Ver office copies.

105 J.

BOUNDARY INTRUSIONS

(70004)

Sheldon Lake (105 J)

Niddery Lake (105 O)

Sekwi Mountain (105 P)

Nahanni (105 I)

D.C. Findlay, Ph.D

GEOLOGIST

524 BROADVIEW AVENUE
OTTAWA 13, CANADA
(613) 722-1606

BOX 1029
WHITEHORSE, YUKON, CANADA

BOUNDARY INTRUSIONS

(Project 70004)

Outline

Objectives

a. To isolate geochemically active exploration targets in and near acidic intrusions and to conduct ground follow-up work on airborne magnetic anomalies that show patterns generally similar to magnetic anomalies associated with known intrusions.

b. To attempt to trace the Cambrian (?) ore-host rocks of the Hudson Bay M. and S. Tom property northwest along the Yukon-N.W.T. border area.

Method

a. Intrusions

1. Each intrusion should be examined at a number of helicopter landing spots to determine its megascopic petrographic characteristics. Particular attention should be paid to: a) porphyritic textures; b) syenitic (K-feldspar rich) characteristics: evidence of silicic and argillic alteration. Intrusions or intrusive areas that, on the basis of preliminary examination, show evidence of complex or variable lithology should be examined in greater detail. Particular attention should be paid to those bodies or areas that show evidence of [redacted] more than one intrusive phase or stage, and/or that have abundant associated dykes or quartz veins.

2. Contact aureoles should be examined in several places about each intrusion at distances ranging from as close as possible to 1 mile or so from the contact. Attention should be given to limestone or calcareous invaded rocks and skarn occurrences therein prospected and sampled.

3. Stream sampling should be carried out in streams

...../ 2

draining intrusions or intrusive areas. The number and density of of samples will vary according to the size of the intrusion, but, in general, all creeks draining the area underlain by an intrusion should be sampled at 1/4 to 1/2 mile intervals for preliminary assessment. Quick tests to be done for Cu, Pb, Zn and samples to be retained for more complete AA analyses. If practical, streams should be panned at each sample point, and heavies transported to camp for black-light ~~l~~amping. Heavies should be preserved for possible follow-up microscope work.

4. A bedrock geochemical sample profile should be run across ~~each~~ selected intrusions and ~~its~~ their enveloping rocks. The traverses should preferably be oriented across the strike of the enclosing rocks. The number of samples will vary according to the size of the intrusion, but, in general, sample interval should be about 1/4 mile.

b. Magnetic Anomalies

1. Locate on ground.
2. Examine surface geology. Note evidence of intrusive activity (e.g. dyke swarms, quartz veins, pervasive rock alteration) as well as intrusive material.
3. Stream sample creeks draining area.
4. Pan and sample heavies from creeks draining area.
5. Bedrock geochemical profile if evidence of intrusive activity is present.

PROGRAM AND SCHEDULE

AREA 1 (Sheldon Lake - 105J)

Base camp - Sheldon Lake (use Sheldon Lake airstrip?)

7 known intrusions and intrusive areas (excluding Traffic Mountain-Pelly Lakes, but including Itsi Range.

8 magnetic features

Duration- 10 days

AREA 2 (Niddery Lake - 105 O)

Base camp - MacMillan Pass airstrip. Probable fly camp at Emerald or Arrowhead Lake.

21 known intrusions

17 plus magnetic features.

Duration 20 days

Cambrian(?) rocks, MacMillan Pass area.

...../ 3

AREA 3 (Sekwi Mountain - 105 P)

Base camp - MacMillan Pass airstrip

11 known intrusions.

No mag data

Duration - 6 days

AREA 4 (North Nahanni - 105 I)

Base camp - MacMillan Pass airstrip

5 known intrusions

No mag data

Duration - 3 days

AREA 5 (South Nahanni - 105 I)

Base camp - South Nahanni River

5 known intrusions plus tungsten occurrence

No mag data

Duration - 5 days

LOGISTICS and COSTS

Field time	- 44 days
Logistics time	6 days
	50 days

Costs (skeletal)

Helicopter (B-1) - 150 hours @ $155.00/hr.*-	$23,250
Wages (4-man crew)	5,000
Sampling and analyses: stream - $1,500	
bedrock- 3,000	4,500
Camp costs (200 man days @$12.00)	2,400
Fixed wing support	2,000
Consulting fees: 15 days @ $150.00	
10 days @ $ 100.00	3,250
	40,400
Contingencies 10%	4,040
Total	$ 44,440

* includes fuel and positioning(fuel) costs @ $20.00/hr.

NATIONAL TOPOGRAPHIC SERIES — DEPARTMENT OF NATIONAL DEFENCE — *FIRST EDITION* — CANADA, SHEET 105 J

Cretaceous

Granodiorite etc.

Hornfels (after 3)

Ordovician and Silurian

3 — Chert, shale, argillite, limestone, phyllite, chert-pebble conglomerate

Known (mapped) intrusions

Airborne magnetic features; possible intrusions — ground follow-up.

