970

GEOLOGICAL AND GEOCHEMICAL REPORT ON THE

"OSOYOOS" GROUP

OSOYOOS, B.C., OSOYOOS MINING DIVISION

By

R. E. RENSHAW, P. ENG.

49° - 00' N
119° - 35' W

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R. E. RENSHAW P.ENG.
GEOLOGICAL ENGINEER
MINING GEOLOGIST

GEOLOGICAL AND GEOCHEMICAL REPORT ON THE "OSOYOOS" GROUP OSOYOOS, B.C., OSOYOOS MINING DIVISION

INTRODUCTION

This report is prepared at the request of Mr. M. V. Nixon, of Keremeos, B.C. Its purpose was to check the validity of the staking of the claims, map the geology, make a partial geochemical survey of a portion of the claims, assess the economic potentials of the property, and to recommend and layout an exploration program for its development.

Twenty-one days were spent on the property for the field examination in April, 1967 and six days office and geochemical assays.

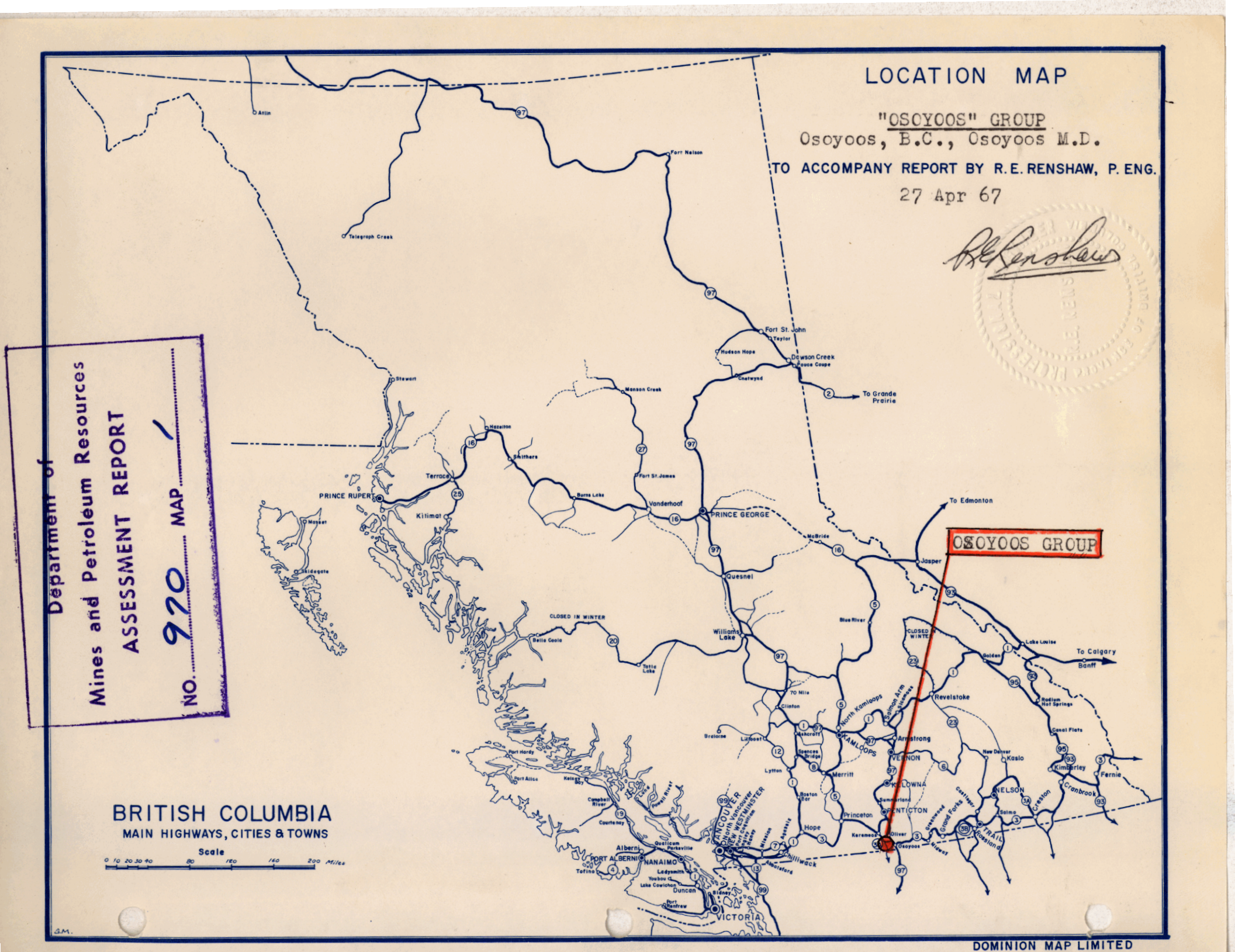
LOCATION

The claims are located 6 miles northwest from Osoyooos, B.C. and all lie ¾ mile north of the International Border. Their approximate geographical location is 49°-00' north latitude and 119 115°-35' west longitude.

ACCESS

Access to the claims is from the paved Southern Trans-Provincial Highway 3A about 6 miles north from Osoyoos and thence by good gravel, all weather logging and ranch roads which lead to all parts of the claims.

Little or no money will be required to build access roads through the claims. BGR



DOMINION MAP LIMITED

TOPOGRAPHY

Topography is not extreme. It ranges from 900 feet at Osoyoos Lake some 6 miles to the east to a maximum of 4500 feet on the higher portions of the claims. The average elevation on the property is about 3500 feet. The hillsides are gentle rolling, modified by glaciation, and have a few gullies formed by arid erosional conditions. A thin mantle of glacial debris covers almost 90% of the claims and outcrops are limited in extent, mainly on the higher portions of the claims.

TIMBER

Timber is relatively scarce on the claims and most of the commercial fir and pine has been logged. However, sawn timbers and lumber can be purchased locally from numerous sawmills in the vicinity.

WATER

No permanent flowing streams are present on the claims. However, there are numerous small lakes which can supply ample water for all mining, milling, diamond drilling, and domestic use.

POWER

No hydro-electric power source is available on the claims. The closest source is at Osoyoos, B.C. At least 6 miles of transmission line would be required to connect with that source.

