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GEOLOGICAL REPORT ON  
PART OF THE STAN GROUP OF MINERAL CLAIMS  
EHOLT AREA  
GREENWOOD MINING DIVISION  
BRITISH COLUMBIA

(Penticton one degree quadrilateral,  
10 miles northwest of Grand Forks;  
SE/4 49 - 119; Sheet 82E - S.E.)

by

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CALGARY, ALBERTA.

January, 1966

Work completed by  
KING RESOURCES COMPANY  
CALGARY, ALBERTA

Owners

During period: October, 1965 - January, 1966.

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INTRODUCTION

General Statement

The following report is concerned with the geology and mineral potential of a part of the Stan Claim Groups located between Grand Forks and Greenwood in the Eholt area, Greenwood Mining Division, B. C. (Figures Nos. 1, 2).

The report is based upon field work conducted by the writer and assistants during the period October 1st and November 15th, 1965. Compilation of field data and preparation of this report were completed in December, 1965 and January, 1966.

The cost of the work involved herein is to be applied against assessment work due on certain of claims in 1966 and subsequent years.

Location, Extent and Title

The Stan group of claims as presently constituted is made up of fifteen mineral claims (Stan Nos. 1 - 15), five fractional claims (Stan Fr. Nos. 1 - 5) and one crown lease (Rockland - L.1493). Twenty-nine additional Stan claims and fractional claims were staked during the course of the field work upon which this report is based. The latter claims are known as Stan Nos. 16 - 39, Stan Nos. 41 - 44 and Stan Fr. No. 6. It is likely that at least some of those claims will, in the future, be added to the present Stan group.

The Stan claims and fractional claims together with the Rockland crown lease are located along and adjacent to B. C. south provincial highway No. 3 at points some 15 miles northwesterly from Grand Forks and

five miles easterly from Greenwood in the Greenwood Mining Division, B. C. (Figures Nos. 1, 2). The village of Eholt which is located on the Kettle Valley branch of the C. P. Railway and on Highway No. 3 is some two miles northeast of the heart of the Stan claim area (Figure No. 2).

The first of the Stan claims located were staked in April, 1965 by Mr. John H. Chernoff of Grand Forks and they covered an area of old showings known to Mr. Chernoff. Pertinent staking data are as follows:

<u>Claim Name</u>	<u>Staked by</u>	<u>Location Date</u>
Stan No. 1	J. H. Chernoff	April 15, 1965
Stan No. 2	J. H. Chernoff	April 15, 1965
Stan No. 3	J. H. Chernoff	April 15, 1965
Stan No. 4	J. H. Chernoff	April 15, 1965
Stan No. 5	J. H. Chernoff	April 15, 1965
Stan No. 6	J. H. Chernoff	April 15, 1965
Stan No. 7	J. H. Chernoff	April 15, 1965
Stan No. 8	J. H. Chernoff	April 16, 1965
Stan No. 9	J. H. Chernoff	April 16, 1965
Stan No. 10	J. H. Chernoff	April 16, 1965
Stan No. 11	J. H. Chernoff	April 16, 1965
Stan No. 12	J. H. Chernoff	April 20, 1965
Stan No. 13	J. H. Chernoff	April 20, 1965
Stan No. 14	J. H. Chernoff	April 23, 1965
Stan No. 15	J. H. Chernoff	April 27, 1965
Stan Fr. No. 1	J. H. Chernoff	April 16, 1965
Stan Fr. No. 2	J. H. Chernoff	April 16, 1965
Stan Fr. No. 3	J. H. Chernoff	April 16, 1965
Stan Fr. No. 4	J. H. Chernoff	April 16, 1965
Stan Fr. No. 5	J. H. Chernoff	April 16, 1965

The above fractional claims were staked so as to abut against old crown-granted mineral claims located to the south of the main Stan claim area. Figure No. 2 shows the recorded layout of the claims. The plan is, however, inaccurate as is indicated in Figure No. 3.

The above claims were held for a short time by Mr. J. H. Chernoff. Mr. Chernoff then entered into an agreement on the properties with Gulliver Mining & Exploration Company of Calgary. In mid-1965 Gulliver, in turn, entered into a further agreement with King Resources Company of Calgary and King Resources now holds title to the ground subject to a five percent interest to Mr. Chernoff.

During the course of the October and November 1965 field work on the original Stan ground, it was found to be desirable to locate additional claims along and adjacent to granitic contacts which pass through the area (Figures Nos. 4, 5). Accordingly, the Rockland crown lease was applied for by King Resources Company on November 9th, 1965 and title to the lease was subsequently obtained by that Company. In addition, Stan Nos. 16 - 39 and Stan Nos. 41 - 44 mineral claims and Stan Fr. No. 6 fractional claims

were staked (Figure No. 2). Pertinent claim data are as follows:

<u>Claim Name</u>	<u>Located by</u>	<u>Agent for</u>	<u>Location date</u>	<u>Recording date</u>
Stan No. 16	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965
Stan No. 17	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965
Stan No. 18	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965
Stan No. 19	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965
Stan No. 20	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965
Stan No. 21	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965
Stan No. 22	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965
Stan No. 23	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 24	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 25	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 26	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 27	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 28	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 29	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 30	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 31	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 32	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 33	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 34	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 35	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 36	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 37	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 38	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965
Stan No. 39	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965
Stan No. 41	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 42	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 43	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan No. 44	J. H. Chernoff	M. C. Robinson	November 13, 1965	November 16, 1965
Stan Fr. No. 6	J. H. Chernoff	M. C. Robinson	November 14, 1965	November 16, 1965

Title to the above additional claims is now held by King Resources Company.

#### Access

The Stan claim area straddles the valley of Eholt Creek through which pass B. C. south trans-provincial highway No. 3 and the Kettle Valley Branch of the Canadian Pacific Railway (Figure No. 2). As a result, the general area of the claims is readily accessible from such southeastern British Columbia centers as Greenwood, Grand Forks, Castlegar, Trail and Penticton.

Internal access to at least some parts of the Stan claim area is provided by a series of roads following old mine haulage grades leading from former producing properties to Phoenix which is some two miles south of the claim area (Figure No. 2). The grades on these routes are gentle and are in good condition. Additional internal access is provided by a network of logging roads many of which lead from the above old haulage grades (Figures Nos. 2, 3).

Slopes are gentle to flat over most of the area covered by the Stan claims and soil and timber cover is almost universally present except in cleared pasture areas along the bottom of the Eholt Creek valley. As a result, additional access roads can be constructed with relative ease and at low cost.

#### Topography, Vegetation and Water

Topography in the area covered by the Stan claims is, for the most part, gentle and it presents no operating problems. Relief within the area ranges between approximate limits of 3,000 feet in the valley bottom at and near Eholt to some 4,500 feet at the crest of a main ridge at the top of the south slope of the valley.

The major topographic features in the area covered by the initial Stan claims (Stan Nos. 1 - 15 and Stan Fr. Nos. 1 - 5) are:

- (1) a gentle subdued easterly trending ridge with local high points or knolls which follows approximately the Stan 2 - 4 to Stan 13 - 15 location line (Figures Nos. 2, 3).
- (2) an easterly trending gentle, open valley located to the south of the above ridge and to the north of old mine haulage grade leading westerly from the Emma mine (Figure No. 2).

Minor stream valleys traverse parts of the staked area and these flow northerly to northwesterly into Eholt Creek or southerly to south-easterly into Fisherman Creek from a local height of land or divide which passes northeasterly through the claim area and through the Village of Eholt.

For the most part, the area covered by the claims is soil and brush or timber covered and outcrops of bedrock are therefore not plentiful. Much of the area along and adjacent to the valley of Eholt Creek is flat to gently rolling and it has been cleared for the purpose of providing pasture lands for cattle. Much of the uncleared lower lying country along and near the bases of gentle slopes in the area is cedar swamp land which is very difficult to traverse and in which outcrops of bedrock are virtually non-existent. The higher areas such as those along the above-mentioned ridge tend to be more open and they support pine, fir and other forest growth adequate for logging operations. Thus, sufficient timber is available for mining purposes.

