coherent turbidite fan complex. The Macmillan Pass Member here includes all of these facies (units DMsh, DMss and DMcg, respectively). The Prevost Formation consists of a separate turbidite complex that is younger than the MPM. In the area between the MPM and Prevost Formation unnamed chert pebble conglomerate forms lenses within siliceous shale of the Portrait Lake Formation and relationships to the MPM and Prevost Formation are unclear. In this area the siliceous shale of the Portrait Lake Formation cannot be subdivided.

Gordey (1993) included Upper Mississippian chert in the Mount Christie Formation and interpreted it to unconformably overlie the Tsichu Group. Here the Mississippian chert unit contains Tournaisian and Serpukovian fossils and cannot unconformably overly the Tsichu Group of the same age. The Mississippian chert is therefore considered part of the Tsichu Group, and the Mount Christie Formation is considered to be no older than latest Mississippian.

REFERENCES

Abbott, J.G. and Turner, R.J., 1991. Character and paleotectonic setting of Devonian stratiform sediment-hosted Zn, Pb, Ba deposits, Macmillan Fold Belt, Yukon. In: Mineral deposits of the northern Canadian Cordillera, Yukon-northeastern British Columbia, Geological Survey of Canada Open File 2169, p. 99-136.

Atkinson, D. and Baker, D.J., 1991. Geology of the Mactung skarn deposit. *In*: Mineral deposits of the northern Canadian Cordillera, Yukon-northeastern British Columbia, Geological Survey of Canada Open File 2169, p. 243-257.

Cameron, R. S., 1992. Assessment report 093024 on the 1991 diamond drill program, Jason property, Macmillan Pass, Yukon Canada. Phelps Dodge Corporation of Canada, Ltd., 124 p.

Cecile, M.P., 2000. Geology of the northeastern Niddery Lake map area, east-central Yukon and adjacent Northwest Territories. Geological Survey of Canada Bulletin 553, 120 p.

Goodfellow, W.D. and Rhodes, D., 1991. Geology, geochemistry and origin of the Tom stratiform Zn-Pb-Ag-barite deposits. *In*: Mineral deposits of the northern Canadian Cordillera, Yukon-northeastern British Columbia, Geological Survey of Canada Open File 2169, p. 177-241.

Gordey, S.P., 1993. Evolution of the northern Cordilleran miogeocline, Nahanni map area (105I), Yukon and Northwest Territories. Geological Survey of Canda Memoir 428, 214 p.

Norford, B.S., Orchard, M.J., Norris, A.W., Uyeno, T.T., Cecile, M.P., Abbott, J.G., Jackson, D.E., Fritz, W.H., Hofmann, H.J., Nowlan, G.S, and Tipnis, R.S., 1993. Paleontological identifications and correlations, Niddery Lake map-area, N.T.S. 105O and immediately adjacent map-areas. Geological Survey of Canada, Open File 2682, 89 p.

Rhodes, D., 1992. 1991 assessment report 093015, Nidd property, Mayo Mining District, Yukon Territory. Cominco Limited, 57 p.

Turner, R.J.W., 1991. Jason stratiform Zn-Pb barite deposit, Selwyn Basin, Canada (NTS 105O/1). *In*: Mineral deposits of the northern Canadian Cordillera, Yukon-northeastern British Columbia, Geological Survey of Canada Open File 2169, p. 137-175.

ACKNOWLEDGEMENTS

Field work for this project took place intermittently from 1980 through 1991. During that time, the author benefitted from discussions and assistance from people who are too numerous to mention here. In particular, Bob Turner, Mike Cecile, and Steve Gordey generously shared their knowledge of the geology of Niddery Lake and Nahanni map areas. Craig Hart, Kate Grapes, and Larry Ladue (deceased) provided able assistance in the field.

Geology near the Jason and Nidd deposits was compiled from assessment reports by Cameron (1992) and Rhodes (1992). An unpublished detailed map of the Neve occurrence, generously provided by Paul Metcalfe and Colorado Resources, has also been incorporated.

RECOMMENDED CITATION

Abbott, J.G., 2013. Bedrock geology of the Macmillan Pass area Yukon and adjacent Northwest Territories (NTS 105O/1,2 and parts of 105O/7,8 and 105P/4,5) (1:50 000 scale). Yukon Geological Survey Geoscience Map 2013-1.

Any revisions or additional information known to the user would be welcomed by the Yukon Geological Survey.

Copies of this map may be obtained from the Yukon Geological Survey, Energy Mines and Resouces, Government of Yukon, 102 - 300 Main St., Whitehorse, Yukon Y1A 2B5. Email geosales@gov.yk.ca.

A digital PDF (Portable Document File) file of this map may be downloaded free of charge from the Yukon Geological Survey website http//www.geology.gov.yk.ca.

Yukon Geological Survey
Energy, Mines and Resources
Government of Yukon

Geoscience Map 2013 - 1

Bedrock geology of the Macmillan Pass area, Yukon and adjacent Northwest Territories (NTS 105O/1, 2 and parts of 105O/7, 8 and 105P/4, 5)

1:50 000 scale
(Sheet 2 of 2)

by

Grant Abbott

YUKON GEOLOGICAL SURVEY

Yukon
Energy, Mines and Resources