

800181

REVISED REPORT

THE GRANITE-POORMAN TAILINGS

NELSON, B.C., CANADA

**Prepared for Mr. B. Luckman
Nye Resource Development Ltd.**

November 2, 1987

GENERAL

The GRANITE-POORMAN was first brought into production as a gold mine in 1889 and, for all practical purposes, continued in operation until early 1954. During this period of time, some 200,000 tons of ore were mined and 174,000 tons of ore were milled on site resulting in recovery of 65,000 ounces of gold together with 27,000 ounces of silver, 3,500 lbs. of copper, 51,000 lbs. of lead and 33,000 lbs. of zinc.

In November of 1947, a 125 ton per day capacity cyanide mill was completed at the mine site, the first gold bar being poured on December 17th of that year. During the years 1947 to 1954, considerable amounts of ore from the POORMAN were processed through the mill. Ore from several other local mines was also processed on a "custom" basis. The tailings from the mill were piped or flumed to a tailings pond situated on a 30 acre site adjacent to the mill.

An examination of available records and an on-site estimation indicate that at the time of the 1954 closure, at least 200,000 tons of tailings had been deposited. The character of these tailings differ, however, in one major respect. From 1889 until 1946, 100,000 tons of ore were processed without the use of cyanide. From the opening of the cyanide mill in 1947 until 1954, a further 100,000 tons of tailings from POORMAN ore and from a large number of "custom" millings were deposited in the pond. As a result, the pond now consists of 100,000 tons of tailings which were not treated by cyanide overlain by a further 100,000 tons of tailings which had been treated by cyanide. Recoveries from the original ore amounted to 31,500 ounces of gold and 14,000 ounces of silver and from the cyanided deposition 34,000 ounces of gold and 13,000 ounces of silver were recovered.

It is generally accepted that tailings material will contain a minimum of 10% of the metals present in the ore originally mined. Thus, taking the totals of 65,500 ounces of gold and 27,000 ounces of silver as representing 90% of metals in the original ore, it is more than reasonable to assume that a minimum of 7,200 ounces of gold and 3,000 ounces of silver remain in the tailings material.

(All statistics quoted are taken from the Minister of Mines Reports published by the Department of Mines, Province of British Columbia 1889-1956 - copies of the pertinent reports are appended hereto)

PERIODIC REACTIVATION OF CYANIDE

It has been established in recent years that rain, falling on tailings material and carrying water and infinitesimal quantities of oxygen down through the material will, to a limited extent, reactivate the cyanide already present and renew the cyanide recovery process. The cyanide so reactivated will soak deeper into the pile dissolving additional gold. As the cyanide loses its oxygen, the gold is precipitated from solution.

PRESENCE OF IRON

Where gold is associated with iron, as it was in the POORMAN mine, it is resistant to recovery by cyanide in the short period of time during which the crushed ore is passing through the mill process. After deposition in the tailings pond, however, and over an extended period of time, the iron succumbs to the normal process of oxidization and the gold associated with it, and unrecovered in the mill process, is released.

MILL "TUNE-UP"

For each different type of ore milled it is necessary to adjust and tune the action(s) of the mill to achieve the optimum recovery of precious metals from the ore. Given the number of different lots of ore custom processed by this particular mill, a strong likelihood exists that quantities of high value material were carried into the tailings pond before those ideal circumstances for recovery could be achieved.

MILL FLUSHING

As the characteristics of different ores require the use of differing reagents and chemicals to suppress the actions of undesirable elements within the ore it is customary, after processing each different "batch" of custom ore to "flush" the mill circuit into the tailings pond. This again results in the occasional deposition of high grade material into the pond.

The foregoing notes are provided for the general information of the reader but also provide some basis on which to consider the assay results of samples which have been taken from the subject pond and which are included in the following pages.

LOCATION

The subject property is situated some 7 miles West of Nelson, B.C. and lies 400 yds from the main highway. Access to the property is achieved by a year round gravel road in excellent condition.

WATER

Water is obtainable from a nearby year round creek or from the river. A dependable alternate source of water would be readily obtainable from shallow on-site wells.

POWER

Kootenay Power and Light Company power lines run along the perimeter of the property.

OWNERSHIP

The property is presently owned by Nye Resource Development Ltd., a non-reporting British Columbia company ("Nye"). Nye recently purchased the property from Cominco Ltd. who are a major, multi-faceted Canadian mining corporation. An exclusive option to purchase the property has been obtained by Sierra Mining Corporation Ltd.

EXPLORATION

Initially, a 4 foot deep hole was dug at the western end of the tailings pond and samples taken from the 1', 2', 3' and 4' levels. These samples were batched and 1 kilo of the resulting material delivered to SGS General Testing Laboratories in Vancouver. The material was fire assayed for gold content and was found to contain 0.712 ounces of gold per ton. (Assay certificate attached.) This sample is identified as sample "A".

A further 6 sample holes were then dug to a depth of 4 feet each at the locations shown on the attached sketch map. Six 1 kilo samples of this material were delivered to SGS General Testing Laboratories for assay, identified as samples 1, 2, 3, 4, 5 and 6 and the following results were obtained.

Ounces of Gold per ton

Sample 1	.002	Sample 4	.002
Sample 2	.002	Sample 5	.160
Sample 3	.030	Sample 6	.036

On October 14th, a bulk sample of the POORMAN tailings material was delivered to the Sando Refinery, River Rd., Delta, B.C. where the various tests were carried out under the supervision of Mr. Fred Burgess, a licensed provincial assayer.

The material was run across a Whilfley Table and an excellent separation of the heavy mineral fraction was obtained, forming a very clear black band on the table separated at some distance from the lighter 'middlings'. The concentration achieved was approximately 100:1. Assays were then carried out on the table concentrate, the middlings and the tailings. The results were as follows (copy of Certificate of Assay appended):

Table Concentrate:	3.566	oz/gold/ton
Middlings	0.314	oz/gold/ton
Tails	0.003	oz/gold/ton

If this sample is representative, it would indicate:

1. Approximately 90% of the values in the 200,000 tons of tailings material could be recovered by mechanical means, without the use of chemicals.
2. The overall gold content appears to fall within the +/- .04 oz/gold/ton range.