MACMILLAN RIVER

SOUTH MACMILLAN RIVER

ROSS RIVER

PELLY RIVER

Prevost Canyon

Wolf Canyon

Pelly Lakes

Sheldon Lake

Lewis L.

Dragon Lake

Otter Lake

Tay L.

Marjorie Lake

Carolyn Lake

Fortin L.

Mt. Riddell

Sheldon

Traffic Mountain

Surveyed, compiled, drawn and printed by the ARMY SURVEY ESTABLISHMENT R.C.E., 1949-51.
Aerial photography by R.C.A.F., 1949.

Universal Transverse Mercator Projection.

Scale 1 : 250,000
1 Inch to 4 Miles Approximately

Contour interval 500 Feet.
All Elevations in Feet above Mean Sea Level.

TEN THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 9

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

SHEET 105 J

Joins Map 7852G "Niddery Lake"

inches
0 1 2
0 1 2 3 4 5
centimetres

YUKON GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

PRELIMINARY SERIES

SHEET 105 J

DESCRIPTIVE NOTES

During the summer the map-area is accessible by small boats using Pelly, Ross, and South Macmillan Rivers. Many scattered lakes, suitable for float-equipped aircraft, lie within the map-area. In summer the Canol Road is passable for motor vehicles, from the Alaska Highway to Pelly River, opposite Ross River trading post, about 15 miles southeast of the map-area. No bridge suitable for motor vehicles, or no ferry is available for crossing Pelly River. Within the map-area the Canol Road has been abandoned, and is unusable owing to numerous washouts.

During the Pleistocene, most if not all of the map-area was covered with ice, which moved west and northwest along the major valleys.

The lower part of unit 1 (1d) consists mainly of thick-bedded, gritty, quartz-pebble quartzite and interbedded dark shale and slate. In places the quartzite is somewhat micaceous and commonly flecked with rusty ankerite. The fine-grained matrix of some of the quartzite beds is partly limy. Where exceptionally coarse-grained and massive, the outcrops of quartzite and the huge, angular, talus blocks derived from it, resemble granite from a distance. The sequence of green, maroon, and dark shales (1c), which mark a conspicuous and consistent horizon in the region, appear to overlie the quartzites (1d) on the ridge northwest of Wolf Canyon on Pelly River. Intense crumpling in many of the individual outcrops, and numerous repetitions of the green and maroon shales both north and south of Dragon Lake, indicate complex structure in the Proterozoic rocks. Between Pelly and Woodside Rivers, near the eastern edge of the map-area, the green and maroon shales appear to be overlain by phyllite and an interbedded sequence of thin-bedded limy shale and silty limestone. These have been included in unit 1c although they resemble parts of the Cambrian strata in Nahanni map-area.

From Mount Sheldon to Mount Selous (in Tay River map-area), the crystalline limestone (1b) forms conspicuous, but discontinuous, white-weathering outcrops. The limestone is grey to dark grey, and mottled with white patches, wherein the carbonate is coarsely crystalline. It is commonly massive to thick bedded, and in places contains thin bands of thinly laminated, pale greenish grey and dark grey chert.

Outcropping at several places, but best exposed on Traffic Mountain, is a sequence (1a) of light-coloured siliceous rocks consisting chiefly of light grey to whitish quartzite, grey quartzite, and light-coloured chert, together with minor hornfels, skarn, and limestone. These rocks appear to comprise the upper part of unit 1 and are commonly closely associated with, and apparently underlie, Ordovician strata.

The Proterozoic rocks are unconformably overlain by a very thick assemblage of Ordovician and Silurian rocks (3), consisting chiefly of chert and shale. Most of the cherts are grey or black, but greyish green, apple-green, white, pink and red varieties were also noted. A particularly bright, apple-green chert bed, outcropping in the northwest corner of the map-area, is believed to have contributed the rare but distinctive fragments to the Devonian conglomerate more than 100 miles to the south. Some of the black chert weathers white along the bedding planes, and produces, locally, spectacular black and white banding. Most of the shales associated with the cherts are black or dark grey, but some are greenish, and a few are red. The shales are interbedded with the cherts, but the proportions vary. The lower part of the section—probably several thousand feet of strata—is dominantly shaly; the upper part is dominantly cherty. Mixtures of the chert and shale are represented in the siliceous shales found throughout the unit. Although other sediments were noted, such as thin-bedded platy limestone, grey quartzite, and conglomerate, they are rare. In their lack of both thick beds of limestone and volcanic rocks, the cherts of Sheldon Lake map-area differ from most other thick, extensive chert deposits. Near the granitic bodies, especially in the Itsi Range, the argillaceous rocks have been silicified and altered to hornfels, forming deep, rusty-red aureoles around the stocks.

The structure in unit 3 is similar to that in the older rocks. Intense folding and crumpling is characteristic of the shales, and pervasive fracturing is common in the cherts. In places the fractures have been healed by later silicification. Unit 3 is in fault contact with the Proterozoic rocks on South Macmillan River, and apparently unconformably overlies them north of Mount Riddell. The total thickness is not known, but is thought to be about 10,000 feet. Graptolites collected from the unit (partly from outside the map-area), range in age from Lower Ordovician to Silurian.