SUPPLIES

Nearly all supplies can be purchased locally in Osoyoos or Penticton. If they are not available there they can be shipped in from Vancouver within hours by good daily motor freight or air express. RBR

ACCOMODATION

No accomodation is available on the property with the exception of a few old sheds and barns from long abandoned homesteads. No provision for a bunkhouse or cookery need be made as it is less then 30 minutes travel time from Osoyoos to the claims. Ample accomodation is available at that center.

CLIMATE

The climate is arid to semi arid with a total precipitation of about 10 inches per year or less and falls mostly in the form of snow from December to March. Summer temperatures may reach a high of 80-85 degrees while winter lows may reach 20-25 degrees below zero for 1 or 2 weeks in January or February. The usual winter temperatures are seldom below below the zero mark. Climatic conditions are such that year round mining and exploration can be carried out with little or no lost time from inclement weather.

HISTORY

Np previous history of the claims is known but several very old location posts were found indicating that staking had been done 50 or 60 years ago in the afea. Several test pits were also dug at that time on various copper showings on the claims.

CLAIMS

The "Osoyoos" group consists of 96 claims all held by the right of location and comprises some 4800 acres, more or less.

All claims are properly staked and have the proper tags and inscriptions on the posts. The claims are recorded in the Mining Office of the Osoyoos Mining Division of British Columbia and are shown on Goverment Map 82E/4E-M.

The group consists of the following claims:

Pen 1 to 24	Record Numbers 14985 to 15008 Tag Numbers 686823 to 686846 Staked 11 May 66 Recorded 25 May 66
Pal 1 to 12	Record Numbers 15009 to 15020 Tag Numbers 686879 to 686890 Staked 13 May 66 Recorded 25 May 66
Axe 1 to 12	Record Numbers 15021 to 15032 Tag Numbers 704317 to 704328 Staked 16 May 66 Recorded 25 May 66
Hen 1 to 16	Record Numbers 15033 to 15048 Tag Numbers 686847 to 686862 Staked 13 May 66 Recorded 25 May 66
Old 1 to 16	Record Numbers 15049 to 15064 Tag Numbers 686863 to 686878 Staked 13 May 66 Recorded 25 May 66
Joe 1 to 16	Record Numbers 15065 to 15080 Tag Numbers 704301 to 704316 Staked 16 May 66 Recorded 25 May 66

No apparent contraventions are shown on the records but Map 82E/4E-M indicates several contraventions which fall into two categories: valid or invalid.