(a check assay was carried out by Fred Burgess of the material delivered for bulk testing with the result .05 oz/ton)

CERTIFICATE OF ASSAY

Date: October 14, 1986

File: 8610-0257



SGS SUPERVISION SERVICES INC.

General Testing Laboratories Division

1001 East Pender Street,
Vancouver, B.C., Canada. V6A 1W2
Telephone: (604) 254-1647
Telex: 04-507514

TO: TRANSVAAL ZAMBESI MINING
12380 Flury Dr.
Richmond, B.C.

We hereby certify that the following are the results of assays on: **sand samples**

MARKED	GOLD	SILVER	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
	oz/st							
T 21	0.002							
T 22	0.002							
T 23	0.030							
T 24	0.002							
T 25	0.160							
T 26	0.036							

Handwritten: Average .03866

NOTE: REJECTS RETAINED ONE MONTH. PULPS RETAINED THREE MONTHS ON REQUEST PULPS AND AND REJECTS WILL BE STORE FOR A MAXIMUM OF ONE YEAR.

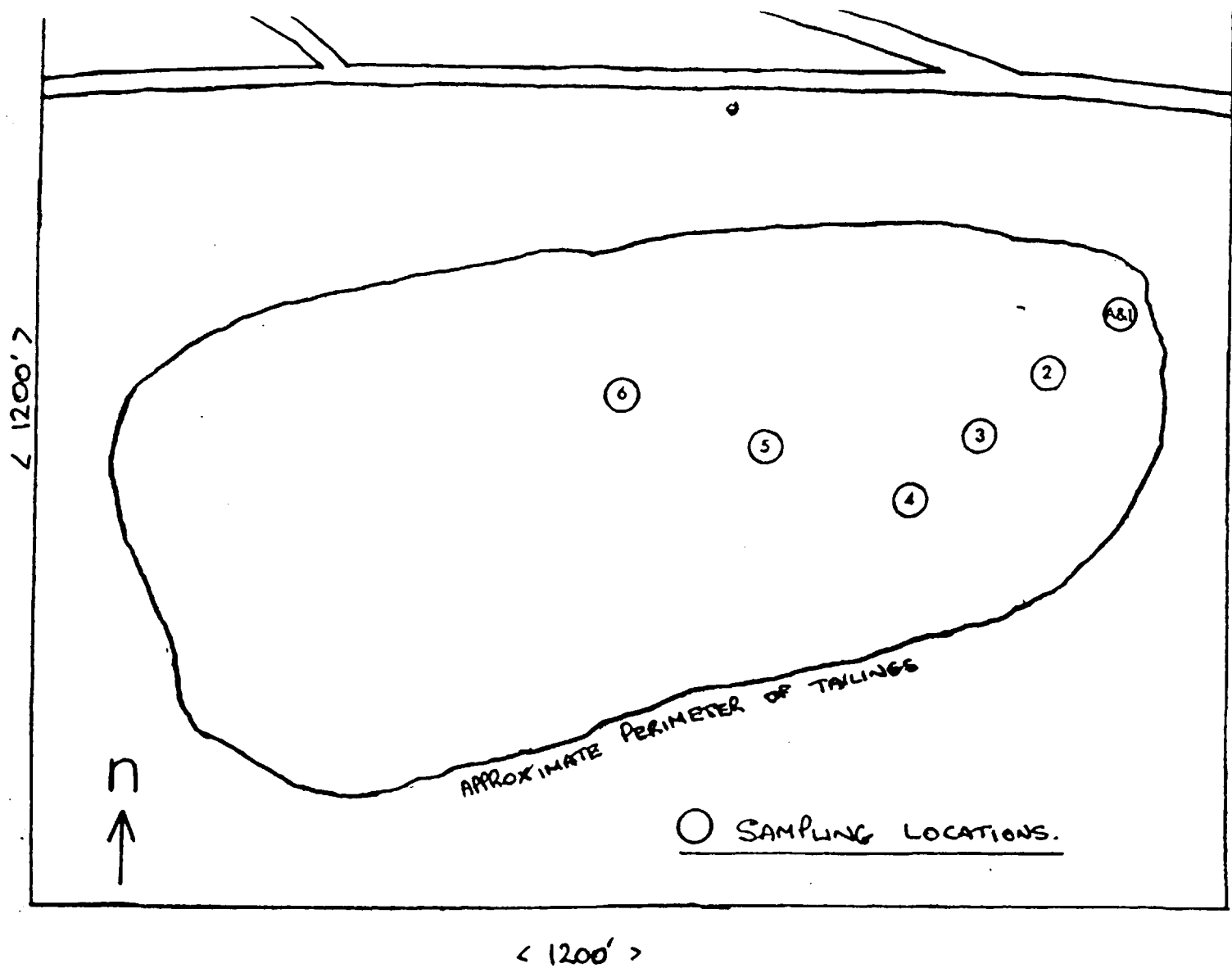
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L. Wong

PROVINCIAL ASSAYER

Analytical and Consulting Chemists, Bulk Cargo Specialists, Surveyors, Inspectors, Samplers, Weighers

MEMBER: American Society For Testing Materials • The American Oil Chemists Society • Canadian Testing association
REFEREE AND OR OFFICIAL CHEMISTS FOR: National Institute of Oilseed Products • The American Oil Chemists' Society
OFFICIAL WEIGHMASTERS FOR: Vancouver Board Of Trade



POORMAN MINE TAILINGS

SAMPLE/ASSAY MAP

Location: LOT 6584 - Nelson Land District - B.C. (+/- 32 acres, 1200' x 1200')

Each square on test map represents 30' x 30' and approx. 400 tons material.