On the whole, water is scarce in the claim area except at times of spring run-off. Apparently the only continuously and readily available supply of water is that in Eholt Creek. It is presumed that water for drilling, mining or other purposes can be hauled or pumped from the creek. There may, however, be some problem with respect to water rights for cattle and this point should be checked.



### Climate

The climate in the area is moderate and might well be called semi-arid by British Columbia standards. Precipitation is said to rarely exceed 15 inches annually. Winter snow cover remains for only a few months, amounts to only a very few feet and presents no serious removal problems along access routes. Winter temperatures are mild.

### History

The Stan claim area lies within the general limits of the Greenwood-Phoenix-Holt copper producing camp. Certain of the properties adjoining Stan ground have produced ore which was hauled to and processed at the old Phoenix area smelter located some two miles to the south.

The general region first received the attention of prospectors in 1890 and 1891. It is reported that all major properties of the district were located by the end of 1891, that, by 1900, all major mines had been at least partially developed and that construction of access and haulage routes was well advanced. Also by 1900, the construction of smelters in the area was well under way.

Production from the general area increased to a reported annual maximum of 1,250,000 tons in 1913 and subsequently declined until 1919 when lack of ore reserves, labour problems and other difficulties forced the closure of most mines. Comparatively little mining was done during the period 1920 - 1933. Since the latter year activity has been generally increasing and at the present time the area is receiving very active exploratory attention. Certain of the mines in the Phoenix area are producing at substantial rates totalling some 5,000 tons daily. In the immediate area of the Stan claims, Westcoast Resources Ltd. has reported the development of some 600,000 tons of copper ore on the old Orde Noro and Emma properties and it is rumoured that reserves of ore have been located through diamond drilling on the B. C. property (Figure No. 2).

The history of the area covered by the Stan claims is not well known. A number of cuts, short tunnels and other workings have been constructed along some sections of a granitic contact which is present beneath the claims. These are said to have been completed during the 1890 - 1913 period of initial activity. Much of the ground involved was originally crown-granted but the grants were allowed to lapse, presumably in the early 1930's. Since that time, the bulk of the ground has been staked on a number of occasions but little apparent work has been done.

In part, the lack of significant historical activity on or production from the present Stan claim area may result from the fact of comparatively little outcrop in the area. If so, then the application of modern geophysical techniques may be of substantial value in locating areas of future exploratory interest.

### Previous Investigations

The present writer is not aware of any previous investigations of the subject property.

The general region embracing and adjacent to the property has been mapped by workers of the Geological Survey of Canada. The most recent regional compilation has been prepared by Dr. H. W. Little in the form of Geol. Surv. Canada Map 6-1957 (Kettle River, west half).

### Present Work

The present work was designed primarily to inspect, appraise and determine the general geologic setting of known mineral showings covered by the initial Stan claims (Stan Nos. 1 - 15 and Stan Fr. Nos. 1 - 5). The program included:

- (1) general reconnaissance of the area (Figure No. 4).
- (2) surveying of control lines through a part of the claim area (Figure No. 3).
- (3) cruising with the aid of assistants the areas adjoining the above control lines in order to locate outcrops, old workings, etc. (Figure No. 5).
- (4) cleaning out, mapping, inspecting and sampling old workings, surface cuts, etc. (Figures Nos. 6 - 11).
- (5) preparation of the present report and maps covering the above.

The field work involved herein was completed in October and November, 1965 and the office work in December, 1965 and January, 1966.

Cost of Present Work

The cost of the work upon which this report and accompanying maps are based has been as follows:

<u>Item</u>	<u>Cost</u>	
<u>Manpower</u>		
Geologist - M. C. Robinson		
- total - 16 days @ \$125.00	\$ 2,000.00	
Draftsmen - drafting: 63½ hours @ \$5.50	349.25	
- coloring, etc: 18 hours @ \$5.00	90.00	
- reproduction	44.43	
Field assistants		
- J. G. Brown & A. O. Rich contract including 2 men, vehicle, subsistence, etc. 24 hours @ \$10.00		<u>240.00</u>
TOTAL	<u>\$ 2,723.68</u>	\$ 2,723.68
<u>Expense</u>		
Mileage: 1,492 miles @ .12¢	179.04	
Hotel, meals, etc.	169.75	
Supplies incl. powder, etc.	27.60	
Samples - shipment & assays	<u>86.20</u>	
TOTAL	<u>\$ 462.59</u>	<u>462.59</u>
TOTAL HEREIN		<u>\$ 3,186.27</u>

## GENERAL GEOLOGY

### Regional Setting

The geologic setting of the Stan claims and fractional claims and of the Rockland crown lease is shown in regional fashion on Geological Survey of Canada Map No. 6-1957 prepared by Dr. H. W. Little. This map indicates that bedrock of the general area of the claims is made up primarily of sedimentary and volcanic rocks of the Anarchist group of Permian (?) age and of granitic rocks of the Nelson Intrusions of Lower Cretaceous (?) age. The gross distribution of rocks of the two groups as mapped by Dr. Little involves an easterly extending prong of granitic intrusives invading the Anarchist rocks in the Stan claim area. In addition to rocks of the above two general categories, Little shows scattered outcrop areas of extrusive volcanic and/or tuffaceous rocks of the Phoenix Volcanic Group of Paleocene or Eocene age in the general vicinity of the Stan claims.

The present writer's investigation of the Stan claim area confirms the regional picture presented by Dr. Little although some modification of the Nelson Intrusive - Anarchist group contact has been necessary and the ability to subdivide the Anarchist group into members of either a distinctive or, at least, predominant lithologic type is apparent.

The general pattern of distribution of bedrock types as determined by the writer is shown in Figure No. 4. Basically, this involves a rather prominent east - southeasterly trending prong of granitic rock types intrusive into mixed sedimentary and greenstone rocks of Little's Anarchist group. The granitic prong is evidently a somewhat linear extension from a fairly large area of granitic rocks centered to the northwest of the Stan claim area. In addition to the main granitic prong of the area, local minor intrusive bodies of granitic rocks are present (Figure No. 4).

A few apparently continuous bands or members of limestone are present within the Anarchist sequence and are shown on Figure No. 3. Mapping of the units is incomplete so that the correlations of the outcrop areas shown in Figure No. 4 is tentative only. The bands or members of limestone are of apparent economic significance for it is within or immediately adjoining them that much of the ore and most mineral showings of the area have been found.

The bedrock area shown in green on Figure No. 4 is made up of a variety of lithologic types including greenstone, quartzite, argillaceous quartzite, argillite and altered sedimentary rocks. The alteration is observed for the most part in the vicinity of known granitic contacts. The writer's work in the area suggests that the above general area of greenstone and sedimentary rock types can be fairly readily subdivided into predominantly sedimentary and predominantly greenstone lithologic units.

The structural geology of the area is not well understood at the present time, largely because of lack of time-consuming detailed mapping but also because of the inability to determine reliable primary bedding or other lithic boundary attitudes in many outcrops. That information which is available suggests the presence of a syncline involving a limestone member and located to the east of the Stan claims.

If the interpretation shown in Figure No. 3 is correct, then a possible pattern of repetition at the surface of individual lithic members is apparent.

That structural information which is available for that part of the area covered by Stan Nos. 6, 8, 12 and 14 claims suggests that the "Stan" limestone belt may have been warped into approximate configuration with the local granitic contact (Figure No. 4). This, however, is by no means proven and it is probable that surface stripping of overburden will be required to determine the local structure of the area.

## Local Geology

### Introductory Statement

In general, bedrock in the area of the Stan claims is poorly to very poorly exposed except on higher ground and in road cuts. Accordingly, it is difficult without the aid of mechanical stripping to establish firmly the distribution of bedrock rock types. In addition, many outcrop areas display evidence of substantial deformation and alteration of bedrock so that reliable structural and lithologic information is difficult to obtain.

As indicated in the foregoing section, bedrock as displayed at the surface is made up of an interlayered sequence of sedimentary rocks and greenstones. The sedimentary types a broad range of arenaceous rocks grading in composition from almost pure, well-cemented quartzite through argillaceous quartzite and quartzitic argillite to argillite. Beds and members of limestone of apparent sedimentary origin are included in the sequence. Some tuffaceous sediments are also present. The greenstones are of apparent volcanic origin and they display a rather broad range of colours and textures.