A dark grey, sandy limestone (4?) outcrops in mostly drift covered Pelly Plateau, near the southern edge of the map-area. As it is more or less on strike with beds north of McEvoy Lake in Finlayson Lake map-area, that contain Middle Devonian fossils, it may be of Devonian age. On the other hand the Middle Devonian rocks are commonly dolomitic, so that unit 4? may not be correlative, but rather belongs to the Devono-Mississippian unit 5. Shell fragments and crinoid stems collected from unit 4? were not identifiable.

Unit 5c is exposed south of Traffic Mountain and west of the Canol Road. It consists mainly of black slaty shale and sandstone, but includes considerable quantities of chert-pebble conglomerate, chert, limestone, limy phyllite, phyllitic limestone, siliceous shale, and quartzite. It is at least 7,000 feet thick in the Pelly Lakes area. High on Traffic Mountain it is in fault contact with unit 1c. No fossils were found in unit 5c in Sheldon Lake map-area, and it is placed in the Devono-Mississippian because of its similarities to strata of that age in Tay River map-area. Some older rocks may be included.

Granitic rocks (11) form stocks in the Itsi Range and south of Pelly Lakes, and minor intrusive bodies elsewhere in the map-area. They are commonly biotite granodiorite, but vary in texture and composition. Locally, they contain large crystals of potassium feldspar and in places, significant amounts of hornblende. Xenoliths are not common. In the Itsi Range, the granodiorite exhibits a gently wavy, nearly vertical jointing. The contacts with the country rock are normally sharp, crosscutting, and dip steeply outward. Silicified rocks, hornfels, and minor pyrite are found near the contacts, but rarely beyond a few tens of feet. The granitic rocks are clearly intrusive. The University of Alberta determined the age of a granodiorite specimen (potassium-argon method on biotite) from the Itsi Range to be about 96 m.y. (Middle Cretaceous).

Quartz and feldspar porphyries (13) of granodioritic composition and commonly of plutonic appearance, outcrop in the southwest corner of the map-area, where they are closely associated with Tertiary volcanic rocks (14). These bodies possibly were feeders to, or intrusive equivalents of the volcanic sequence.

Massive, dark, andesite, dacite, and basalt flows (14) unconformably overlie deformed Palaeozoic strata west of Canol Road. The aggregate thickness exceeds 5,000 feet. Individual flows, although rarely well-defined, appear to be from 10 to 300 feet thick. Pyroclastic rocks and interbedded sediments are very rare in the assemblage. The lower part is mainly andesitic and basaltic, commonly containing feldspar phenocrysts. The upper part is characterized by dark dacites with phenocrysts of quartz and biotite. Only gentle deformation, with maximum dips of about 30°, was noted. The elevation of the unconformity at the base of the volcanic sequence varies through about 2,000 feet. This may be accounted for by faulting and deformation, but probably, the flows were extruded onto a surface of at least moderate relief.

No mineral deposits of economic significance are known in the area. Barite was noted at several places in the cherts and shales (3) north of South Macmillan River. It was found north of the small stock north of the river, in a dark grey massive bed of unknown thickness, and, above this bed, in concretionary nodules in chert. The laminae in the chert bend around the nodules, which are commonly about an inch in diameter. Barite and several rare barium silicates are known to exist in the cirque southeast of Wilson Lake on the east edge of the map-area.

PRINTED BY THE SURVEYS AND MAPPING BRANCH

-1961
OGY
N LAKE
ERRITORY

LEGEND

Road (abandoned) . . . . . ========
Horizontal control point . . . . . △

MAP 12-1961
SHELDON LAKE
YUKON TERRITORY
SHEET 105 J

NATIONAL TOPOGRAPHIC SYSTEM 1:250,000 **CANADA** FIRST EDITION SHEET 105-O

Refer to this Map as:-	105-O EDITION 1 ASE SERIES A 502

CRETACEOUS

14 — Granodiorite, quartz monzonite

DEVONO-MISSISSIPPIAN and EARLIER

12 — Shale, argillite, chert, chert-arenite and chert-pebble conglomerate; includes Minor Ord-Silurian graptolitic shale

DEVONO-MISSISSIPPIAN (?)

11 — Dark shale and argillite

ORDOVICIAN TO DEVONIAN

9 — Lt. grey, thick bedded dolomite and limestone

CAMBRIAN AND PRECAMBRIAN

8 — Orange & grey-weathering thin-bedded limestone, dolomite and quartzite; includes Sekwi Formation.

HADRYNIAN

7 — 'GRIT UNIT' quartzite, shale, conglomerate

Known (mapped) intrusions

Paramagnetic features; possible intrusions; ground follow-up.

Thrust fault; dip in direction of teeth.

