

ROYALE MINERAL CLAIM GROUP

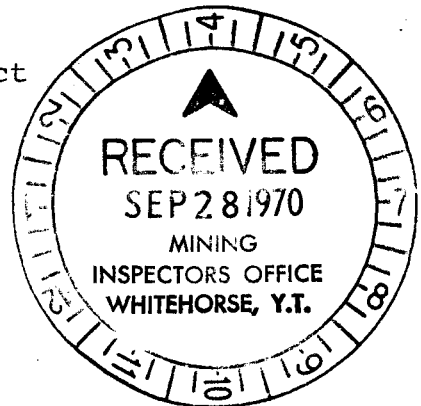
REPORT ON GEOLOGICAL MAPPING OF CLAIMS

Whitehorse Mining District
Yukon Territory

Longitude: 139°00'W

Latitude : 62°47'N

N.T.S. - 115-J-14



Field work done during period
July 16th - July 24th, 1970

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$ 2757.67

By:

KENNETH M. DAWSON

Regional Geologist or
District Mining Engineer

ATLAS EXPLORATIONS LIMITED

Considered as representation work under
Section 53 (1) Yukon Quartz Mining Act.

September, 1970

Commissioner of Yukon Territory

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LIST OF CLAIMS

<u>Claim No.</u>	<u>Grant No.</u>	<u>Date Recorded</u>
ROYALE 1-8	Y38090-Y38097	Sept. 24, 1969
ROYALE 9-16	Y380-98-Y38105	Sept. 24, 1969
ROYALE 17-24	Y38106-Y38113	Sept. 24, 1969
ROYALE 25-32	Y38114-Y38121	Sept. 24, 1969
ROYALE 33-40	Y38122-Y38129	Sept. 24, 1969
ROYALE 41-48	Y38130-Y38137	Sept. 24, 1969
ROYALE 49-56	Y38138-Y38145	Sept. 24, 1969
ROYALE 57-64	Y38146-Y38153	Sept. 24, 1969
ROYALE 65-66	Y38154-Y38155	Sept. 24, 1969

Total number of Claims = 66

ATLAS EXPLORATIONS LIMITED

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

ROYALE MINERAL CLAIM GROUP REPORT ON GEOLOGICAL MAPPING OF CLAIMS

INTRODUCTION

In July 1969, Kenneth Dawson and Colin Godwin, geologists with Atlas Explorations, landed upon a rounded hill four miles west of Casino Mines Ltd. in the course of helicopter reconnaissance of the Dawson Range. Several types of intrusive rock were observed, and similarities to Patton Hill at Casino were noted.

In early September 1969, Atlas geologist and Vice-President Gordon Davis examined the area and noted disseminated pyrite and sericitic alteration. On the basis of this geological evidence and the occurrence of an aeromagnetic high near the hill, a decision was made to stake sixty-six ROYALE mineral claims for Atlas Explorations in the area.

Work done on the ROYALE claims in 1969 includes geochemical soil sampling and reconnaissance geologic mapping. In July 1970, line-cutting, soil sampling and geologic mapping was

carried out on the ROYALE claims.

LOCATION AND ACCESS

The ROYALE claims are in the Dawson Range in western Yukon, eight miles south of the abandoned settlement of Coffee Creek on the Yukon River 95 miles upstream from Dawson. Location of the claim group is given on Location Map, Appendix I. The claims are located four miles west of Casino Mines Ltd. on a ridge between the headwaters of Coffee Creek and Excelsior Creek. The claims fall mainly in the southeastern corner of claim sheet 115-J-14, with a few claims overlapping to 115-J-15. The claim group is depicted on Key Map, Appendix II.

Access to claims was attained by helicopter during 1969 and 1970. Men and supplies were flown by fixed-wing aircraft to the nearby Casino, Polaris and Uranus airstrips, and then to the property by helicopter.