The intrusive rocks of the area are largely medium-grained somewhat greenish cast granodiorite. However, border phases of intrusive bodies display substantial variations in composition, colour and texture. In addition, the material contained within some minor stocks is a distinct feldspar porphyry.

Local outcrop areas of a rather distinctive, burnt looking apparent extrusive rock of varying colour are present in the area. These are suspected to be rather young extrusives of possible Tertiary age although this has not been proven.

Minor dikes of basic intrusive material are present along fractures and shear zones which cut the granitic rocks.

The greenstone-sedimentary sequence has been folded and deformed in patterns which are not clearly understood at the present time. A substantial variation in regional geologic strike is to be observed through the area, possibly as the result of forceful intrusion of granitic material. Bedrock, including granitic rocks, has been further deformed through the development of slips, shears, fractures, joints and, possibly, major faults.

Alteration along and adjacent to granitic contacts is evident where exposures are present.

### Bedrock Units

The bedrock units observed in the area are as follows (Figure No. 5):

<u>Age</u>	<u>Unit</u>
Tertiary (?)	Minor basic intrusives Volcanic rocks
Lower Cretaceous (?)	Granitic rocks
Palaeozoic	Greenstone and sedimentary rocks subdivided as follows: (i) predominantly greenstone; some sedimentary rocks. (ii) predominantly argillaceous and quartzitic sedimentary rocks; some greenstone; some tuffaceous sediments. (iii) predominantly limestone; some sedimentary rocks and greenstone. (iv) laminated siliceous rocks

### Minor Intrusives

A few minor dikes of dark greenish cast fine to medium-grained intrusive rock up to three feet in width were observed in fracture and slip zones which cut bedrock in the area. One such dike was followed in the southeasterly directed fork of the Stan No. 6 workings (Figure No. 8). In that case, the dike appears to be younger in age than mineralized skarn and country rock which forms the walls of the dike.

### Volcanic Rocks

A few isolated exposures of baked looking material of apparent volcanic origin are present on Stan No. 1 claim (Figure No. 5) and similar material is exposed in road cuts along the major bend in Highway No. 3 to the east of Eholt. The rock possesses a somewhat curious porphyritic appearance with small phenocrysts in a burnt looking, dense, very fine-grained ground mass. The phenocrysts are arranged so that they are reminiscent of bird tracks in general pattern. The ground mass of the rock varies in color from shades of light to medium grey through shades of tan, brown and green. The rock is believed to be angite trachyte of the Phoenix volcanic group.

### Granitic Rocks

The intrusive or granitic rock of the area studied is primarily light grey to light greenish grey granodiorite. It is an equigranular, medium grained rock containing hornblende and biotite as its mafic components. Some border phases of the granodiorite are dark grey and fine grained. In

some places there appears to be almost a complete gradation from normal granodiorite through fine-grained border phase material into altered country rock.

Feldspar porphyry with small to medium phenocrysts of white feldspar is present locally. No relationship was determined between this rock type and the much more common granodiorite.

### Greenstone

Greenstone of varying texture, colour and degree of alteration constitutes the bulk of non-granitic bedrock in the area examined (Figure No. 5). Most of the fresher appearing material is dense and fine-grained and possesses no apparent internal structure. It varies in colour through shades of light to dark green to greyish green. The rock appears to be of anditic composition.

Some phases of the greenstone possess a fine to medium porphyritic texture which characteristic may be of assistance in very detailed mapping.

Certain of the greenstones exposed in the southern part of Stan No. 1 Fr. and elsewhere possess an irregular, wavy colour lamination in shades of light brownish-green, yellowish green and green. Individual bands or laminae vary in thickness from a small fraction of an inch to a few inches. The origin of the banding is unknown but it may result from alteration along cleavage or similar planes.

Varying amounts of sedimentary material, largely argillaceous quartzite to quartzitic argillite are contained within the greenstone sequence. In addition, some beds of limestone are locally present.

Rocks of the greenstone sequence have been deformed and altered to varying degrees. In some exposures, the rocks are bleached and silicified. In others, they are sheared, fractured and shot with veinlets of calcite. At others along granitic contacts, the effects of contact metamorphism are evident.

### Argillaceous and Quartzitic Rocks

Sedimentary rocks varying in composition from argillite to almost pure quartzite are present in predominantly sedimentary members and in isolated beds or groups of beds in the greenstone sequence. The rocks are dense, fine-grained and well-cemented. Bedding is poorly displayed to absent in most exposures. The rocks have been altered to varying degrees, noticeably so near granitic contacts.

### Limestone

The limestone observed in the area of the Stan claims varies substantially in composition, colour, texture and degree of alteration. Most observed material is a massive, white, medium crystalline rock which has undergone a substantial degree of metamorphism. No evidence of primary structures was seen in such rock.

Other limestones are finely striped in shades of white to light grey and dark grey and might well be termed zebra rock. They are fine to medium crystalline. Still others are argillaceous, are medium to dark grey and greyish brown in colour and are fine-grained.

Bleaching and silicification of limestone was noted at a number of the localities examined. At and near some granitic contacts, the limestone has been transformed through metamorphism and replacement to a product containing varying proportions of garnet, actinolite and epidote. Some such material is almost entirely garnet whereas other material is almost entirely actenolite.

#### Laminated Siliceous Rocks

Thinly laminated siliceous rocks are present in the southernmost part of the area mapped (Figure No. 5). The sequence is composed largely of fine grained quartzite and chert with some argillaceous bands. Individual bands vary in thickness from 1/4 inch to four inches. They tend in part to possess a platy but lenticular habit. Locally, tight drag folds and plications are developed in the laminated sequence, suggesting that the banding may be primary.

Rocks of this sequence may be correlative with or similar to rocks referred to as "jasperoids" in the Phoenix area to the south.

#### Local Structure

Comparatively little of structural note can be added to the remarks presented previously except to note the possible presence of a fault on Stan No. 8 claim. This feature has been placed in questionable fashion on Figure No. 5 in order to explain an apparent offset in lithologic types.

Minor structural features such as slips, joints and fractures are common in rocks of the area. The data obtained on such features display no well-defined regional patterns (Figure No. 5).



## ECONOMIC GEOLOGY

### General Statement

The ground covered by the Stan claims and the Rockland crown lease is contained within Greenwood-Phoenix-Eholt copper camp. Mineral deposits within and adjoining the immediate area of the claims are of the chalcopyrite-pyrite-magnetite-lime silicate contact metamorphic type. This type of deposit is most commonly located at or close to granitic contacts as is the case in the Orde Noro and Emma mine areas to the immediate east of the Stan claims (Figures Nos. 4, 5). Showings of the above type are present on Stan Nos. 6 and 14 claims (Figures Nos. 6, 7, 8) and additional showings of the same type may well be present but obscured by overburden along the granitic contact which is present over much of Stan ground (Figure No. 3).

The Stan No. 6 and 14 showings are located in irregular embayments in the granitic contact (Figures Nos. 6, 8). It is possible that such irregularities have had some control over the distribution of mineralization. In both cases, metallic mineralization is present in contact metamorphic lime silicate rocks. The thickness of the contact metamorphic zone appears to vary between approximate limits of 5 and 50 feet although this figure cannot be established accurately without drilling. In addition, it is probable that the thickness of the zone changes markedly from place to place.

The silicate mineral composition of the contact metamorphic lime silicate zone varies substantially. Some of the material is almost entirely garnet, some is almost entirely actinolite and some is a mixture of garnet and epidote with minor actinolite.

Metallic minerals present in the lime silicate include magnetite, hematite, pyrite, chalcopyrite, bornite, chalcocite and molybdenite. Azurite and malachite staining is common at the surface. The mode of occurrence of the metallic minerals varies substantially. Magnetite occurs in pods, masses and lenses of almost pure magnetite up to a few feet in maximum dimension. Pyrite occurs in veins, veinlets, pods and lenses and, to some extent, it follows what appear to be late slips and fractures. Chalcopyrite occurs primarily as finely disseminated grains and small masses. Molybdenite is sparingly present in small but visible grains in some of the skarn material.