GRID ZONE DESIGNATION	100,000 M. SQUARE IDENTIFICATION
9V	UA VA / UV VV, 700, 40

TO GIVE A REFERENCE TO NEAREST 1000 METRES

EXAMPLE: HORIZONTAL CONTROL POINT

SQUARE: Read letters of 100,000 m. square — UA

EASTING: Read number on grid line immediately to left of point. Estimate tenths of a square from this line eastward to point. — 9, 6, 96

NORTHING: Read number on grid line immediately below point. Estimate tenths of a square from this line northward to point. — 3, 9, 39

MILITARY GRID REFERENCE UA9639 (to nearest 1,000 metres)

If reporting beyond 18° in any direction, prefix Grid Zone Designation as: 9VUA9639

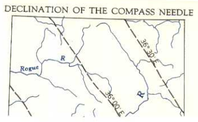
TEN THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 9

inches 0 1 2 — centimetres 0 1 2 3 4 5

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

DECLINATION OF THE COMPASS NEEDLE 1957



Produced and printed by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF MINES AND TECHNICAL SURVEYS, 1958, from air photographs taken in 1949 and 1954.

Universal Transverse Mercator Projection

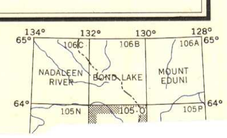
Contour interval 500 Feet
Elevations in Feet above Mean Sea Level
North American Datum 1927.

REFERENCE

Wagon or winter road
Trail or portage

REFERENCE

Streams: intermittent or dry
Glacier or snowfield



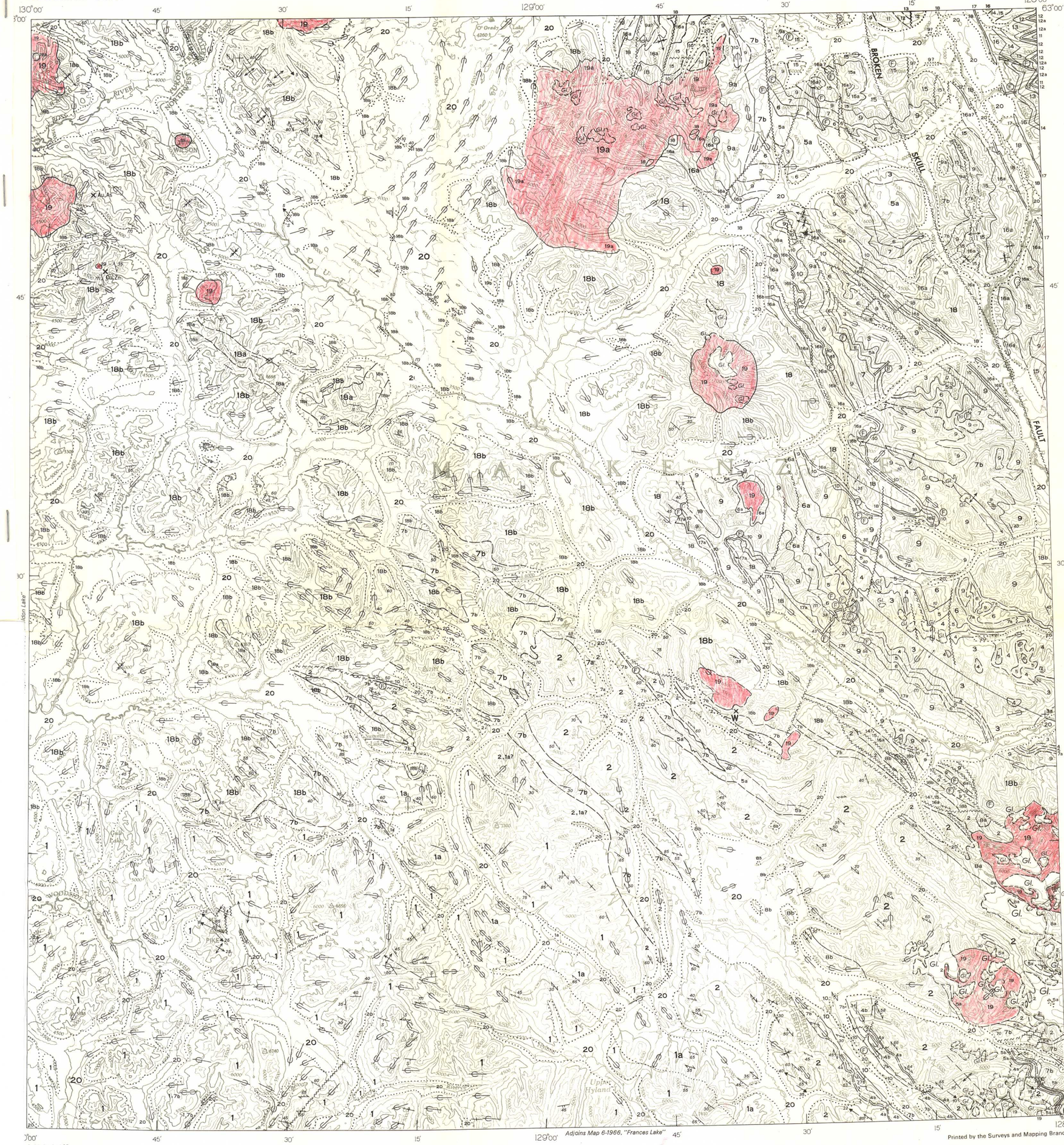
NIDDERY LAKE

YUKON TERRITORY - NORTHWEST TERRITORIES

GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES

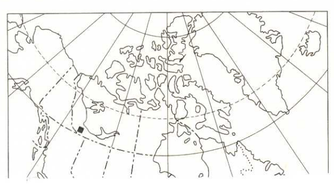
PRELIMINARY SERIES

105-I



Published 1968
Copies of this map may be obtained from the
Director, Geological Survey of Canada, Ottawa