<u>ASSAYS</u>	<u>Number</u>	<u>Depth</u>	<u>Assay Result (oz/ton gold)</u>
	A	Cut of 1', 2', 3' & 4'	<u>.712</u>
	1	4'	<u>.002</u>
	2	4'	<u>.002</u>
	3	4'	<u>.030</u>
	4	4'	<u>.002</u>
	5	4'	<u>.160</u>
	6	4'	<u>.036</u>
			<u>.135</u> AVERAGE

CERTIFICATE OF ASSAY

Date: Sept. 29, 1986

File: 8609-2254



SGS SUPERVISION SERVICES INC.
General Testing Laboratories Division

1001 East Pender Street,
 Vancouver, B.C., Canada. V6A 1W2
 Telephone: (604) 254-1647
 Telex: 04-507514

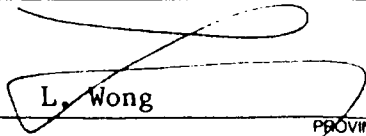
TO: TRANSVAAL ZAMBESI MINING
 12380 Flury Dr.
 Richmond, B.C.

We hereby certify that the following are the results of assays on: ore sample

MARKED	GOLD	SILVER	platinum	xxxxxx	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx	xxxxxxx
	oz/st		oz/st					
"A"	0.712		0.001					

NOTE: REJECTS RETAINED ONE MONTH. PULPS RETAINED THREE MONTHS ON REQUEST PULPS AND AND REJECTS WILL BE STORE FOR A MAXIMUM OF ONE YEAR.

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 L. Wong
 PROVINCIAL ASSAYER

Analytical and Consulting Chemists, Bulk Cargo Specialists, Surveyors, Inspectors, Samplers, Weighers

MEMBER: American Society For Testing Materials • The American Oil Chemists Society • Canadian Testing association
 REFEREE AND OR OFFICIAL CHEMISTS FOR: National Institute of Oilseed Products • The American Oil Chemists' Society

To:

Transvaal Zambesi Mining

12380 Flury Drive

Richmond, B.C.

Attention: Steve Smith/John Dale



Date: October 17, 1986

Control No. 10215

Certificate of Assay

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

Sample Identification	GOLD	SILVER					
	Ounces Per Ton	Ounces Per Ton	Percent	Percent	Percent	Percent	Percent
Table Conc.	3.566						
Middlings	0.314						
Tails	0.003						

Note: Pulps retained three months.

Rejects retained two weeks.

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SANDO INDUSTRIES LTD.


 Certified Provincial Assayer

CERTIFICATE OF ASSAY

Date: Sept. 29, 1986
File: 8609-2254



SGS SUPERVISION SERVICES INC.
General Testing Laboratories Division
1001 East Pender Street,
Vancouver, B.C., Canada. V6A 1W2
Telephone: (604) 254-1647
Telex: 04-507514

TO: TRANSVAAL ZAMBESI MINING
12380 Flury Dr.
Richmond, B.C.

we hereby certify that the following are the results of assays on:

ore sample ^{V.A.} **A**

MARKED	GOLD	SILVER	platinum	xxxxx	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx
	oz/st		oz/st					
	0.712		0.001					

ASSAY 1

NOTE: REJECTS RETAINED ONE MONTH. PULPS RETAINED THREE MONTHS ON REQUEST PULPS AND AND REJECTS WILL BE STORE FOR A MAXIMUM OF ONE YEAR.
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L. Wong
PROVINCIAL ASSAYER

CERTIFICATE OF ASSAY

Date: October 14, 1986

File: 8610-0257



SGS SUPERVISION SERVICES INC.

General Testing Laboratories Division

1001 East Pender Street,
Vancouver, B.C., Canada. V6A 1W2
Telephone: (604) 254-1647
Telex: 04-507514

TO: TRANSVAAL ZAMBESI MINING
12380 Flury Dr.
Richmond, B.C.

We hereby certify that the following are the results of assays on: sand samples

MARKED	GOLD	SILVER	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
	oz/st							
T 21	0.002							
T 22	0.002							
T 23	0.030							
T 24	0.002							
T 25	0.160							
T 26	0.036							

ASSAY 2

AVERAGE
.03866

NOTE: REJECTS RETAINED ONE MONTH. PULPS RETAINED THREE MONTHS ON REQUEST PULPS AND AND REJECTS WILL BE STORE FOR A MAXIMUM OF ONE YEAR.

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L. Wong

PROVINCIAL ASSAYER

Analytical and Consulting Chemists, Bulk Cargo Specialists, Surveyors, Inspectors, Samplers, Weighers

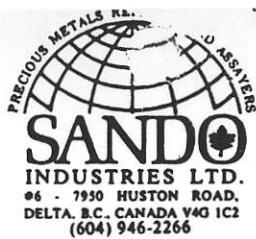
MEMBER: American Society For Testing Materials • The American Oil Chemists Society • Canadian Testing associatio
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Date: October 17, 1986

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Attention: Steve Smith/John Dale

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

Sample Identification	GOLD	SILVER					
	Ounces Per Ton	Ounces Per Ton	Percent	Percent	Percent	Percent	Percent
Table Conc.	3.566						
Middlings	0.314						
Tails	0.003						

Handwritten notes: 100% (circled), .035, .003, 1500, 9.850

ASSAY 3

Note: Pulps retained three months.

Rejects retained two weeks.

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SANDO INDUSTRIES LTD.

A. P. Burgess

Certified Provincial Assayer

SIC 1000 3

SEE PARA 6

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

HORIZON FINANCIAL SERVICES
10211 FUNDY ROAD
RICHMOND, B.C.