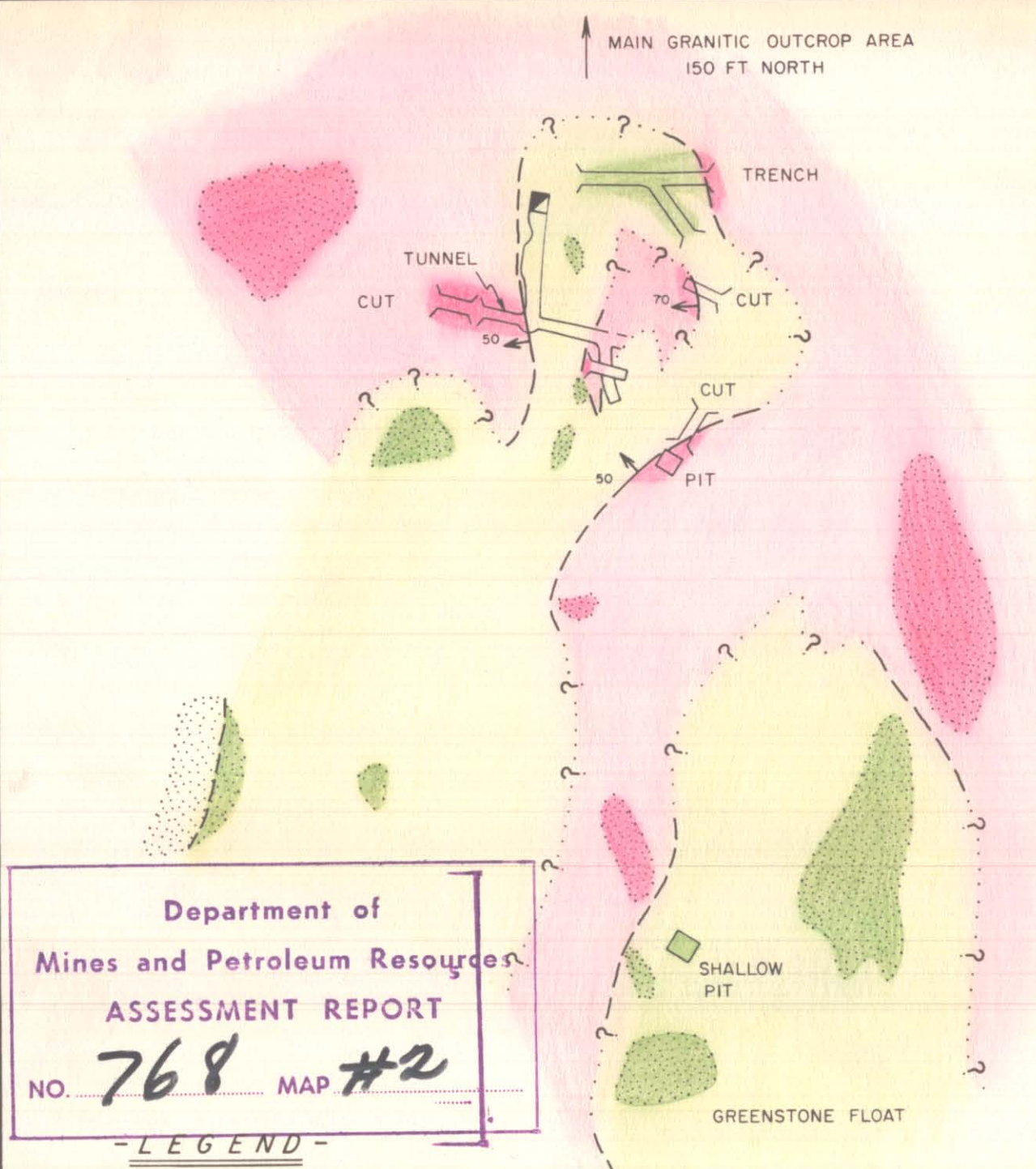
Non-metallic gangue minerals present in the contact lime-silicate zones include calcite and quartz.

### Stan No. 14 Workings

Stan No. 14 workings are located in the southeasterly part of the claim (Figure No. 5) and include several cuts and a short, branching tunnel from which a raise has been driven to the surface (Figures No. 6, 7). The workings explore an area of mineralized lime-silicate material contained within an embayment in the granitic contact (Figure No. 6).

↑ MAIN GRANITIC OUTCROP AREA  
150 FT NORTH

N



**Department of**  
**Mines and Petroleum Resources**  
**ASSESSMENT REPORT**  
 NO. **768** MAP **#2**

- LEGEND -

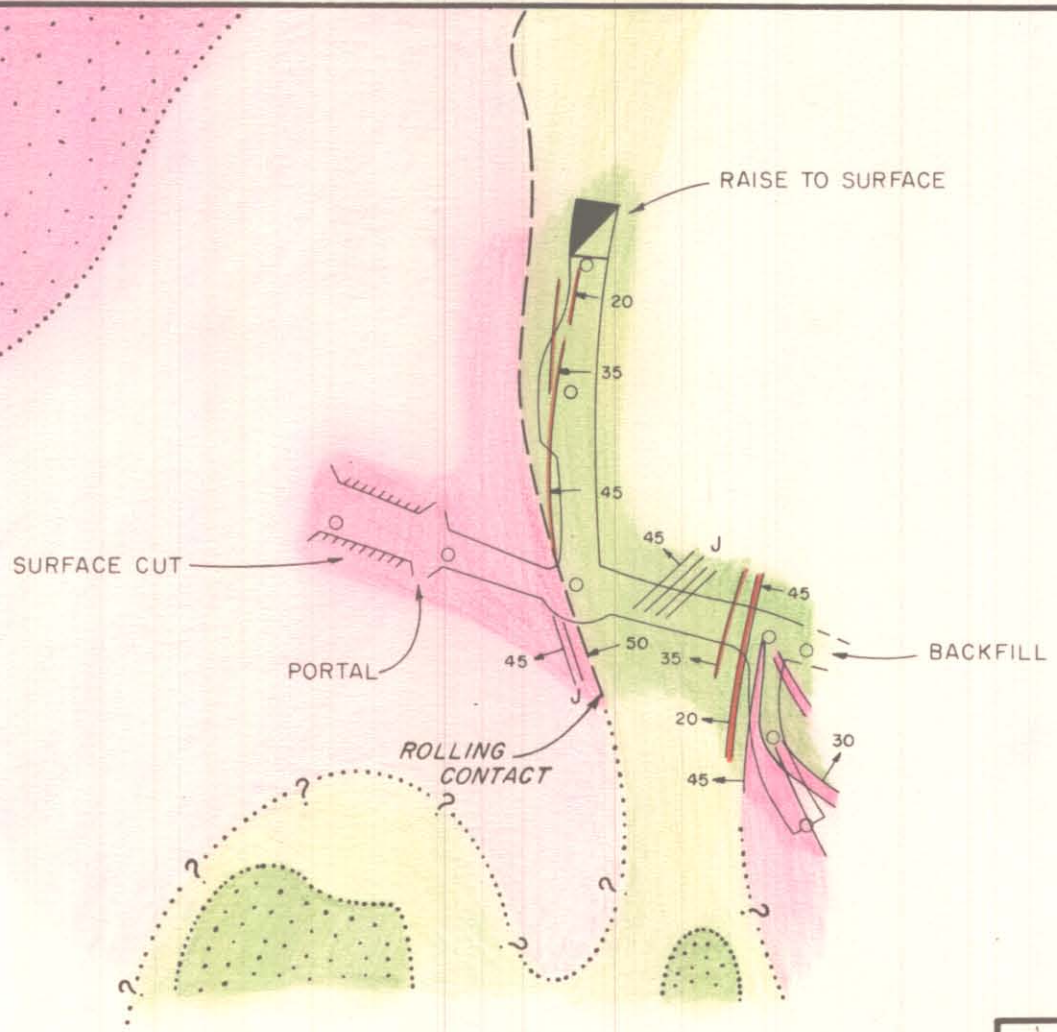
- GRANITIC ROCKS
- SKORN, ALTERED ROCKS, GREENSTONE & SEDIMENTS
- LIMESTONE
- 50 CONTACT - DEFINED
- CONTACT - APPROXIMATE
- CONTACT - QUESTIONABLE
- OUTCROP AREA