REGIONAL GEOLOGY

The ROYALE claims are located in the Dawson Range, which consist of a northwest-trending belt of isolated mountains, 6000 ft. or more high, standing above the undulating upland surface of the Yukon Plateau. The rocks underlying the

TABLE OF GEOLOGIC FORMATIONS

TERTIARY

- 5 *Latite and dacite porphyry dykes, diabase dykes.*
- 4 *Alaskite dykes.*
- 3 *Granite. Medium to coarse grained subporphyritic, pink-grey granite, & related dykes.*

LATE CRETACEOUS

- 2 *Klotassin Intrusions*
- 2a *Medium to coarse grained biotite granite, quartz monzonite & alaskite.*
- 2b *Fine to medium grained granodiorite and monzonite(?).*
- 2c *Medium to coarse grained hornblende granodiorite.*

PRECAMBRIAN

- 1a *Yukon Group*
- 1a *Quartz-hornblende - plagioclase gneiss.*
- 1b *Granitic gneiss.*
- 1c *Amphibolite.*
- 1d *Marble.*

NOTE: NUMBERS OF FORMATIONS
CORRESPOND TO GEOLOGIC
MAP OF ROYALE CLAIMS,
APPENDIX.

Dawson Range include a basement of old metamorphic rocks, the Yukon Group, and early intrusives. The basement is overlain by the Mesozoic Mount Nansen volcanic group and also Mesozoic sedimentary units in the Carmacks area. The Yukon and Mount Nansen groups form the roof pendants and walls of the granitic to granodioritic Klotassin batholith that constitutes the core of the Dawson Range. Large areas of these Cretaceous and older rocks are covered by intermediate to basic flows of the Early Tertiary Carmacks Volcanics. Younger Tertiary acidic intrusive and extrusive bodies occur as small stocks, dykes and flows in the Dawson Range and along its flanks.

Copper, molybdenum, lead and zinc mineralization is associated mainly with these Tertiary intrusions, and to a lesser degree with Cretaceous intrusives.

Regional geologic data is drawn, in part, from Geological Survey of Canada Preliminary Map 44-34 and Map 340A.

GEOLOGY OF ROYALE CLAIMS

A geologic map of ROYALE claims, based upon mapping by Donald Hersak, is given in Appendix III. Survey control for geologic mapping was attained by a chained base line, Azimuth 120° , and grid lines spaced at 1000 ft. intervals normal to the base

line. The grid was established primarily for a soil sampling program. Geologic data was also gathered, compiled and interpreted by Atlas geologists Aaro Aho, Gordon Davis, John Brock and Kenneth Dawson.

Yukon Group

The basement rocks exposed in the area are a series of coarsely- to finely-foliated high grade gneisses ascribed to the Yukon Group of probable Precambrian age.

Granitic gneiss that crops out south and west of the claims constitutes an elongate northwest-trending septum of metamorphic rock enclosed by Klotassin intrusions on the north and south. The inferred contact trends northwestward across the southern part of the claim group, defined mainly by felsenmeer and float. Granitic and granodioritic gneiss give way eastward to coarse grained granodiorite. The contact zone on ROYALE #51, 52 is more clearly defined. Here, at the southern border of the claims, gneiss is brecciated and shows intense argillic alteration. Limonite and tourmaline are recognized, but no sulfides are seen. Soil geochemical samples, taken in the vicinity of the altered breccia, are not anomalous in Cu, Pb, Zn and Mo. An aeromagnetic high immediately north of the brecciated zone is elongated northwestward, and probably reflects

disseminated magnetic minerals along the granodiorite-gneiss contact.

At the northwest corner of the claim group, a wedge of fine-grained laminated quartz-feldspar-biotite/hornblende gneiss is cut by several intrusive rock units. The gneiss outcroppings mark the southeastern limit of a gneiss septum parallel to the previously-described body, and intruded on the north by a large dyke of young medium-grained granite. The contact with young granite on the east is marked by gossans and rusty granitic float. Contact with older Klotassin granodiorite is mainly inferred from felsenmeer and float blocks, some of which contain pyrite, limonite and argillic alteration. No soil geochemical anomalies were detected in these contact zones.

Klotassin Intrusions

The major portion of the claims is underlain by granodiorite of the Klotassin Batholith. The unit in the vicinity of Casino Mine yields a potassium-argon age of approximately 90 million years, or Late Cretaceous (C. Godwin personal communication, 1970). Grain size is variable, ranging from a fine-grained equigranular phase to medium-grained with coarse-grained, euhedral hornblende laths. The fine-grained phase crops out at the top of a prominent rounded hill in the northeast portion of the claims.