CERTIFICATE#: 86655
INVOICE#: 7202
DATE ENTERED: 86-11-20
FILE NAME: HOR86655
PAGE # : 1

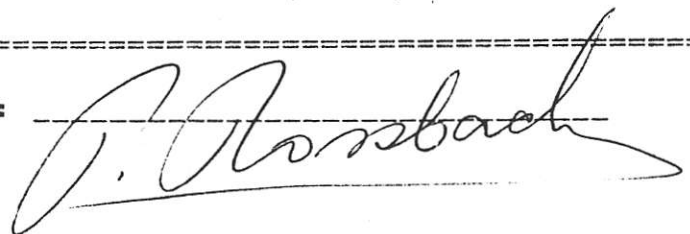
SUBJECT: GRANITE POOR MAN

TYPE OF ANALYSIS: ASSAY

PRE FIX	SAMPLE NAME	oz/t Au
A	A-1	0.013 <i>AE</i>
A	A-2	0.004
A	A-3	0.004
A	A-?	0.003
A	B-1	0.015
A	B-2	0.007
A	B-3	0.005
A	C-1	0.016
A	C-2	0.008
A	C-3	0.001
A	C-4	0.002
A	D-1	0.001
A	D-2	0.002
A	D-3	0.019
A	D-4	0.006
A	D-5	0.002
A	E-1	0.003
A	E-2	0.006
A	E-3	0.014
A	E-4	0.005
A	E-5	0.003
A	F-1	0.001
A	F-2	0.011
A	F-3	0.014
A	F-4	0.009
A	F-5	0.003
A	G-1	0.008
A	G-2	0.007
A	G-3	0.009
A	G-4	0.007
A	G-5	0.007
A	H-1	0.004
A	H-2	0.010
A	H-3	0.006
A	H-4	0.009
A	H-5	0.010
A	I-1	0.003
A	I-2	0.011
A	I-3	0.009
A	I-4	0.009

ASSAY 5

CERTIFIED BY :



SEE KORA 6

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : HORIZON FINANCIAL SERVICES
10211 FUNDY ROAD
RICHMOND, B.C.

CERTIFICATE#: 86655
INVOICE#: 7202
DATE ENTERED: 86-11-20
FILE NAME: HOR86655
PAGE # : 2

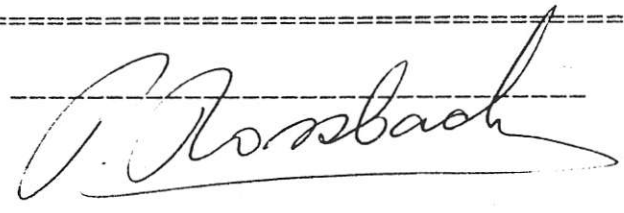
PROJECT: GRANITE POOR MAN
TYPE OF ANALYSIS: ASSAY

PRE FIX	SAMPLE NAME	oz/t Au
A	I-5	0.008
A	J-2	0.016 ²⁰⁰
A	J-3	0.012
A	J-4	0.007
A	J-5	0.006
A	K-3	0.009
A	K-4	0.008
A	K-5	0.008
A	L-3	0.006
A	L-4	0.008 SW.
A	MIKE	0.007

AV . 0075

ASSAY 5

CERTIFIED BY :



PHONE: (604) 980-5814 OR (604) 988-4524

TELEX: VIA USA 7601067 UC

Certificate of ASSAY

Company: PAUL LUYKX
Project:
Attention: PAUL LUYKX

File: 6-1210
Date: NOV 26/86
Type: ROCK ASSAY

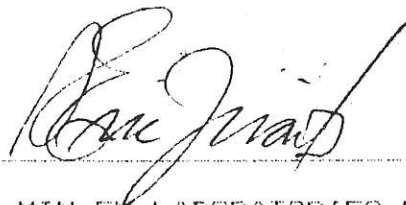
We hereby certify the following results for samples submitted.

Sample Number	AU G/TONNE	AU OZ/TON
A-2	0.15	0.004
D-3	0.71	0.021
G-1	0.48	0.014
G-2	0.34	0.010
H-1	0.26	0.008
X-6	0.18	0.005
X-7	0.25	0.007
X-8	0.42	0.012
X-9	0.33	0.010
X-10	0.21	0.006

AU . 0097

ASSAY 6

Certified by



MIN-EN LABORATORIES LTD.

CDN RESOURCE LABORATORIES LTD.

#8, 7550 RIVER ROAD, DELTA, B.C. V4G 1C8 / TEL. (604) 946-4448

2E 1444 (180)
9210

*** ASSAY REPORT ***

To: Granite Poorman Group
12380 Flury Drive
Richmond, B.C.
V6V 1H5

Number: 86397
Date: November 25, 1986
Proj.:

Attn: John Dale

	Au g/T
A2	0.012
BS1	0.093
BS2	0.140
BS3D	0.013
C1	0.026
D3	0.023
G2	0.013
H1	0.003
JC1	0.284
JC2	0.819
JH	0.003
JT	0.051
X11	0.003
X12	0.003
X13	0.012
X14	0.006
X15	0.009

ASSAY 8

Duncan Sandison
Licensed Assayer of British Columbia

ASSAY

CELL 1	2.573 0.920	oz/ton Au oz/ton Ag
CELL 2	0.332 0.346	oz/ton Au oz/ton Ag
TAIL	0.036 0.704	oz/ton Au oz/ton Ag

10

Note: duplicates for cell 1 assayed

3.806 oz/ton
1.340 oz/ton

- possible free gold

TEST NUMBER: 6788-1 Tabling

PRODUCT	WEIGHT		ASSAYS		UNITS		% DIST	
	GMS	%	Au	Ag	Au	Ag	Au	Ag
Pan Con	28.2	0.05	276.896	20.045	13.938	1.009	47.35	2.01
Mids 1 (Pan Tail)	5264.0	9.40	0.923	0.612	8.672	5.750	29.46	11.48
Mids 2 (Table Mids)	5859.0	10.46	0.313	0.453	3.273	4.737	11.12	9.45
Table Tails	43261.0	77.22	0.046	0.500	3.552	38.609	12.07	77.06
Sweco O/S	1612.0	2.88	0.000	0.000				
CALC HEAD	56024.2	100.0	0.294	0.501	29.44	50.11	100.00	100.00

BACON
DOWARDSON

ASSAY 11.

SUMMARY

56 KILOS OF MATERIAL WERE PANNED DOWN TO 28.2 GRAMS. WHICH CONTAINED 47.35% OF GOLD REAGENT. PAN TAILS (+ 5 KILOS) CONTAINED FURTHER 29.46% OF GOLD - I.E. 10% OF MATERIAL, MECHANICALLY SEPARATED, CONTAINED 70% OF GOLD. GOLD CONTENTS OF 56 KILO SQUARE WGS. • 294 02. AU. TO TON.

02/TON AU

RE. DON BACON

KILOS

CDN RESOURCE LABORATORIES LTD.