NO OUTCROP

<b>KING RESOURCES LIMITED</b>		
<b>GEOLOGICAL PLAN</b>		
<b>STAN 14 WORKINGS</b>		
DATE: DEC. 10, 1965	GEOLOGIST: DR. M.C. ROBINSON	
SCALE: 1" = 50'	DRAFTING: CENTRAL DRAFTING SERVICES LIMITED	FIGURE No. 6



Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. **768** MAP #3



LEGEND

- |        |                        |   |  |
|--------|------------------------|---|--|
| —      | CONTACT - DEFINED      | <span style="display: inline-block; width: 20px; height: 15px; background-color: #FF69B4; border: 1px solid black;"></span> | GRANITIC ROCKS                                 |
| - - -  | CONTACT - PROBABLE     | <span style="display: inline-block; width: 20px; height: 15px; background-color: #90EE90; border: 1px solid black;"></span> | SKARN, ALTERED ROCKS<br>GREENSTONE & SEDIMENTS |
| .....? | CONTACT - QUESTIONABLE |   |  |
| J      | JOINTING & SHEETING    |   |  |
| ↗ ↘    | MINOR SLIPS            |   |  |

KING RESOURCES LIMITED		
<b>GEOLOGICAL PLAN</b> <b>STAN 14 TUNNEL</b>		
DATE: DEC. 1, 1965	GEOLOGIST: DR. M.C. ROBINSON	FIGURE No. 7
SCALE: 1" = 20'	DRAFTING: CENTRAL DRAFTING SERVICES LIMITED	

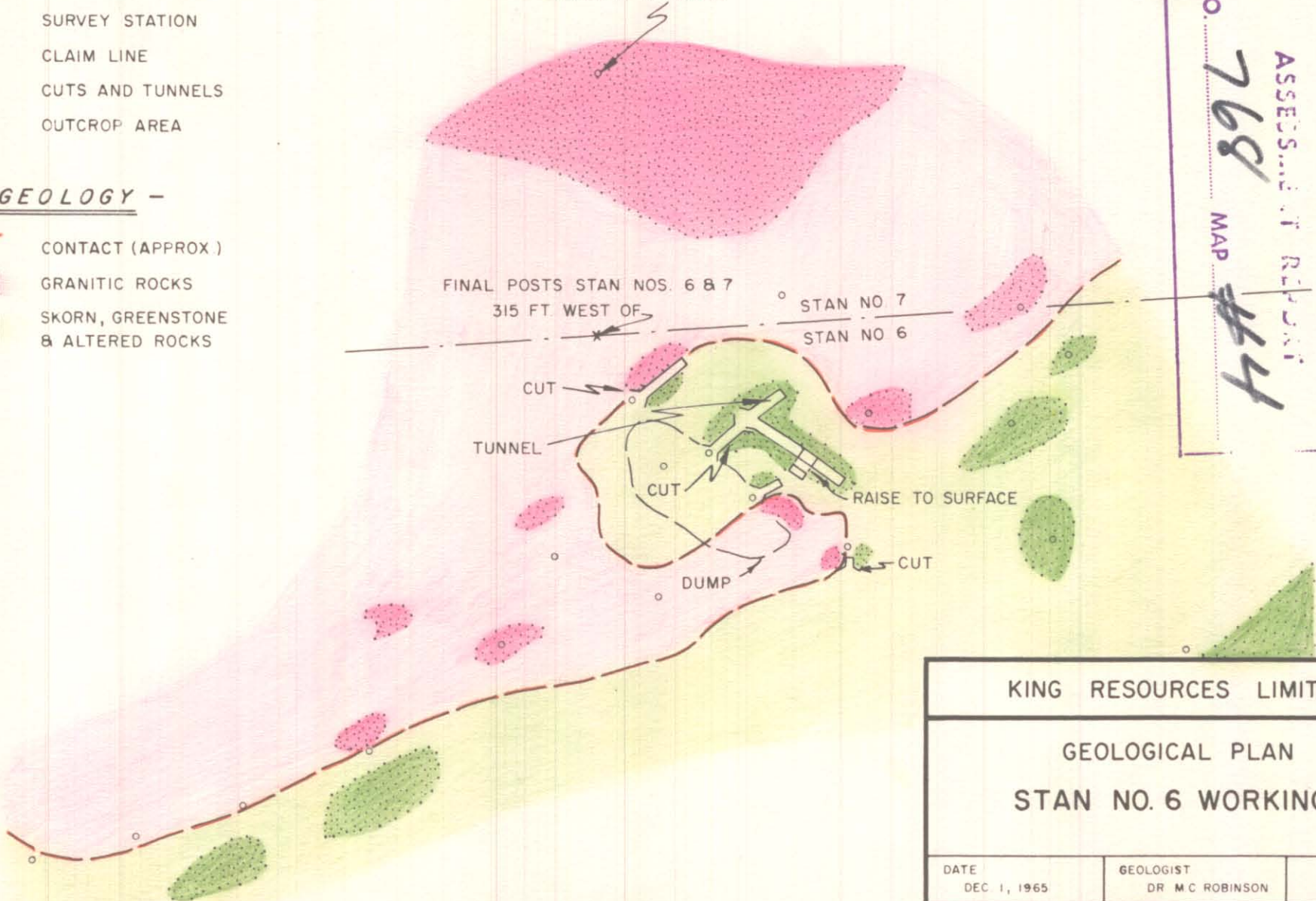
- LEGEND -

- SURVEY STATION
- CLAIM LINE
- ||| CUTS AND TUNNELS
- OUTCROP AREA

- GEOLOGY -

- - - CONTACT (APPROX.)
- GRANITIC ROCKS
- SKORN, GREENSTONE & ALTERED ROCKS

NOTE: STATION IS ON LOCATION LINE WHICH IS CROOKED



Department of  
 Mines and Technical Resources  
 ASSESSMENT REPORT  
 NO. 768 MAP #44

KING RESOURCES LIMITED		
GEOLOGICAL PLAN STAN NO. 6 WORKINGS		
DATE DEC 1, 1965	GEOLOGIST DR M C ROBINSON	
SCALE 1" = 50'	DRAFTING CENTRAL DRAFTING SERVICES LIMITED	FIGURE No 8

NOTE: THIS PLAN IS SUBJECT TO LOCAL MAGNETIC VARIATIONS

Figures Nos. 9 and 10 show sample locations and copper values obtained in the area of the Stan 14 workings.

Stan No. 6 Workings

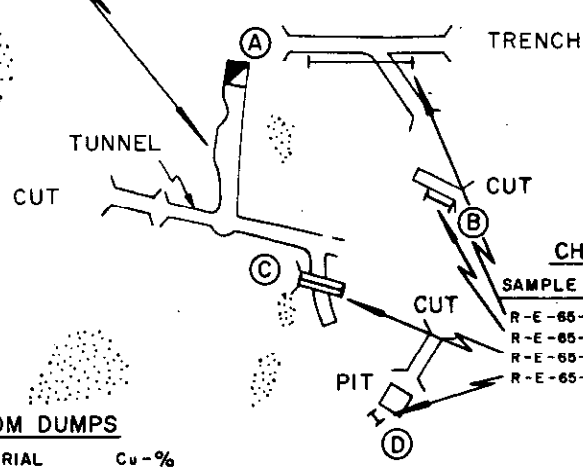
Stan No. 6 workings are located in the northwesterly part of the claim (Figure No. 5) and include a few cuts and a short tunnel from which a raise has been driven to the surface (Figure No. 8). As in the case of Stan 14, the workings explore a lime silicate zone contained within a prominent embayment in the granitic contact (Figure No. 8).

Figure 11 provides sample locations and copper values in the vicinity of the Stan No. 6 workings.

Remarks

The information obtained with respect to mineralization present in the areas of workings on Stan Nos. 6 and 14 claims does not indicate directly the probable or possible presence of economic mineral deposits on those claims. However, the fact of contact metamorphic mineralization on the claims coupled with the presence of economic deposits along the same contact at the Orde Noro and Emma properties and the presence of other showings elsewhere along the contact indicates that the contact zone is well worthwhile prospecting on Stan ground.