Printed by the Surveys and Mapping Branch



MAP 8-1967
(SUPERSEDES PART OF MAP 14-1961)

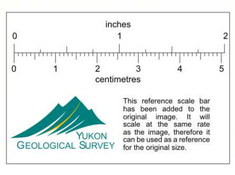
GEOLOGY

NAHANNI

DISTRICT OF MACKENZIE AND YUKON TERRITORY

Scale 1:253,440
1 inch to 4 miles

Miles 4 0 4 8 12 Miles



DESCRIPTIVE NOTES

Access to the southeast corner of the area is provided by a 200 mile, all-weather gravel road linking Watson Lake on the Alaska Highway with Canada Tungsten mine, and lakes suitable for float-equipped light aircraft at the head of Flat River valley.

The area has been extensively glaciated to at least 6,500 feet elevation. During one stage of glaciation an ice centre probably formed in the western part of the area, mostly southwest of the drainage divide, away from which ice at the higher levels moved to the northeast, west and southwest. At lower levels ice principally followed the present stream drainage.

Two broad divisions of unit 1 are recognized; a lower heterogeneous succession of argillaceous to pebbly rocks at least 9,000 feet thick and an upper persistent argillaceous sequence of dominantly maroon and green shale totalling perhaps 3,000 feet. Where best exposed in the vicinity of Mount Pike the lower division consists about equally of calcareous, gritty, feldspathic sandstone ranging to pebble conglomerate and greenish grey commonly silty argillite and slate. These rocks form separate members as much as 1,000 feet thick or are interbedded in varying proportions. Rarely they include thin beds of dark grey, fine-grained, impure limestone. Lowermost exposed strata, totalling almost 3,000 feet, consist of medium- to thick-bedded, coarse, gritty, feldspathic sandstones with thin interbeds of fine-grained sandstone and siltstone.

Owing to complex structure and lack of stratigraphic divisions, the thickness of unit 2 is uncertain but is a minimum of 8,000 feet in the southeast corner of the map-area. The unit consists dominantly of brown to red-brown-weathering, grey, greenish, and brownish grey slates and phyllite but becomes progressively richer in siltstone and fine-grained quartzite northeast of Flat River and near South Nahanni River probably passes laterally into unit 3.

Unit 3 is best exposed in an open anticline northeast of South Nahanni River where it consists of about 4,000 feet of red-brown-weathering interbedded siltstone, fine-grained quartzite and slate underlain by several hundred feet of buff-weathering massive dolomite (3a) exposed in the core of the anticline. Unit 3 is unfossiliferous but is conformable with overlying silty carbonates of Early Cambrian age.

Unit 4 is divisible into two lower silty carbonate members and an upper member of coarsely crystalline buff-weathering dolomite totalling about 700 feet. The descriptive term "swiss-cheese" has been informally applied to the lowermost division by Green and Roddick (1961)[1] on account of the distinctive weathered appearance which is produced by solution of discontinuous limestone layers, lenses and pods from within massive, more resistant siltstone. This member grades upward through a more regularly bedded transitional unit at least 200 feet thick into an upper member of massive grey to pinkish buff-weathering crystalline dolomite. Early Cambrian trilobites were found in the lowermost beds.

Unit 5 is an extremely varied thin-bedded sequence of brownish and orangish brown-weathering arenaceous, dolomitic, and argillaceous rocks. The lower part consists predominantly of thick- to thin-bedded quartzite, silty dolomite and dolomitic sandstone with minor dolomite and fossiliferous silty shale. The upper part is largely thin-bedded to laminated purple siltstone, silty argillite, green and brown, possibly tuffaceous, silty argillite and purple shale. Features indicative of shallow water deposition, such as mud-cracks, ripple-marks, crossbedding, and abrupt local facies changes are abundant. The top is marked by a conspicuous member of bright buff-orange and yellow-weathering, finely crystalline, in part silty, dolomite. Olenellus gilberti, present in the lower beds, indicates an Early Cambrian age for at least the greater part of unit 5.

Unit 6 is mainly thin-bedded to platy and recessive-weathering silty carbonate with some resistant limestone beds in the middle and upper parts. Rhythmic layering of limestones and silty dolomites is typically irregular and undulatory. Numerous fossil collections throughout the unit have been assigned to one Late Middle Cambrian zone, that of the Bathyuriscus-Elrathina fauna. As three major faunas representing the lower half of Middle Cambrian time are missing between this zone and that of Olenellus in unit 5, a disconformity is suspected beneath unit 6.