A. INVALID

This category includes four claims, Orva 14 to 17. These claims are shown on the staking map as covering Old 11 and 12 and Joe 7 and 5. An on-the-ground search revealed that these claims are incorrectly plotted on the map as the Orva posts were found to lie north of Old 1 and 2.

B. VALID

The staking map shows claims Cal 7, 8, 9, 10, 16, 19 and Buck 1 to 3 covers all or parts of Pen claims 3 to 6, 8, 10, and 18 to 22. The location lines for the Cal claims were found slightly to the east of their plotted positions. No Buck posts were found. These claims have been located since 1963 and have had considerable research done on them for the nepheline content of the underlying syenite stock. Hence it is considered that they are properly staked and take precedence over the Pen claims.

ADJACENT PROPERTIES

Utica Mines Ltd. which lies to the northwest of the "Osoyoos" group is currently developing and preparing for production a base metal silver-lead property. Coin Silver Mines Ltd. which are located to the south and east are actively engaged in a program of geophysical exploration, bulldozing, and diamond drilling to prove large tonnages of low grade copper mineralization. Cayun Mines Inc. and Cambri Mines Ltd., both of which are situated to the south in the United States are similarly engaged in developing large low grade porphyry copper types of deposits.

FIELD PROCEDURE

The general geology of the area was compiled and plotted from pace and compass traverses of the claim location lines as well as traverses along the numerous roads through the claims and adjoining ground.

Based upon the results of the general mapping, a grid covering an area approximently 1 mile east-west and ½ mile north was laid out on a grid spacing of 400 feet with stations every 100 feet. Twenty-eight thousand feet of line were cut and chained. All outcrops were plotted on a scale of 1 inch to 200 feet and 280 soil samples taken and tested for the presence of copper by the rubianic acid-acetate method.

GEOLOGY

The area has been partially mapped by the Geological Survey of Canada, Mem 38 Daly, "North American Cordillera, 49th Parallel, 1912", and by a Preliminary Map by Little, Kettle River, West Half. In addition, an airborne magnetometer survey of the 49th parallel has been flown by the Geological Survey.

In general, the northeast and southwest section of the claims is underlain by granitic rocks of the Nelson Intrusives of Jura-Cretaceous age. The central portion is underlain by quartzite, phillite, argillite, and greenstone of the Kobau group of Carboniferous age.

The following formations are present:

MESOZOIC

Jura-Cretaceous
Nelson Intrusives
Quartz Diorite, Granodiorite
Syenite, Nepheline Syenite

PALEOZOIC

Carboniferous
Kobau Group
Quartzite, Phillite,
Argillite, Greenstone

The Kobau group is a highly altered series of sediments and greenstones which form a roof pendant between two stocks or bosses of granitic rocks.

Folding and metamorphism has oblitherated structures but in general they appear to have a northwesterly strike and a southwesterly dip.

Alteration in the quartzite and phillite consists largely of recrystalization of the silica along with the introduction of some carbonate.

Alteration in the argillite consists mainly of minor silicification and some carbonate.

In general the quartzite, phillite, and argillite are buff weathering and highly fractured.

The greenstones show the most alteration. Chlorite, epidote, carbonate, and feldspar are common. In some of the bands enough feldspar has been formed to give a porphyritic texture to the rock. Other bands merely exhibit a recrystalization to form a medium grained dioritic texture.

The quartz diorite is commonly light coloured, medium grained and rich in feldspar and plagioclase. Minor quartz, biotite, and hornblende form the balance of the minerals. A few narrow bands of biotite gneiss are present parallel to the regional structure of the area.