NOTE: SEE FIG. 10 FOR SAMPLE PLAN OF TUNNEL



**CHIP SAMPLES**

SAMPLE NO.	LENGTH	Cu-%
R-E-65-23	25 FT.	0.27
R-E-65-20	6 FT.	0.27
R-E-65-17	11 FT.	0.18
R-E-65-14	3.5 FT.	0.28

**SELECTED SAMPLES FROM DUMPS**

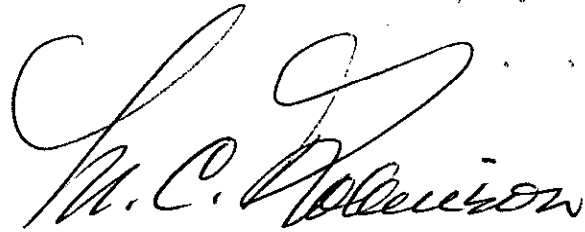
SAMPLE NO.	MATERIAL	Cu-%
(A) R-E-65-24	COPPER STAINED SKARN	0.17
P-E-65-25	HEAVY PYRITE	0.56
R-E-65-26	PYRITE & SKARN	0.10
(B) R-E-65-21	COPPER STAINED SKARN	0.83
R-E-65-22	SKARN	0.90
(C) R-E-65-18	HEAVY PYRITE	0.30
R-E-65-19	SKARN	0.20
(D) R-E-65-15	COPPER STAINED SKARN	0.68
R-E-65-16	SKARN	0.07
(E) R-E-65-13	HEAVY PYRITE	0.04

**Department of**  
**Mines and Petroleum Resources**  
**ASSESSMENT REPORT**  
 NO. **768** MAP **#5**

<b>KING RESOURCES LIMITED</b>		
<b>SAMPLE PLAN</b>		
<b>STAN 14 WORKINGS</b>		
DATE: DEC. 10, 1965	GEOLOGIST: DR. M.C. ROBINSON	
SCALE: 1" = 50'	DRAFTING: CENTRAL DRAFTING SERVICES LIMITED	FIGURE No. 9

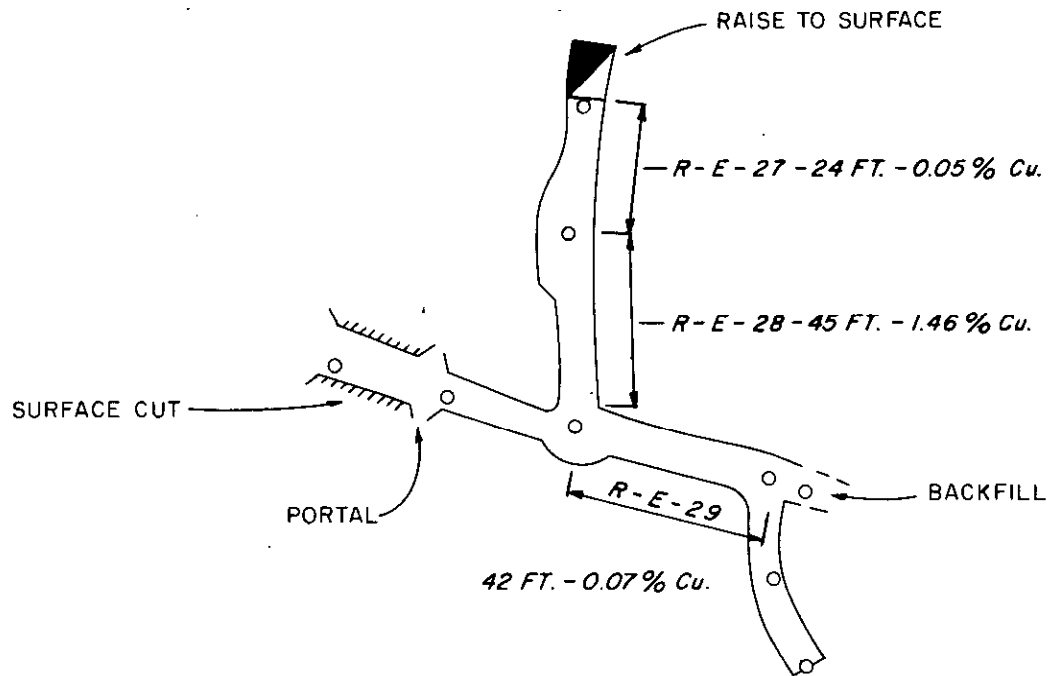
RECOMMENDATIONS

It is recommended that a geophysical survey of the properties be conducted in early 1966 with the objective of locating anomalies along the granitic contact. If the survey is successful in defining areas of interest, stripping and/or diamond drilling should follow in order to evaluate the anomalies.

A handwritten signature in cursive script, appearing to read "M. C. Robinson".

MCR/MMM

M. C. Robinson, P. Eng., P. Geol.



Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. *768* MAP #*10*

N



SAMPLES R-E-27, 28 & 29 - CHIP SAMPLES FROM BOTH WALLS.  
 SAMPLE R-E-30 - SELECTED HEAVY PYRITE FROM DUMP. - 1.10% Cu.  
 SAMPLE R-E-31 - SELECTED HEAVY SKARN FROM DUMP. - 0.11% Cu.

KING RESOURCES LIMITED

SAMPLE PLAN  
 STAN 14 TUNNEL

DATE :  
DEC. 1, 1965

GEOLOGIST :  
DR. M.C. ROBINSON

SCALE :  
1" = 20'

DRAFTING :  
CENTRAL DRAFTING  
SERVICES LIMITED

FIGURE No. 10



**- LEGEND -**

- SURVEY STATION
- CLAIM LINE
- CUTS AND TUNNELS
- OUTCROP AREA

NOTE: STATION IS ON LOCATION LINE WHICH IS CROOKED

N

Department of  
Mines and Petroleum Resources

ASSESSMENT REPORT

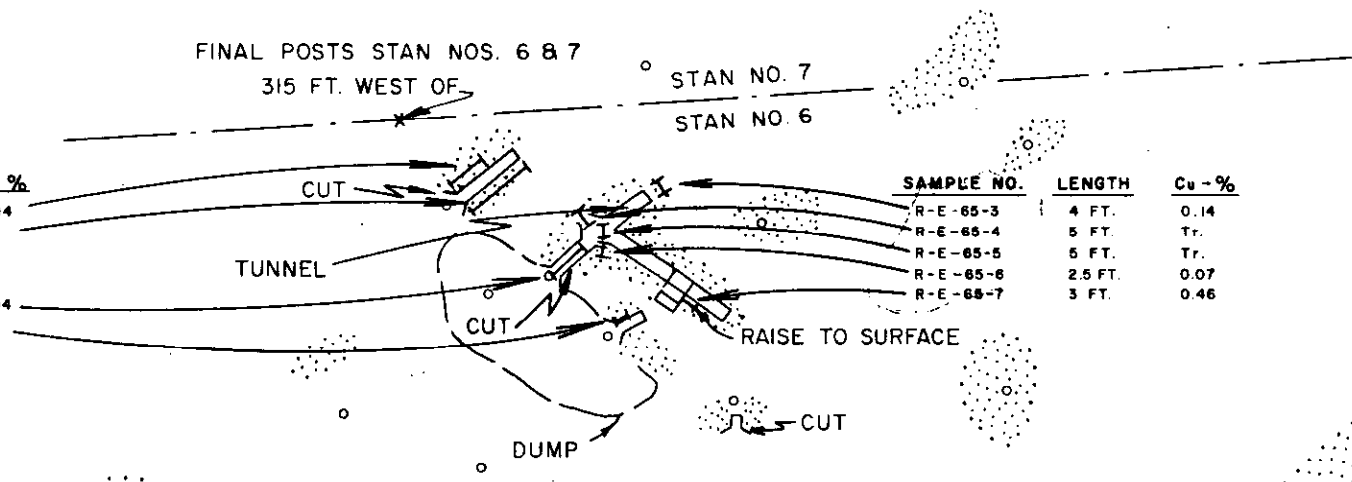
NO. **768** MAP # **7**

FINAL POSTS STAN NOS. 6 & 7  
315 FT. WEST OF

○ STAN NO. 7  
○ STAN NO. 6

SAMPLE NO.	LENGTH	Cu - %
R-E-65-1	10 FT.	0.04
R-E-65-2	20 FT.	Tr.
R-E-65-8	15 FT.	0.04
R-E-65-9	8 FT.	Tr.