Throughout much of South Nahanni anticline unit 7 contains a basal red-bed sequence (7a), as much as 500 feet thick that unconformably overlies unit 6 and in large part probably represents recycled Lower Cambrian arenites. The unconformity is markedly angular near the anticline but farther north becomes disconformable and the basal sandstone is much thinner, uncoloured and locally absent. Fossils collected in the adjoining map-area to the east date the unconformity as pre-Franconian.

Unit 9 consists mainly of uniform, generally light grey-weathering thick-bedded, light and dark grey dolomite, but includes abundant, thinner-bedded commonly impure limestone in the northeast part of the area. Oolitic and pisolitic beds are common in the lower part and minor sandy dolomite, dolomitic bioclastic limestone and locally quartzite occurs near the base. Nodules and irregular, discontinuous bands of black chert are fairly common in dark grey dolomite beds within the middle part of the unit. At least 2,600 feet of strata are present on the southwest limb of Nahanni anticline and as much as 5,000 feet on the northeast limb. Unit 9 is mainly equivalent to the Sunblood Formation described previously in adjacent regions to the east[2, 3] but locally, at the top, includes some dark grey dolomite of Silurian age that is probably correlative with the Whittaker Formation.

Near Broken Skull River unit 10 consists of dark grey to black, fissile to flaggy, argillaceous limestone, interbedded in the middle part with black chert and minor black dolomite. The uppermost beds weather light to medium brown. Southwestward the middle, then the upper and lower parts of the unit change facies into silvery grey-weathering dark brown to black graptolitic shale that comprises almost the entire unit near the east limb of Nahanni anticline. Maximum thickness is less than 1,000 feet. This unit appears to be a shale facies equivalent to the Whittaker Formation.

The Devonian formations, units 11, 12, 13 and 14, which are present only in the northeast corner of the area, have been previously described by Gabrielse et al.[3] in the adjoining map-area to the east. Unit 15 includes black platy limestone equivalents of these carbonate units (11 to 14) and possibly shales of unit 10. As much as 3,000 feet of strata are exposed east of Broken Skull fault.

Unit 16a is a maximum of about 2,000 feet thick. Near Broken Skull River it contains fossiliferous platy limestone typical of the Headless Formation (16) at the top, but is largely unfossiliferous, light brown-weathering, impure, platy limestone similar to the Funeral Formation, a lateral equivalent of the Arnica and Landry Formations in Mackenzie Mountains to the east.

Unit 17a forms prominent light grey-weathering bluffs northeast of South Nahanni River. The rock is chiefly massive, bioclastic limestone with abundant crinoid, algal and coral forms, locally much altered to medium-grained dolomite. Fossils from the unit are assigned an age of Lower or Middle Devonian. The stratigraphic position and lithologic similarity suggests correlation with the Nahanni Formation (17) to the northeast.

Black shales, argillite and chert principally of Devono-Mississippian age (18b) total several thousand feet west of South Nahanni River. Minor amounts of graptolitic rocks (unit 10) known to be present are not differentiated due to similar lithology, lack of definitive marker beds, and intense deformation. A combined thickness is unknown but at least 3,000 feet and probably much more of Devono-Mississippian strata (18) occur.

Granitic intrusions (19), are typically discordant, non-foliated, essentially free of inclusions, and have well defined, steeply dipping contacts. All contain, in part, abundant megacrysts of potash feldspar. Proportion of mafic minerals vary appreciably from dominantly biotite in the southeast corner of the area to dominantly hornblende in the northwest and northern parts. Metamorphism and deformation of the wall-rock is conspicuously limited.

Regional fold axes trend dominantly northwest and intensity of folding increases generally from northeast to southwest and south. Folds are open and upright in the area of well stratified units to the northeast, tightly compressed and vertical to slightly overturned in the area of dominantly pelitic rocks southwest of South Nahanni River, and subisoclinal, strongly overturned to the northeast near the south border of the map-area. Local structural complexity, involving variations in trend, plunge and sense of overturning of folds, as at Mount Pike, is attributed to original inhomogeneities of the strata combined with a non-pervasive or non-penetrative structural style. No evidence of superposed folding was observed. Near Flat River, a well developed, axial plane, slaty cleavage associated with the regional folding clearly predates granitic intrusion suggesting a post Devono-Mississippian – Pre-middle Cretaceous age for the deformation. The two prominent reverse faults in the northeast part of the area, that intersect on Broken Skull River, appear to have appreciable left-lateral components to account for offset of facies and deflection of major fold trends.

Most intrusive bodies in the area have some indications of mineralization adjacent to them especially in associated carbonate rocks.

[1]Green, L. H., and Roddick, J. S.: Nahanni map-area; Geol. Surv. Can., Map 14-1961 (1961).

[2]Douglas, R. J. W., and Norris, D. K.: Virginia Falls and Sibbeston Lake map-areas, Northwest Territories; Geol. Surv. Can., Paper 60-19 (1960).