The predominant mafic mineral is hornblende, but biotite occurs in small amounts and occasionally constitutes 40% of the mafic content.

Fine-to coarse-grained hornblende granodiorite in vicinity of ROYALE claims gives way to quartz monzonite and granite of similar texture westward, south of the VEGAS claims. These units probably are all phases of the Klotassin Batholith, and may be intergradational.

Tertiary Intrusions.

Granodiorite is intruded by an elongate stock of coarse-grained granite. The stock is approximately two miles long where it crops out north of the claims. The southern boundary of the stock lies within the claims, as evidenced by large slide boulders found half-way up the prominent rounded hill on the northerly slopes and west of it.

The granite is sub-porphyrific with abundant euhedral crystals of orthoclase up to 1½ inches in length. The stock is cut by numerous small aplitic dykes. Dykes of medium-grained granite intrude the granodiorite near the boundaries of the stock and probably are associated with fracturing of the host rock during intrusion of the stock.

This granite pluton is distinctly different in appearance and discordant structures to the Klotassin granite to the northwest. It may well be related to similar Tertiary plutons at Casino, and Home Creek. Radiometric dating of similar rock at Casino yields an age of 70-75 million years, or Early Tertiary (Ibid.).

The granite - Yukon Group contact zone is intruded by large latite and dacite dykes of similar northwest orientation. These dykes are the youngest intrusions in the area. Texturally, they vary from porphyritic to nearly equigranular. From outcrop relationships and air photo interpretation it appears that an east-west to northwest trend is most common, though the trends are generally quite variable.

Mineralization and Alteration

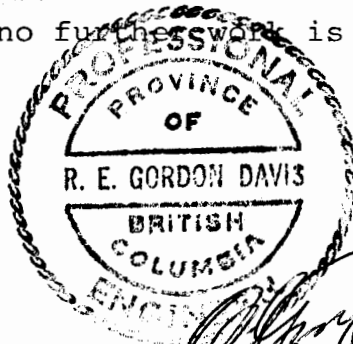
A few zones of alteration along the granite stock-granodiorite and granodiorite-Yukon Group contacts were encountered. In all cases, exposure is limited to rubble concentrations at or near hilltops. They are similarly characterized by chalky feldspars, abundant quartz, abundant limonite (in one zone, botryoidal goethite was noted), epidote and chlorite, shearing and minor brecciation. An altered zone located at the eastern end of the claims lies within the granodiorite and contains minor pyrite.

Sporadic pyrite dissemination was noticed within the Yukon Group gneisses and within a number of the dacite porphyry dykes. Also noted were a few crystals of hornblende in the granodiorite partially replaced by fine-grained pyrite. No other sulphides were seen.

CONCLUSIONS

1. The ROYALE claims are underlain by a complex of intrusive and metamorphic rocks marking a contact between the Klotassin Batholith, Yukon Group gneiss, and Tertiary intrusions.
2. Intrusive contact zones are marked by gossans, alteration, brecciation, minor pyrite and tourmaline mineralization, and an aeromagnetic high. No minerals of economic interest were found in these zones or elsewhere on the claims.
3. A low geochemical response obtained from the whole claim group reflects the lack of visible mineralization and indicates a generally low economic potential for the area.
4. On the basis of the geologic mapping and the geochemical survey, no further work is warranted on the ROYALE claims.