#8, 7550 RIVER ROAD, DELTA, B.C. V4G 1C8 / TEL. (604) 946-4448

** ASSAY REPORT **

To: Granite Poorman Group
12380 Flury Drive
Richmond, B.C.
V6V 1H5

Number: 86420
Date: December 19, 1986
Proj.:

Attn: John Dale

	Au oz/T
Small Jig Tails	0.010
Large Jig Tails	0.008
First Run Large Jig Con	0.021
Final Jig Con	0.220 VG

VG indicates visible gold.


Licensed Assayer of British Columbia

CDN RESOURCE LABORATORIES LTD.

#8, 7550 RIVER ROAD, DELTA, B.C. V4G 1C8 / TEL. (604) 946-4448

*** ASSAY REPORT ***

To: Granite Poorman Group
12380 Flury Drive
Richmond, B.C.
V6V 1H5

Number: 86410
Date: December 9, 1986
Proj.:

Attn: John Dale (665-3830)

	Au o/T
2J Clay	0.012
2JT	0.082
2JC-1	1.653 VG
2JC-2	0.417 VG

JIC AVERAGE

VG indicates visible gold.

$$\begin{array}{r} 1.653 \\ + .417 \\ \hline 2.070 \\ \hline 2 \end{array} = 1.035$$

$$\frac{1.035}{6.5} = \underline{\underline{.16}}$$

Duncan Sandison
Licensed Assayer of British Columbia

APPENDIX 1 - TITLE DOCUMENTS

of indefeasible Title is void as
of any person adversely in actual
of right entitled to the land
of the time of the application
of the title was granted, and who
of the land, and is subject to—

of exceptions or reservations con-
of a special grant from the Crown:
of Provincial tax, rate, or
of the date of the application for
of made or made a lien or which
of is imposed or made a lien on

of charge, rate, or assessment at
of application for registration
of may thereafter be imposed
of which had theretofore been
of improvements or otherwise
of not then due and payable,
of charge, rate, or assessment
of public corporate body having
of an area in which the land

of tenement for lease, for a period
of five years, where there is
of under the same:

of way or right-of-way, water-
of of water, or other public

of appropriation by Statute:
of mechanics' lien, judgment,
of charge, or any assignment for
of creditors or receiving order or
of made under the "Bankruptcy
of Act" the date of the applica-
of tion:

of exemption, reservation, charge,
of and/or endorsed hereon:

of person to show that the
of area of the land is by wrong
of parcels or parcels improperly
of made:

of person to show fraud, wherein
of or wherein the person
of is not the registered owner
of of title otherwise than bona
of participated in any degree:
of of reversion, right of reverter, or
of of the land by the "Forest
of Act" and endorsed hereon.

IF ABOVE
PLAN F150

From Certificate No. 31349-I



D.D. 71485-I

No. 71598-I

Certificate of Indefeasible Title

Date of Application for registration, the Thirteenth day of September 11:05 A.M., 19 47

Register, Vol. 280

This is to certify that THE CONSOLIDATED MINING AND SMELTING COMPANY OF CANADA LIMITED, Trail, B.C.

is absolutely and indefeasibly entitled in fee-simple, subject to such charges, liens, and interests as are notified by endorsement hereon, and subject to the conditions, exceptions, and reservations set out hereon, to that

Nelson Assessment District.
piece of land situate in the

and Province of British Columbia, and more particularly known and described as:—

Parcel "A" (D.D. 12885-I) save and except that part shown outlined in red on Explanatory Plan 33491-I, of Lot Six Thousand Five Hundred and Eighty Four (6584), Kootenay District, -and- Parcel Four (4) (D.D. 17572-I) and Parcel (D.D. 12886-I) save and except thereout Part shown outlined in red

APPENDIX II - MINISTER OF MINES REPORTS

04 au?

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

00020000

RESOURCE DATA SECTION

VERSION 1.1

NAME(S) GRANITE-POORMAN

N.T.S. 082F06V

MI 082FSW086

LAT 4928.3
LONG 11722.7
ELEVATION 1167
MINING DIVISION NELS
LOCATION ACCURACY 1

UTMZ 11U
UTMN ME5480000
UTME ME0472500
MINERAL STATUS
DEPOSIT TYPE
MINDEPID 01035

COMMODITIES PRESENT

AU
AG
PB
ZN
CU
WO
CD
GR

MINERALS PRESENT

GLEN
GOLD
SCLT
PYRT
Q.CP

GEOLOGICAL COMMENT

A FISSURE VEIN STRIKES THROUGH GRANODIORITE OF THE NELSON BATHOLITH. THE GANGUE IS QUARTZ WITH PYRITE AND ASSOCIATED WITH GALENA AND CHALCOPYRITE. FREE GOLD AND SCHEELITE HAVE BEEN REPORTED. THE VEINS ARE NARROW BUT PERSISTANT. FIVE SEPARATE VEINS HAVE BEEN REPORTED.

NATIONAL MINERAL INVENTORY NO.82F6 AU3

PRODUCED PRODUCTION DATA

TONNES MINED	TONNES MILLED	GOLD (G)	SILVER (G)	COPPER (KG)	LEAD (KG)	ZINC (KG)	MOLY (KG)	OTHER
1,089	0	15,552	0	0	0	0	0	0
1,361	0	15,552	0	0	0	0	0	0
181	0	9,331	0	0	0	0	0	0
2,268	0	23,327	0	0	0	0	0	0
907	0	31,103	0	0	0	0	0	0
5,742	0	158,003	0	0	0	0	0	0
454	454	9,331	0	0	0	0	0	0
734	734	11,104	3,888	0	0	0	0	0
10,888	10,744	125,376	0	0	0	0	0	0
6,177	6,177	65,161	13,468	0	0	0	0	0
5,730	5,185	40,932	21,024	0	0	0	0	0