The syeneite is a light coloured, medium grained rock rich in feldspar and a fairly high ferromagnesian mineral content. Certain phases of the syenite grade into nepheline-syenite which may contain as high as 20% nepheline and 15 to 20% ferromagnesian minerals as pyroxene and biotite. This

BR

is the area largely covered by the Buck and Cal claims.

MINERALIZATION

Low grade copper mineralization has been found in all rock types except the syeneite and nepheline syenite. Malachite staining has been found found in three old pits on Joe 5 and 7 associated with regional northwesterly shearing in the sediments. No apparent walls are present. A typical assay from these sheared and altered sediments is: Silver, 0.50 oz/ton; Copper, 0.373%, and 0.004% Molyndenum.

Fine grained chalcocite has been found in the quartz diorite in the northeastern and southwestern section of the claims.

A few almost barren quartz veins of the tension type are present in the quartz diorite and also the sediments,

The general type of mineralization is typical of low grade porphyry copper deposits prevalent in,or associated with,the Jura-Cretaceous intrusions and Carboniferous or Triassic rocks of British Columbia.

GEOCHEMICAL SURVEY AND RESULTS

At each of the stations along the grid lines and base line a soil sample was taken from just beolow the grass roots so that no organic matter was present.

The sample was dried and screened to minus 80 mesh. Approximently 1cc of soil was then disolved in 2 to 3 cc of purified acetic acid which has been buffered with ammonium acetate. After shaking, the solution was filtered on to rubianic acid reaction paper. The presence of copper is

determined by the size and intensity of a black dot appearing on the paper. The test is sensitive to 4 parts per million of copper ions. Standards were set out whereby the background, traces, fair, and good copper content of the soil were established and the results plotted on the geological map.

Traces, fairs, and goods were found to be present both in the sediments and the quartz diorite. At least six anomalous zones were found to be present in a northwesterly striking direction. Two appear to be more than 2400 feet long and vary in width fom 100 to 500 feet. The others are plus 500 feet long and 100 feet wide with at least 1 end open.

ECONOMIC CONSIDERATIONS

The "Osoyoos" group is geologically and structurally well located for the presence of porphyry copper type of mineralization.

Copper has been found in all rock types of rock except the syenite.

Soil sampling has indicated six target zones for exploration.

Little or no prospecting has been done on the other large proportion of the claims and it is considered that they have an equal chance of finding mineralization.

The "Osoyoos" group warrants an extensisve exploration program as outlined under the following heading of RECOMMENDATIONS.

BAR

RECOMMENDATIONS

1. Make a chain and compass survey of the claims and stake any fractions which may be found.

2. Cut a grid over the balance of the claims on a spacing of 400 feet with stations every 100 feet.

3. Map geology

4. Take soil samples and also make a magnetometer survey using a flux gate type of instruement.

5. Bulldoze anomalous areas located by the surveys.

6. Percussion drill targets found by the surveys.

ESTIMATED COSTS

My table of estimated costs to carry out the above program is shown as Appendix "A" of this report.

R. E. Renshaw, P. Eng.
Consulting Geologist
Vancouver, B.C.
27 Apr 67

APPENDIX "A" - TABLE OF ESTIMATED COSTS

1.	Claim Survey	$ 1500.00
2.	Picket lines - 150 miles	10000.00
3.	Geological mapping	1000.00
4.	Soil samples, Magnetometer survey	5000.00
5.	Geochemical and other assays	1000.00
6.	Bulldozing	2500.00
7.	Percussion drilling - 5000 feet	30000.00
8.	Transportation	3000.00
9.	Supplies	3000.00
10.	Engineering and supervision	7500.00
11.	Legal	3000.00
12.	Head office, administration, supplies	8000.00
13.	Reserve for contigencies	9500.00
	Total----------	$85000.00

R. E. Renshaw, P. Eng.
Consulting Geologist
Vancouver, B.C.
27 Apr 67

APPENDIX "B" - CERTIFICATE OF QUALIFICATION

I, Rodney E. Renshaw, hereby certify that:

1. That this report is based upon my personal examination of the "Osoyoos" group.
2. That I am a graduate of the University of British Columbia with a degree in Geological Engineering.
3. That I am a Registered Professional Engineer of the Province of British Columbia.
4. That I Have been practising my profession as a Consulting Geologist during the past 19 years.
5. That I have no interest in the claims or shares of any Company, direct or indirect, nor do I expect to receive any.