SAMPLE NO.	LENGTH	Cu - %
R-E-65-3	4 FT.	0.14
R-E-65-4	5 FT.	Tr.
R-E-65-5	5 FT.	Tr.
R-E-65-6	2.5 FT.	0.07
R-E-65-7	3 FT.	0.46



**SELECTED SAMPLES FROM DUMPS**

R-E-65-10	HEAVY PYRITE	0.65 % Cu
R-E-65-11	MAGNETITE & PYRITE	0.38 % Cu
R-E-65-12	SKARN	0.04 % Cu

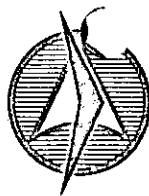
KING RESOURCES LIMITED

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SAMPLE PLAN  
STAN NO. 6 WORKINGS

DATE: DEC. 1, 1965	GEOLOGIST: DR. M.C. ROBINSON	
SCALE: 1" = 50'	DRAFTING: CENTRAL DRAFTING SERVICES LIMITED	FIGURE No. II

NOTE: THIS PLAN IS SUBJECT TO LOCAL MAGNETIC VARIATIONS



PHONE: 8411111

CABLE ADDRESS "ELDRICO"

FILE NO. 3-K.1-65 21431

DATE December 8, 1965

To:

King Resources Ltd.

1400 Elveden House,

Calgary, Alta.

Attention: Mr. B. T. Gallant

**Certificate of Assay**  
**COAST ELDRIDGE**  
**ENGINEERS & CHEMISTS LTD.**

125 EAST 4TH AVE. VANCOUVER 10, CANADA

We Hereby Certify that the following are the results of assays made by us upon submitted ore samples

MARKED	GOLD		SILVER	Copper (Cu)	PER CENT.	PER CENT.	PER CENT.	PER CENT.	PER CENT.
	OUNCES PER TON	VALUE PER TON	OUNCES PER TON	PER CENT.					
RE65 #1		\$		0.04					
#2				trace					
#3				0.14					
#4				trace					
#5				trace					
#6				0.07					
#7				0.46					
#8				0.04					
#9				trace					
#10				0.65					
#11				0.38					
#12				0.04					
#13				0.04					
#14				0.28					
#15				0.68					

Gold calculated at \$.....per ounce

Note. Rejects retained one week.  
 Pulps retained one month.  
 Pulps and rejects may be stored for a maximum of one year by special arrangement.






Unless it is specifically stated otherwise, gold and silver values reported on these sheets have not been adjusted to compensate for losses and gains inherent in the fire assay process.

*H. Shroyes*

Provincial Assayer

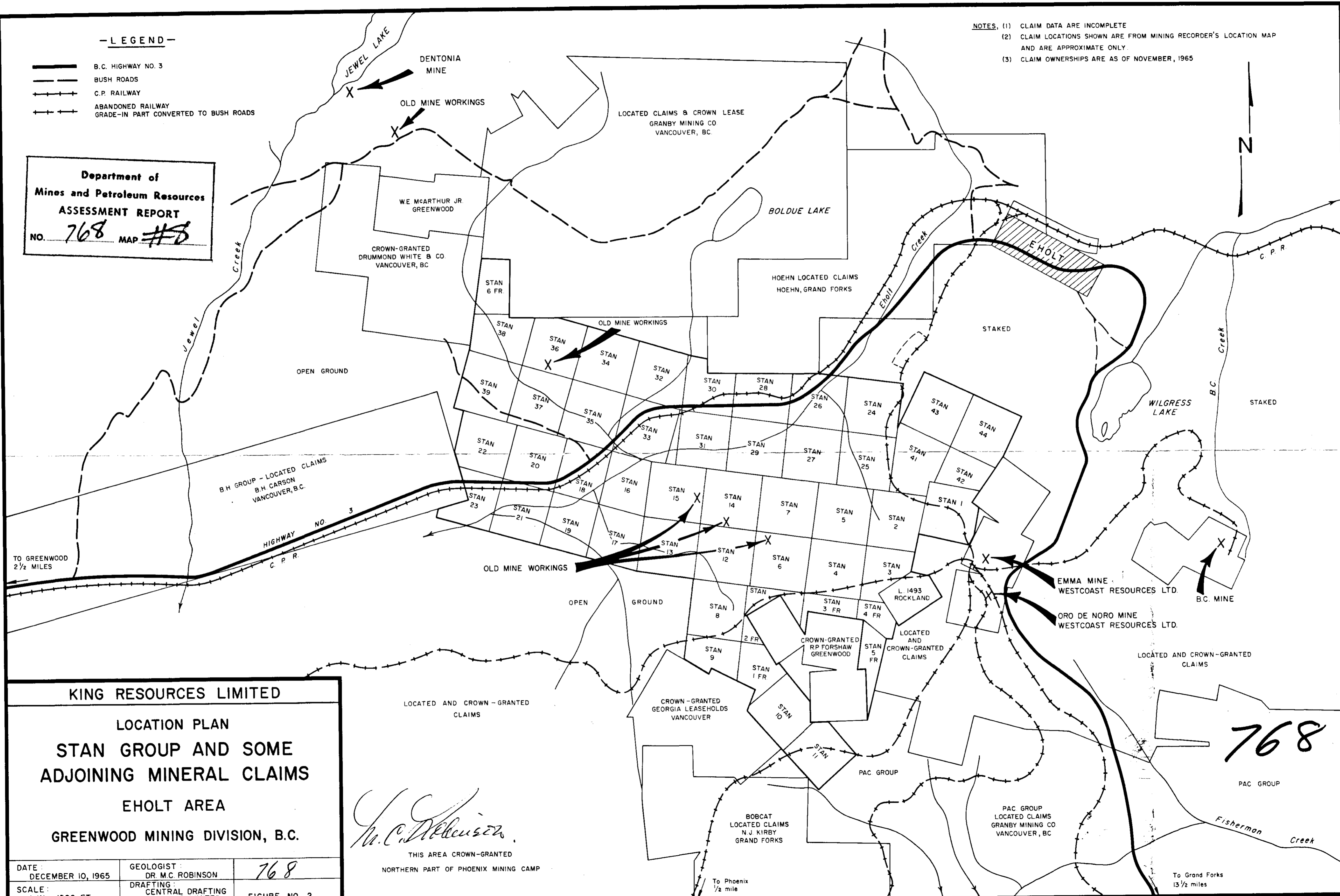
ASSAY CERTIFICATES

**- LEGEND -**

-  B.C. HIGHWAY NO. 3
-  BUSH ROADS
-  C.P. RAILWAY
-  ABANDONED RAILWAY
-  GRADE-IN PART CONVERTED TO BUSH ROADS

- NOTES:** (1) CLAIM DATA ARE INCOMPLETE  
 (2) CLAIM LOCATIONS SHOWN ARE FROM MINING RECORDER'S LOCATION MAP AND ARE APPROXIMATE ONLY.  
 (3) CLAIM OWNERSHIPS ARE AS OF NOVEMBER, 1965

Department of  
**Mines and Petroleum Resources**  
**ASSESSMENT REPORT**  
 NO. **768** MAP # **18**



**KING RESOURCES LIMITED**  
 LOCATION PLAN  
**STAN GROUP AND SOME**  
**ADJOINING MINERAL CLAIMS**  
 EHOLT AREA  
 GREENWOOD MINING DIVISION, B.C.