Sept. 1970

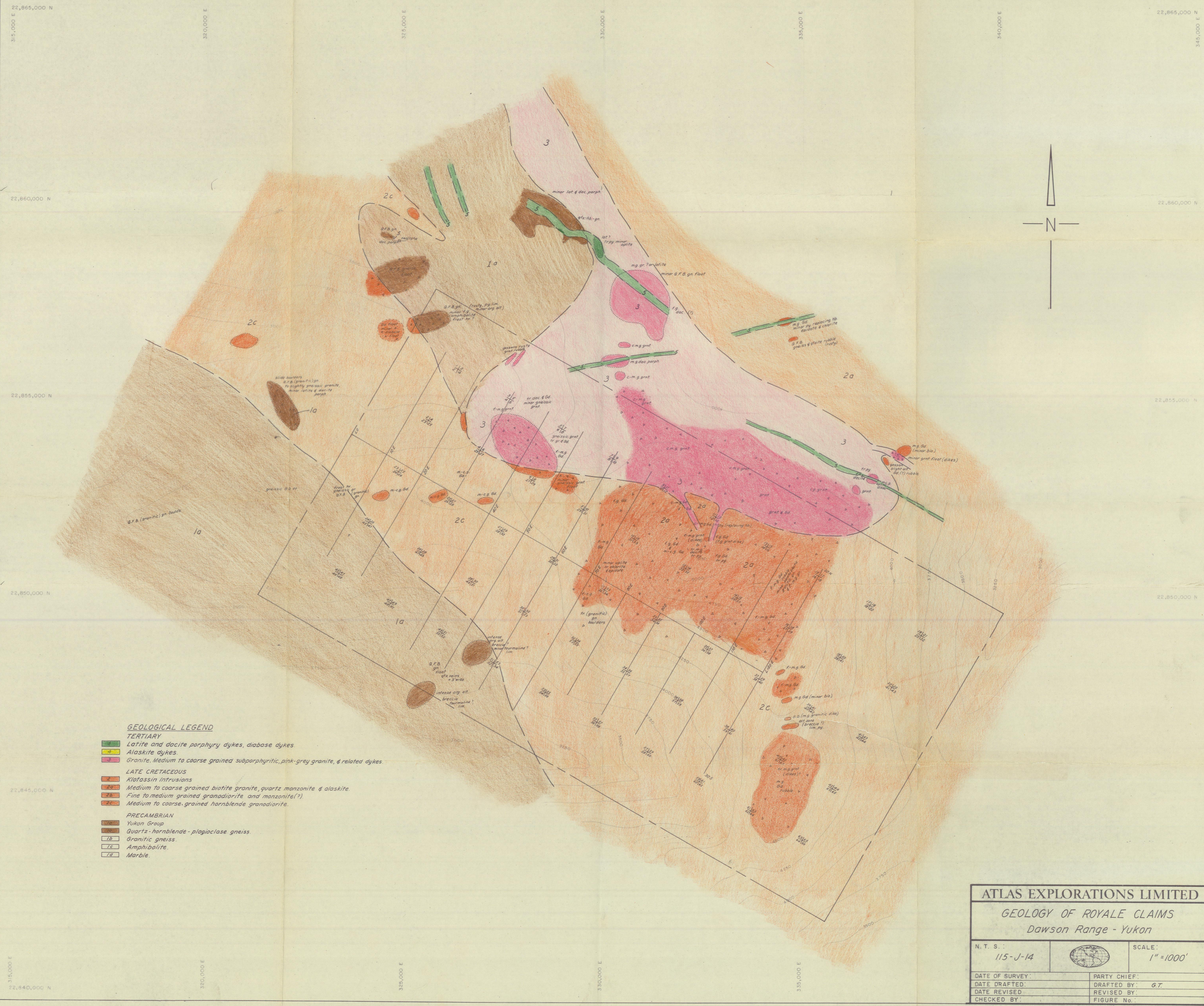


Respectfully submitted,

Kenneth M. Dawson
Kenneth M. Dawson,
Geologist



KEY MAP
 ROYALE CLAIM GROUP N.T.S. 115-J-14




GEOLOGICAL LEGEND

- TERTIARY**
- Latite and dacite porphyry dykes, diabase dykes
 - Alaskite dykes
 - Granite, Medium to coarse grained subporphyritic, pink-grey granite, & related dykes.
- LATE CRETACEOUS**
- Klotassin Intrusions
 - Medium to coarse grained biotite granite, quartz monzonite & alaskite.
 - Fine to medium grained granodiorite and monzonite(?)
 - Medium to coarse grained hornblende granodiorite.
- PRECAMBRIAN**
- Yukon Group
 - Quartz-hornblende-plagioclase gneiss.
 - Granitic gneiss.
 - Amphibolite.
 - Marble.

ATLAS EXPLORATIONS LIMITED

*GEOLOGY OF ROYALE CLAIMS
Dawson Range - Yukon*

N. T. S.:	115-J-14		SCALE:	1" = 1000'
DATE OF SURVEY:		PARTY CHIEF:		
DATE DRAFTED:		DRAFTED BY:	G.T.	
DATE REVISED:		REVISED BY:		
CHECKED BY:		FIGURE No.:		