R. E. Renshaw, P. Eng.
Consulting Geologist
Vancouver, B.C.
27 Apr 67

THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF MINES
AND PETROLEUM RESOURCES

APPENDIX "C"

MINERAL ACT

FORM B

Affidavit on Application for Certificate of Work

I, Rodney E. Renshaw (Name.) Agent for M. V. Nixon (Name.)

308-535 West Georgia St (Address.) Keremeos, B.C. (Address.)

Vancouver, B.C.

Free Miner's Certificate No. 49883 Free Miner's Certificate No. 46717

Date issued 8 Jun 66 Date issued 19 May 66

make oath and say:—

I have done, or caused to be done, work on the Hen group 1-16 & Pen Group 1-24 Mineral Claim(s)

Record No.(s) 15033 to 15048 - (Hen 1-16), 14985 to 15008 - (Pen 1-24)

situate at Kruger Mtn Area, 49°-00', 119°-35'

in the Osoyoos Mining Division, to the value of at least Four thousand ~~one hundred~~ dollars, since the day of 25 May 66, 19

The following is a detailed statement of such work:—

(Set out full particulars of the work done in the twelve months in which such work is required to be done.)

Geological and Geochemical report, copies of which are attached. This work to count as assessment work on the Hen claims 1 to 16, Record Numbers 15033 to 15048 and Pen 1 to 24, Record Numbers 14985 to 15008, these claims have been grouped. The following account is the allotment of expenses.

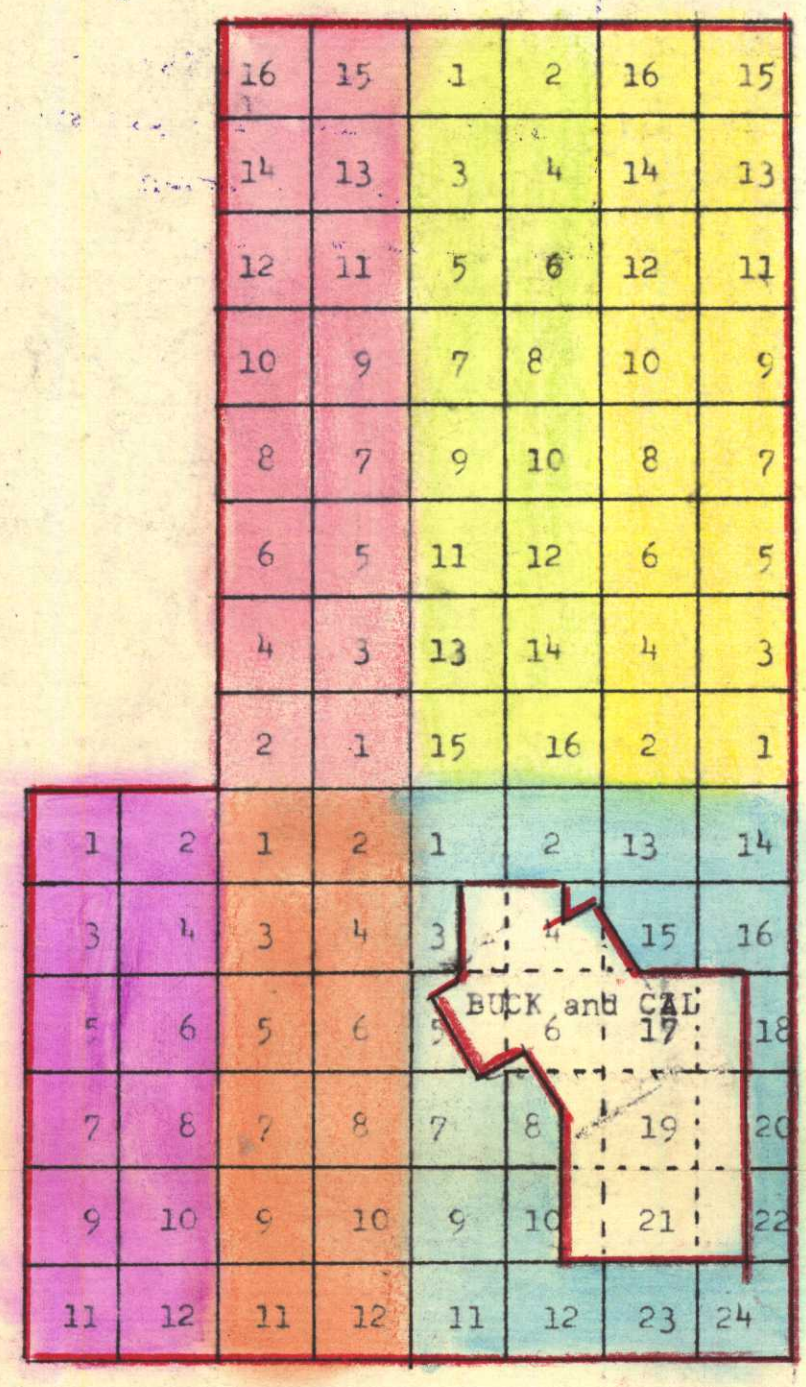
21 APR 67	R.E. Renshaw, P.Eng. 21 days field @ $125/day	$2625.00
1-4 APR 67	Robt Steiner, P.Geol - 4 days field @ 50	200.00
22-27 APR 67	R.E. Renshaw, P.Eng - 6 days office & Lab @ 125/dy	750.00
5,6 May 67	Draftsman - 2 days @ 30	60.00
5 May 67	Stenographer	14.00
1-21 APR 67	field helper 21 days @ 20	420.00
22-27 APR 67	Lab helper 6 days @ 20	120.00
1-21 APR 67	21 days keep @ 12	252.00
	Lab supplies, office supplies	80.00
	Field supplies, pickets, flagging etc	35.00
		$4556.00