[3]Gabrielse, H., Roddick, J. A., and Blusson, S. L.: Flat River, Glacier Lake, and Wrigley Lake, District of Mackenzie and Yukon Territory; Geol. Surv. Can., Paper 64-52 (1965).

MAP 8-1967
NAHANNI
DISTRICT OF MACKENZIE
AND YUKON TERRITORY
105-I

LEGEND

CENOZOIC

PLEISTOCENE AND RECENT

20 Unconsolidated glacial and alluvial deposits

MESOZOIC

CRETACEOUS

19 Medium-grained biotite, biotite-hornblende and hornblende-quartz monzonite, granodiorite and minor granite; commonly porphyritic; 19a, biotite-bearing hornblende granite; 19b, quartz latite porphyry

PALAEOZOIC

DEVONIAN AND (?) MISSISSIPPIAN

18 Black shale and argillite, in part light grey-weathering, minor brown sandstone, siltstone and light to dark grey-weathering banded chert; 18a, dark grey to brown chert pebble conglomerate, chert sandstone and siltstone; 18b, undivided 18, 18a and minor 10

MIDDLE DEVONIAN

17 NAHANNI FORMATION: resistant, fine- to medium-grained light grey-weathering limestone; 17a, fine- to coarse-grained light grey limestone, in part bioclastic and dolomitic; correlation uncertain

16 HEADLESS FORMATION: buff-brown-weathering argillaceous and silty fine-grained limestone, platy to thin-bedded; minor calcareous shale and resistant light grey-weathering massive limestone; 16a, probably includes Funeral Formation; 16b, resistant light grey-to white-weathering crinoidal limestone and grey dolomite, massive and thick bedded

15 Dark grey-to black-weathering very fine- to crypto-grained platy limestone; in part flaggy and thin-bedded; minor black chert; rouge hematite-rich bands and laminations common; 15a, includes much light and medium grey dolomite, mainly correlative with the Arnica and Landry Formations but includes rocks as old as Upper Ordovician

14 LANDRY FORMATION: light silvery grey-weathering fine-grained dark grey limestone, thin- to thick-bedded; in part crinoidal and massive

13 ARNICA FORMATION: dark grey, well-bedded dolomite; in part interbedded light and dark grey

LOWER DEVONIAN

12 SOMBRE FORMATION: light and medium grey banded dolomite; 12a, dark grey dolomite

SILURIAN AND DEVONIAN

11 DELORME FORMATION: buff, orange, light grey-weathering dolomite and limestone

ORDOVICIAN AND SILURIAN

UPPER ORDOVICIAN AND SILURIAN

10 Black graptolitic shale, dark grey to black, fissile to flaggy, argillaceous limestone; minor black chert, cherty argillite and dolomite

MIDDLE ORDOVICIAN TO SILURIAN

9 Light and medium grey, thick-bedded, medium-grained dolomite and massive, light to medium grey-weathering, dark grey, fine-grained limestone, in part argillaceous, silty and dolomitic, platy and buff- or pink-weathering; 9a, mainly limestone

CAMBRIAN AND (?) ORDOVICIAN

8 Undifferentiated units 4, 5, 6 and 7; 8a, mainly 6 or 7; 8b, mainly 4 or 5

UPPER CAMBRIAN AND (?) ORDOVICIAN

7 Irregularly banded blue-grey-weathering, dark grey, fine-grained limestone; buff- to orange-weathering dolomitic siltstone; minor flaggy and thin-bedded orange-weathering silty dolomite; locally includes sandy dolomite and quartzite at base; 7a, red, orange, and brown-weathering sandstone, sandy dolomite and quartzite locally includes 7; 7b, correlation uncertain, possibly includes 6

CAMBRIAN

MIDDLE CAMBRIAN

6 Grey and brown siltstone, limestone and orange-weathering silty dolomite; platy to thin-bedded; 6a, possibly includes 7

LOWER AND (?) MIDDLE CAMBRIAN

5 Brown- to orange-weathering thin-bedded quartzite, siltstone dolomite and shale; minor green and purple, probably tuffaceous shale and argillite in upper part; 5a, undivided 4 and 5; 5b, bright yellow- and orange-weathering silty and sandy dolomite; 5c, buff-weathering dolomite, silty and sandy dolomite, minor sandstone and shale

LOWER CAMBRIAN

4 Light grey- to buff-weathering, massive dolomite, interbedded buff and orange-weathering dolomitic siltstone and grey silty limestone; 4a, "swiss-cheese" limestone; 4b, in part equivalent to 5

CAMBRIAN AND EARLIER

3 Brown weathering, grey to green interbedded siltstone, fine-grained quartzite and slate; 3a, buff-weathering light grey dolomite

2 Brown to red-brown-weathering vari-coloured slates and phyllites; minor siltstone and fine-grained quartzite; in part equivalent to 3

1 Grey- and buff-weathering gritty feldspathic quartzite, quartz and feldspar pebble conglomerate, sandstone, grey, green and maroon shale and phyllite; minor limestone; 1a, mainly grey and green shale and phyllite