	1.007	1.007	15.675	6.563	0	0	0	0	0
	2.189	2.189	22.208	10.544	0	0	0	0	0
	1.950	1.950	20.124	10.948	211	0	0	0	0
1907	5.496	5.496	73.434	33.653	1,340	0	0	0	0
1908	7.348	7.348	70.137	24.198	0	0	0	0	0
1909	9.878	9.878	109.358	43.606	0	0	0	0	0
1910	6.949	6.949	68.209	21.088	0	0	0	0	0
1911	9.502	9.502	77.478	32.783	0	0	0	0	0
1912	7.100	7.100	63.823	35.737	0	0	0	0	0
1913	1.134	1.134	9.642	4.641	0	0	0	0	0
1915	1.361	1.361	23.327	0	0	0	0	0	0
1916	5.443	5.443	85.533	0	0	0	0	0	0
1917	726	726	19.999	4.541	0	0	0	0	0
1919	4	0	249	311	0	0	0	0	0
1922	5	0	311	498	0	0	0	0	0
1923	181	181	4.603	1.306	0	0	0	0	0
1924	59	59	1.991	653	31	0	0	0	0
1925	340	340	20.341	1.244	0	0	0	0	0
1926	9	0	891	16.982	0	2,836	0	0	0
1932	124	0	93	62	0	0	0	0	0
1933	501	0	12.348	11.664	0	0	0	0	0
1934	511	0	13.561	19.719	0	0	0	0	0
1935	756	544	7.278	9.580	0	0	0	0	0
1936	1.319	1.282	17.200	8.149	0	0	0	0	0
1937	2.377	2.180	27.029	17.044	0	0	0	0	0
1938	1.371	1.226	13.968	7.371	0	0	0	0	0
1939	1.176	0	22.363	8.087	0	0	0	0	0
1940	708	0	14.992	17.542	0	0	0	0	0
1941	1.523	0	37.572	49.858	0	0	0	0	0
1942	1.031	0	27.184	34.244	0	0	0	0	0
1943	216	0	4.821	7.091	0	0	0	0	0
1944	138	0	3.266	5.692	0	0	0	0	0
1945	28	0	684	1.182	0	0	0	0	0
1946	222	0	3.235	3.919	0	120	0	0	0
1947	2.618	2.618	7.620	2.768	0	0	0	0	0
1948	32.603	32.603	312.150	129.140	0	0	0	0	0
1949	24.126	23.535	199.339	122.732	0	6.546	5.519	0	0
1950	1.948	1.948	14.805	21.897	0	3.584	2.926	0	0
1951	14	0	311	1.244	0	0	0	0	0
1953	1.556	0	5.723	49.368	0	9.348	5.820	0	37(CO)
1954	1.725	0	16.049	7.558	0	1.062	884	0	0
US=	181.120	158.212	2,024.216	861.085	1.582	23.488	15.149	0	0
TRIAL	199.650	174.300	65,081	27,684	3.487	51.782	33.398	0	0

37. Per Ton GOLD.

AM .373 PER TON. @ 10% REMANDED IE .037 = 6,449.02 AM. Remaining

175 65000
 225
 1250

@ \$500 CAN 02 AM = \$ 3,224,550.

NELSON DISTRICT.

NELSON MINING DIVISION.

REPORT OF HARRY WRIGHT, GOLD COMMISSIONER.

I have the honour to submit my annual report on the Nelson Mining Division for the year ending the 31st December, 1908.

Throughout the division there has been an increased activity in all branches of mining; the increased production from the older mines has been accompanied by steady development of newer properties, while the fact that new locations are twice as numerous as in the preceding year indicates that the prospector has discovered profitable fields of exploration. The introduction of foreign capital into the district is largely responsible for this development, and the results accruing from recent investments have been so encouraging as to presage a continuance of the present activity. It is important to note that the development has been general, and that in almost every section of the district there has been increased development of the mines and prospects. Although one or two sections have made more marked progress than others, none have entirely stood still, the result being that there is a reasonable expectation of a steady production of ore throughout the district, and not from one or two camps only.

In the immediate vicinity of Nelson, the *Queen Victoria* mine, at Beasley, has been the centre of the greatest interest, in consequence of the large sum which has been expended on its development during the year. In the early part of 1908, Mr. F. A. Erlund secured a bond on this property on behalf of New York capital, and during the year has expended some \$40,000 on development, including diamond drill exploration. He has also secured options on several adjoining properties traversed by the same copper-bearing formation. Attention has, however, been entirely directed to the systematic development of the property and no commercial shipments have been made during the year.

Messrs. Gough, Guille and Swedberg, the lessees of the *Granite-Poorman* mine, six miles west of Nelson, have had a very successful year. In addition to the mill returns from the average ore, they had the good fortune to strike several of the valuable pockets characteristic of the *Poorman* mine. From one of these pockets, containing only four or five cubic feet, several thousand dollars' worth of auriferous quartz was taken, which can only be classified as "specimen" rock. Several pieces weighing one pound contained half that weight in gold, and the specimens (valued at \$1,500) sent down to the Spokane Interstate Fair were easily the most remarkable in the display, and attracted widespread attention. The total output from the mine during the year was over 8,000 tons and the gross value nearly \$60,000. In the operation of the stamp-mill the average value saved on the plates was about \$5 per ton, and in the concentrates \$2 per ton, making a total extraction of about \$7 a ton.

At the *Eureka* mine, where, in former years, the highest grade copper ore produced in British Columbia was mined, no shipments were made in 1908, but work was confined to the driving of a long tunnel to tap the shaft. This tunnel, which is now in about 600 feet, has, approximately, 200 feet more to go to reach the old workings.

The *Fern* mine, at Hall, was operated by lessees during a few months of the year, and produced bullion and concentrates to the value of about \$2,000.

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community system under which they work. These people, while not very skillful farmers, make up in industry and numbers what they lack in efficiency, and have succeeded to a considerable degree in this district. They have their own sawmill and cannery, and are to a considerable extent self-contained and self-sustaining. There is some good land along the Salmo and Pend d'Oreille rivers and the International Boundary-line, but so far comparatively little has been brought under cultivation.