*W. C. Robinson*  
 THIS AREA CROWN-GRANTED  
 NORTHERN PART OF PHOENIX MINING CAMP

DATE: DECEMBER 10, 1965	GEOLOGIST: DR. M.C. ROBINSON	768
SCALE: 1 IN. = 1500 FT.	DRAFTING: CENTRAL DRAFTING SERVICES LIMITED	FIGURE NO. 2

To Grand Forks  
 13 1/2 miles

To Phoenix  
 1/2 mile

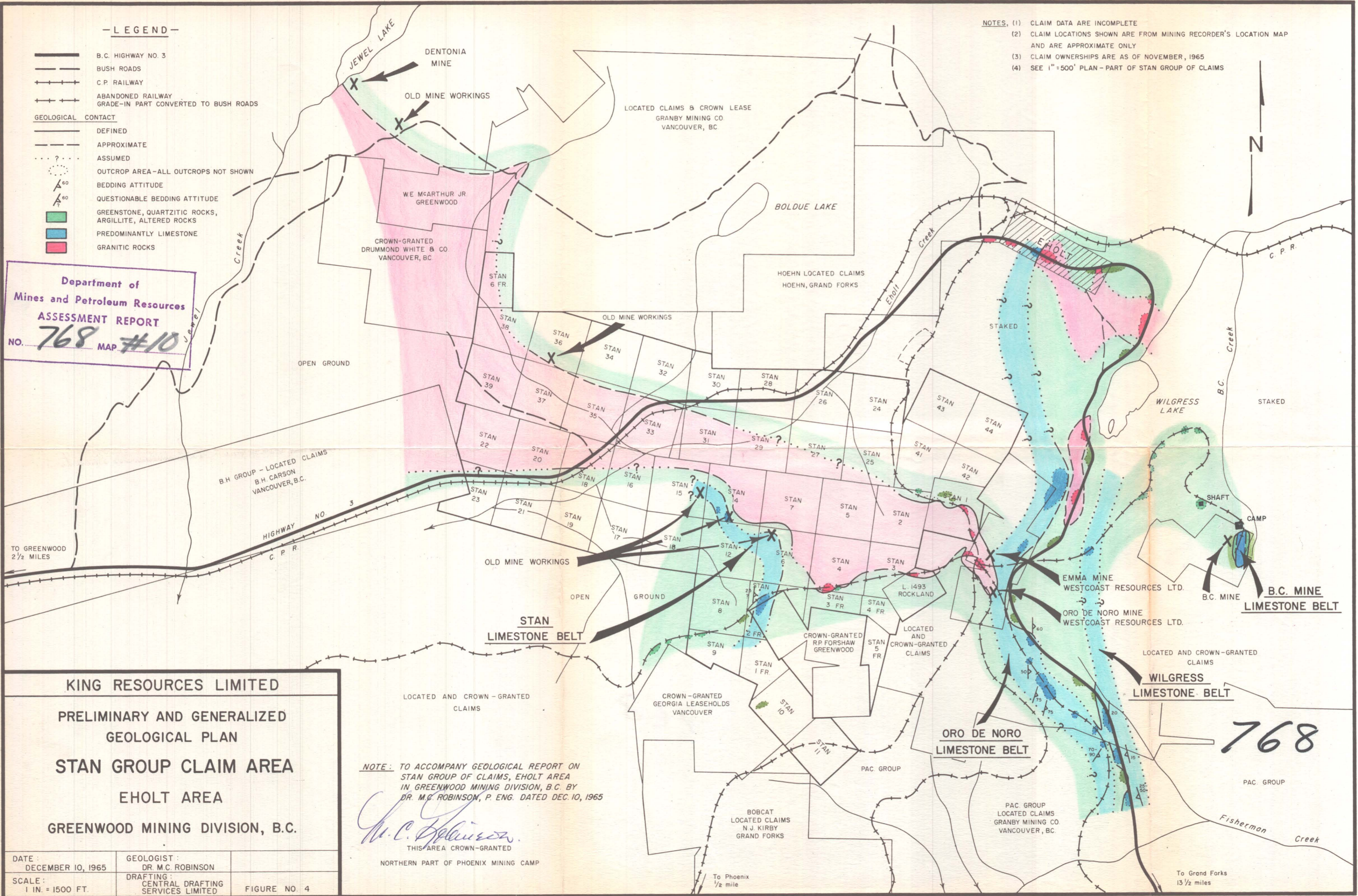


- NOTES: (1) CLAIM DATA ARE INCOMPLETE  
 (2) CLAIM LOCATIONS SHOWN ARE FROM MINING RECORDER'S LOCATION MAP AND ARE APPROXIMATE ONLY  
 (3) CLAIM OWNERSHIPS ARE AS OF NOVEMBER, 1965  
 (4) SEE 1" = 500' PLAN - PART OF STAN GROUP OF CLAIMS

**- LEGEND -**

- B.C. HIGHWAY NO. 3
- BUSH ROADS
- C.P. RAILWAY
- ABANDONED RAILWAY GRADE-IN PART CONVERTED TO BUSH ROADS
- GEOLOGICAL CONTACT**
- DEFINED
- APPROXIMATE
- ASSUMED
- OUTCROP AREA - ALL OUTCROPS NOT SHOWN
- BEDDING ATTITUDE
- QUESTIONABLE BEDDING ATTITUDE
- GREENSTONE, QUARTZITIC ROCKS, ARGILLITE, ALTERED ROCKS
- PREDOMINANTLY LIMESTONE
- GRANITIC ROCKS

Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 768 MAP #10



**KING RESOURCES LIMITED**  
 PRELIMINARY AND GENERALIZED  
 GEOLOGICAL PLAN  
 STAN GROUP CLAIM AREA  
 EHOLT AREA  
 GREENWOOD MINING DIVISION, B.C.

NOTE: TO ACCOMPANY GEOLOGICAL REPORT ON  
 STAN GROUP OF CLAIMS, EHOLT AREA  
 IN GREENWOOD MINING DIVISION, B.C. BY  
 DR. M.C. ROBINSON, P. ENG. DATED DEC. 10, 1965

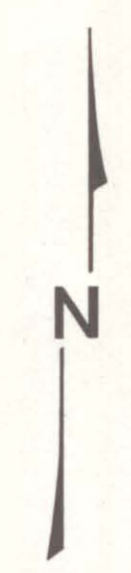
*M.C. Robinson*  
 THIS AREA CROWN-GRANTED  
 NORTHERN PART OF PHOENIX MINING CAMP

DATE: DECEMBER 10, 1965	GEOLOGIST: DR. M.C. ROBINSON	FIGURE NO. 4
SCALE: 1 IN. = 1500 FT.	DRAFTING: CENTRAL DRAFTING SERVICES LIMITED	

768

**LEGEND**

- HIGHWAY No. 3
  - CANADIAN PACIFIC RAILWAY
  - BUSHROAD
  - CAT TRAILS
  - SURVEY STATIONS
  - CLAIM POST-OBSERVED
  - OUTCROP AREA
  - VOLCANIC ROCKS
  - GRANITIC ROCKS; GF GRANITIC FLOAT
  - PREDOMINANTLY GREENSTONE; SOME SEDIMENTARY ROCKS
  - PREDOMINANTLY ARGILLACEOUS AND QUARTZITIC SEDIMENTARY ROCKS; SOME GREENSTONE
  - PREDOMINANTLY LIMESTONE; SOME ARGILLACEOUS SEDIMENTARY ROCKS AND SOME GREENSTONE
  - LAMINATED SILICEOUS ROCKS
- GEOLOGICAL BOUNDARY**
- DEFINED
  - - - APPROXIMATE
  - · · ASSUMED
  - ↗ BEDDING ATTITUDE
  - ↗? QUESTIONABLE BEDDING ATTITUDE
  - ↗? JOINTING AND SHEETING; IN PART, POSSIBLE BEDDING
  - ↗? POSSIBLE FAULT



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 768 MAP #11

NOTE: TO ACCOMPANY GEOLOGICAL REPORT ON  
STAN GROUP OF CLAIMS, EHOLT AREA  
IN GREENWOOD MINING DIVISION B.C. BY  
DR. M.C. ROBINSON, P. ENG. DATED DEC. 10, 1965

*M.C. Robinson*

**KING RESOURCES LIMITED**  
  
GEOLOGICAL PLAN **768**  
PART OF  
**STAN GROUP OF CLAIMS**  
(1-9 INCL. 12, 14, 15, 18 & FR. 1, 2, 3, & 4)  
**EHOLT AREA**  
**GREENWOOD MINING DIVISION, B.C.**

DATE DECEMBER 10, 1965	GEOLOGIST DR. M.C. ROBINSON	FIGURE NO. 5
SCALE 1 IN. = 500 FT.	DRAFTING CENTRAL DRAFTING SERVICES LIMITED	