Geological boundary (defined, approximate, assumed)

Bedding, tops known (horizontal, inclined, vertical)

Bedding, tops unknown (inclined)

Bedding (estimated attitudes, may include foliation; dip: g, gentle; m, medium; s, steep)

Foliation (inclined, vertical)

Lineation (inclined)

Fault (defined, approximate, assumed)

Anticline (defined, approximate; arrow indicates plunge)

Syncline (defined, approximate; arrow indicates plunge)

Glacial striae (direction of ice movement known, unknown)

Fossil locality Ⓕ

Mineral prospect or occurrence ×W

Location of measured section

GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES

AEROMAGNETIC SERIES

SHEET 105 O

132°00′ 30′ 131°00′ 30′ 130°00′

64°00′

45′

30′

15′

53°00′

63°00′

Joins Map 7853G "Lansing"

Joins Map 7838G "Sheldon Lake"

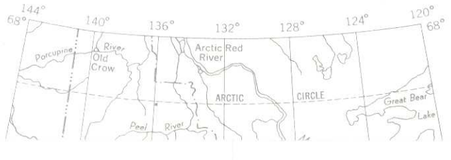
MAP 7852 G

NIDDERY LAKE

Flight altitude: nominally 1000 feet above ground level where terrain permitted.

Airborne Magnetic Survey, April 1966 to June 1968, by Aero Photo Inc., Québec, four-mile map compiled from one inch to one mile geophysical maps published by the Department of Energy, Mines and Resources.

No correction has been made for regional variation.



inches
0 1 2
0 1 2 3 4 5
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

NATIONAL TOPOGRAPHIC SERIES

DEPARTMENT OF NATIONAL DEFENCE
ARMY SURVEY ESTABLISHMENT

FIRST EDITION

Refer to this Map as: 105 P EDITION 1 ASE SERIES A 502

CANADA, SHEET 105 P

SEKWI MOUNTAIN
NORTHWEST TERRITORIES – YUKON TERRITORY

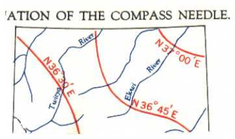
Surveyed, compiled, drawn and printed by the ARMY SURVEY ESTABLISHMENT R.C.E., 1950-54.
Aerial photography by the R.C.A.F. 1949.

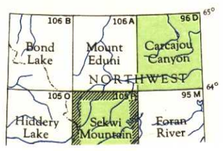
Universal Transverse Mercator Projection.

Contour Interval 500 Feet
All Elevations in Feet above Mean Sea Level.

North American Datum 1927

'ATION OF THE COMPASS NEEDLE. 1954





inches
0 1 2
0 1 2 3 4 5
centimetres

YUKON GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

GRID ZONE DESIGNATION 9V
100,000 M. SQUARE IDENTIFICATION
VA WA
VV WV
700
50

IGNORE the SMALLER figures of any grid number; these are for finding the full coordinates. Use ONLY the LARGER figures of the grid number, example: 46 0000

TO GIV THIS SH

SAMPLE POINT CAE

1. Read letters identifying square in which the po
2. Locate first VERTICAL point and read LARGE line either in the top o on the line itself. Estimate tenths from q
3. Locate first HORIZONT point and read LARGE l line either in the left o on the line itself. Estimate tenths from q

SAMPLE REFERENCE

If reporting beyond 18° prefix Grid Zone Design

TEN THOUSAND
UNIVERSAL TRANSVERSE
ZONE 9

CANADA

NATIONAL TOPOGRAPHIC SERIES

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

FIRST EDITION

Refer to this Map as: 105 I EDITION 1 ASE SERIES A 502

CANADA. SHEET 105 I

inches
0 1 2
0 1 2 3 4 5
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

Surveyed, compiled, drawn and printed by the ARMY SURVEY ESTABLISHMENT R.C.E., 1949-54
Aerial photography by the R.C.A.F. 1949
Universal Transverse Mercator Projection.

Contour interval 500 Feet
All Elevations in Feet above Mean Sea Level.

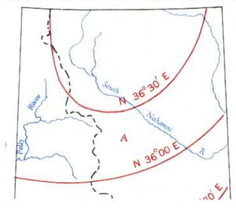
NAHANNI

YUKON TERRITORY – NORTHWEST TERRITORIES

Scale 1 : 250,000
1 Inch to 4 Miles Approximately.

Miles 5 0 5 10 15 20 Miles
Kilometres 5 0 5 10 15 20 25 30

DECLINATION OF THE COMPASS NEEDLE, 1954



REFERENCE

Road, Hard Surface, All Weather	More than 2 Lanes / Route No. 26 / 2 Lanes
" Loose Surface, All Weather	2 Lanes Wide or More
" " " Less than 2 Lanes.	All Weather / Dry Weather
Cart Track	Cart Track
Trail	Trail

REFERENCE

Horizontal Control Point	Spot Elevation, in feet .124
Contours, Elevation —5500— 5000	Wooded Areas
" Depression —5000— 4500	Swamp or Marsh