(One years work to apply to each clm of Hen & Pen Grp)

That I have not and will not use the work declared herein in any way for the purposes of obtaining tax

"OSCYOOS" GROUP

- Ben 1 to 24
- Pal 1 to 12
- Axe 1 to 12
- Hen 1 to 16
- Old 1 to 16
- Joe 1 to 16



N

Canada

U.S.A.

119°-35'

49°-00'

CLAIM MAP OF "OSOYOOS" GROUP

OSOYOOS, B.C., OSOYOOS MINING DIVISION

Scale: 1 inch to 3000 feet

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 970 MAP 2

970

R. E. Renshaw, P. Eng.
Consulting Geologist
20 Apr 66

1

JURA-CRETACEOUS

NELSON INTRUSIONS

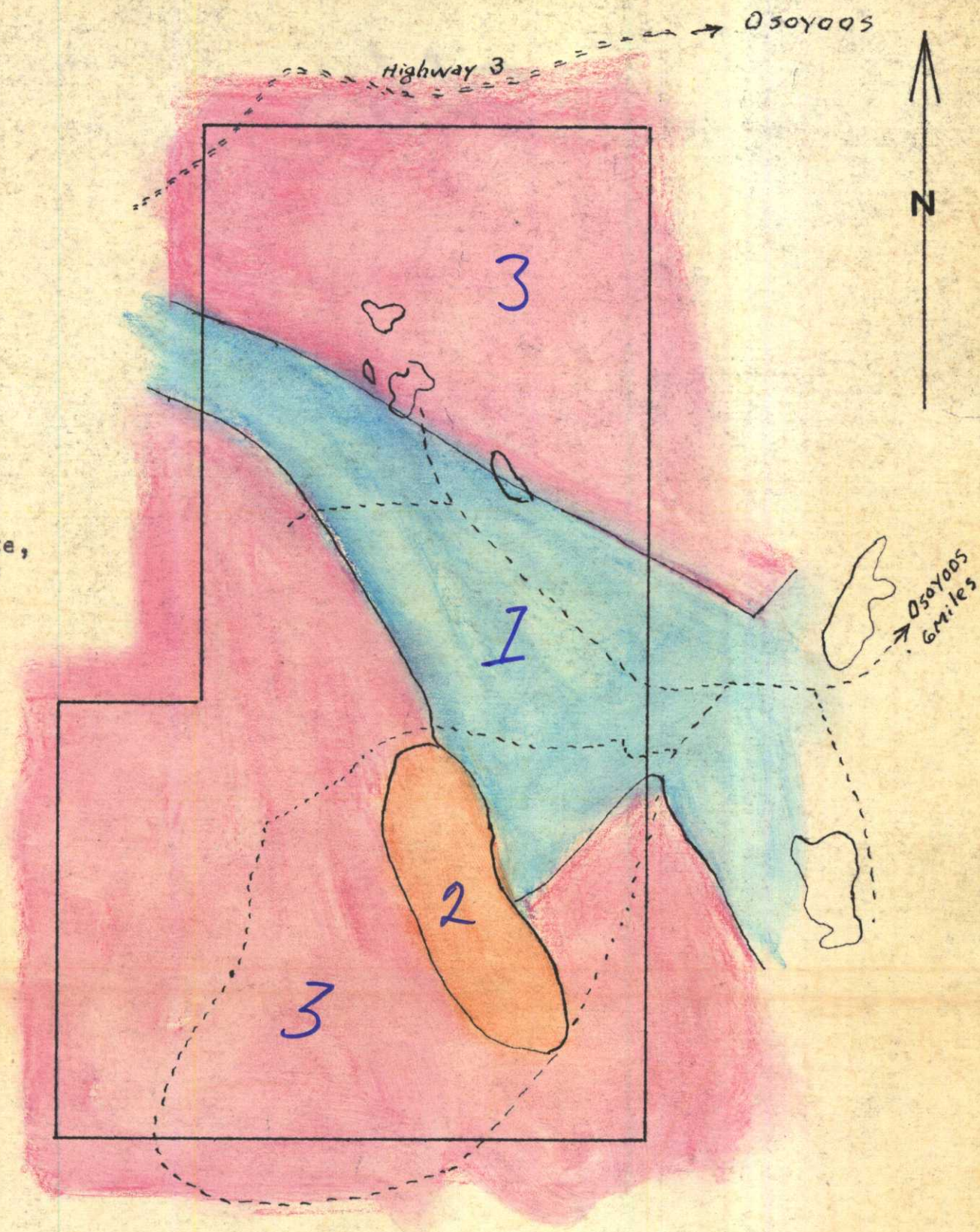
3 Quartz Diorite

2 Syenite and Nepheline Syenite

CARBONIFEROUS

KOBAU GROUP

1 Quartzite, Phillite, Schist, Greenstone



119°-35'

Canada

49°-00'

U.S.A.

MAP SHOWING GEOLOGY AND ROADS OF "OSOYOOS" GROUP

OSOYOOS, B.C., OSOYOOS MINING DIVISION

Scale: 1 inch to 3000 feet

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R. E. RENSHAW, P. Eng.
Consulting Geologist
20 Apr 67

GEOLOGICAL & GEOCHEMICAL MAP OF PART OF OSOYOOS GROUP

Osoyoos Mining Division B.C.

Central Drafting Services Ltd.	By : R.E. RENSHAW P. Eng.
Scale: 1" = 200'	Approved R.E. Renshaw
Date: April 27/67	DWG. No. 3

Legend

- Quartz Diorite
- Quartzite, Phillite, Andesite
- Assumed Contact
- Outcrop
- Copper Showing
- XRP Pack sack Drill Hole

GEOCHEMICAL RESULTS

- Background
- T Trace
- FG Fair – Good
- Anomaly

24 21 16 12 8 4

L24E L20E L16E L12E L8E L4E LOE

Joe 10 | Joe 9
Joe 8 | Joe 7

Old 7 | Old 8
Old 9 | Old 10

Old 9 | Old 10
Old 11 | Old 12

Hen 6 | Hen 5
Hen 4 | Hen 3

Base Line

LAKE

Bulldoze

XRP

L 263S
L 975S
L 3094

To OSOYOOS

910