Good timber is plentiful in many parts of the district. Along the Salmo river some very fine stands of cedar occur, and numerous sections of the country are held by timber licences. All the common types of trees are found, such as cedar, fir, balsam, hemlock, spruce, tamarack, pine, cottonwood, poplar, aspen, alder, larch, and birch. Timber suitable for mining purposes occurs in abundance, and most of the claims are well supplied in this respect. The rivers and lakes are well stocked with fish; rainbow and speckled trout are found in the greatest abundance, and the waters of Kootenay lake and river are world-famous for the excellent trout-fishing to be had there. The Canadian Pacific Railway has a first-class tourist hotel at Balfour, on Kootenay lake, and the fly-fishing is one of the chief attractions of the place.

NELSON CAMP.

There are many properties situated within a radius of ten miles of the city of Nelson, and several of these are now, or have been, important mines. These mines are mainly situated on Toad and Morning mountains, Eagle and Forty-nine creeks, to the south of the Kootenay river. North of the river the formation is mainly Nelson granite and no ore-bodies of importance have been found in it. South of the river the rock formations are considerably jumbled up, consisting of granite, members of the Rossland volcanic series, and limestone and Pend d'Oreille quartzites. The *Queen Victoria* mine does lie north of the river, but at some distance west of Nelson, and here an area of the Rossland volcanic series is found, in which the ore-body has been formed.

The writer did not visit all the properties in this section, but only those that were working. Nearly every mine in this district has been reported on in past years in either the Minister of Mines' Reports or in the Summary Reports of the Geological Survey, so that the writer confined himself to ascertaining facts about present or future work.

The *Silver King* group, now owned by the Consolidated Mining and Smelting Company, was not operated during 1915, having been closed down indefinitely about the time of the outbreak of war. The exact condition of the mine is not known, but it is believed that the last deep-level development-work—the *Dandy* tunnel—was disappointing, and that new work will have to be done before steady shipments can be resumed. It is believed, though, that considerable possible ore-bearing territory has not yet been explored.

On Eagle creek are situated the *Granite-Poorman* group, owned by the Kootenay Gold Mines, Limited, and the *Eureka* and *Pingree* groups, all of which were visited by the writer.

The *Queen Victoria*, situated near Bensley Siding and owned by the British Columbia Copper Company, was closed in August, 1914, and the compressor plant and other machinery taken away. In the latter part of 1915 a few cars of ore were taken out and shipped by leasers, but it is understood most of this came from old dumps which were resorted. This property was not examined by the writer.

This group of claims is situated on the east side of Eagle creek about eight miles by wagon-road from the city of Nelson. The main road down the *Poorman Group*, Kootenay River valley is followed for about six miles, and from there a steep switchback road goes up Eagle creek to the mine, which is at an elevation of about 2,200 feet above the river. The group comprises, in all, fifteen claims, some of which are fractional, and all are Crown-granted. Five separate and distinct veins have been uncovered and on which development-work has been done.

The mine is equipped with a stamp-mill—twenty stamps and four Wilfley tables—situated about one mile west of Granite Siding, on the Columbia & Western Railway, and at the foot of the hill on which the mine is situated. An aerial tramway connects the mine with the mill. This mine was about the first gold property to attract attention in the Nelson District, and was the first to have a mill erected. The mill started operations in 1890; since that time work has been carried on more or less continuously.

The property has had a somewhat checkered career, having passed through many hands and been repeatedly worked by leasers. At the present time a syndicate composed of Wilson, Crilly, and T. Gough have a lease on the whole group. They have subleased the *Greenhorn* vein to a party of fifteen miners, who are working on a partnership basis under the superintendence of Andy Anderson. He was elected "boss" and also has a committee to advise him. Two men also have a sub-lease on the *Red Rock* vein and two more on the *Poorman*, while the leasing syndicate is at work on the *Hardscrabble* vein. The other veins on the property are the *Granite*, of which the *Red Rock* is supposedly a continuation, and the *Beelzebub*, on neither of which was work being done.

All the veins are quartz-filled fissures occurring in Nelson granite, which is more accurately defined as quartz hornblende diorite. The walls are usually well defined, but in many places pyritization of the wall-rock has proceeded to a small extent. Quartz is the predominating gangue mineral, but occasional inclusions of highly altered and silicified granitic rock are encountered. Throughout the quartz, pyrite is disseminated, and in places this is oxidized to iron oxide. Chalcopyrite, galena, and sometimes sphalerite are found in sparing quantities, and the occurrence of any of these sulphides, especially galena, is an indicator of high gold values. In the oxidized portions of the veins free gold is often seen, and also sometimes along with the sulphides.

The veins vary in thickness from a few inches up to 5 or 6 feet. Their general strike is a little west of north, but considerable variations and irregularities are noticeable in all of them; the dip is generally to the north-east at from 45 to 60 degrees. Faults are common, but generally have small displacements, although in the instance of the *Granite* vein there is one with a very large throw. The veins are also cut by the basic mica dykes common in the district.

The veins strike into the hill in such a way as to enable them to be worked by means of drift-tunnels; these tunnels go in as crosscuts for a short distance and then continue on the strike of the vein.

Greenhorn Vein.—This vein is developed by two adits, the lower one of which is being worked. This adit goes in as a crosscut for a distance and then branches, one branch going to the *Greenhorn* vein and continuing as a drift, and the other similarly as a drift on the *Granite* vein. Ore has been stoped from both these veins in past years. At present the sub-lesers are working on the *Greenhorn* vein developing by drifting ahead and stoping at the same time. The vein where stoping was in progress varied from 6 inches to 2½ feet in width. Quartz constitutes the vein-matter and iron pyrites is disseminated throughout. Gold occurs free and in association with the pyrite. Four air-drills were at work, and the ore was trammed to a station on the aerial tram and thence to the mill. The ore varies considerably in value and is very pockety, but the average assay value over a number of years is about \$10 a ton.

Red Rock Vein.—The *Red Rock* vein lies up the hill from the *Granite* workings, and is probably a continuation of the latter. On this an adit-tunnel has been driven in on the vein for a distance of 350 feet. The two men who are sub-leasing on this vein were stoping at a point in 150 feet. At this place there was from 6 to 10 inches of fair-looking ore. Arrangements are made whereby the sub-lesers can run their ore through the mill after mining enough to make a few days' run possible.

Hardscrabble and Poorman Veins.—The *Poorman* and *Hardscrabble* veins lie considerably to the west of the others and are themselves close together. The *Poorman* vein is opened up by four adit-tunnels, and from the lowest—No. 4—an incline winze has been sunk and a fifth level run in; the greatest depth on the vein is nearly 700 feet. A large part of the tonnage produced by the whole property has come from this vein. From the lowest level up to the surface the major portion of the ore-shoot has been stoped out. The lower level to near the top of the winze was full of water, so it was impossible to examine it. The No. 4 tunnel cuts the vein at a distance of 475 feet from the portal, and then continues as a drift for about 1,000 feet more. Stoping has been carried out along nearly the entire length of this drift upwards to the surface. At the face the vein is pinched to a seam. One man was sub-leasing on this vein cleaning up old stopes and generally extracting a little ore wherever it could be got at easily.

The *Hardscrabble* vein is intersected by this No. 4 tunnel of the *Poorman* at a point about 60 feet from the entrance. From the point of crosscutting a drift has been run to the south for a distance of about 800 to 900 feet. There is one main crosscut in this drift.

length of about 300 to 400 feet. Near the end of the drift the vein has separated into two stringers and a drift has been run a short distance on each. At the faces the stringers are pinched down to seams. The general strike of the vein is from north and south to N. 15° W. and dipping at about 45 degrees to the east.

Most of the productive portion of the vein above this No. 4 crosscut-adit level has been stoped out, but good ore is exposed along the bottom of the drift for a distance of 400 feet. The lessees commenced work at a point 600 feet in the tunnel by starting a winze which it is intended to sink 100 feet, and which at the time of visiting the property was down 60 feet. The winze has been made big enough to operate two machine-drills on it, one large drill and the other a small hammer-drill. The vein has been followed down, keeping it on the hanging-wall. It looks very promising down the whole 60 feet; the quartz is well mineralized with iron pyrites, galena, and zinc-blende, and shows free gold in many places. The width of quartz averages about 2½ feet and all of it can be considered good ore. The gold in this vein is as a rule coarse and easily saved on the amalgam-plates, and the average grade of the ore in this vein is better than the others previously described.

It is the intention of the lessees to sink the winze to 100 feet and then drift both ways on the vein and then commence stoping. As the bottom of the No. 4 level shows a good ore-shoot, it seems very likely that this work should prove up a nice-sized block of good mill-ore. A small power-hoist serves for hoisting ore and rock from the winze.

In 1915 the whole group produced about 1,500 tons of ore containing approximately 750 oz. of gold; practically all of this came from the *Greenhorn* lease.

About two miles farther up Eagle creek above the *Granite-Poorman* group Eureka. is situated the *Eureka* mine, owned by the Eureka Copper Mines, Limited, of Nelson. The property is reached by a continuation of the wagon-road beyond the former property, and is at an elevation of 2,700 feet above Kootenay lake. Seven claims and fractions, all Crown-granted, constitute the group. The country at this point is not so steep as at the *Granite-Poorman*, and it is therefore necessary to run long tunnels to get any considerable depth. The total footage of work on the property to date is about 4,500 feet, consisting of an incline shaft with three levels and a crosscut tunnel. In addition to this, some open-cutting and trenching has been done and a new lower level crosscut tunnel has recently been started.

The first mention of the *Eureka* mine in the Annual Reports of this Department was in 1904, when some development-work done on the property was noted. In 1905 the owner, J. P. Swedberg, continued development, and in July of that year bonded the property to Nelson men, who before the end of the year had shipped 250 tons of ore assaying 7 per cent. copper, \$7 in gold, and 4 oz. silver.

In 1906 the mine was in the hands of the present company, and 940 tons of ore was shipped, assaying about \$14 a ton. Shipments in 1907 totalled 620 tons of about the same average grade. In 1908 no ore was shipped, work being confined to the driving of a long crosscut tunnel. Further development-work was carried out in 1909, but no ore was shipped. Shipments were resumed in 1910, when 342 tons of ore, with an assay value of about \$18, was sent to the Trail smelter. Only development-work was done in 1911, and in 1912 the property was bonded by the British Columbia Copper Company. This company carried out further developments, including the equipping of the property with a steam plant, during 1912, 1913, and part of 1914, when the bond was allowed to lapse after considerable money had been spent and part of the purchase price paid. The failure of this company to carry out its bond does not necessarily condemn the property, as the financial conditions at the time were the determining factor rather than the state of the mine. Early in 1915 the property was secured under lease and bond by Keffer & Johns, formerly consulting engineer and mining superintendent respectively for the British Columbia Copper Company, who had resigned from the company, and shortly after they turned their bond over to the Pingree Mines, Limited, and are now acting as consulting engineers for the latter company. The Pingree Mines commenced operations in the summer of 1915, and work is being carried on under the superintendency of Frank Pearce.

The ore-body on this property is of a rather unusual type, being partially of the fissure type and also to some extent a replacement deposit. The country-rock is granodiorite, but there are several limestone-bands which apparently had foundered into the diorite magma at the time of its intrusion. The ore-bodies are developed along lines of shearing and fissuring which to some extent follow these limestone-bands, but are in part entirely in the granodiorite. In the lime-

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Underground development and exploratory work done during 1947 totalled 1,000 feet of drifting, crosscutting, and raising, and 1,200 feet of diamond-drilling. No. 7 level was advanced 200 feet to the west and 100 feet to the east, while 550 feet of drifting and 70 feet of crosscutting on No. 10 level and 80 feet of raising from that level opened up a body of ore below 716 and 718 stopes. By the end of 1947 quartz up to 6 feet wide, well mineralized in places, had been followed 150 feet in a drift on No. 10 level. This vein may be in the hanging wall of the vein mined in No. 7 level, which, in turn, is definitely in the hanging wall of the vein being mined in the west end of No. 6 level. From No. 7 and No. 10 levels a few short holes drilled into both walls failed to find new ore, but further and deeper drilling should add information regarding the vein system. One hole drilled northerly from the east end of No. 7 level cut a vein at 45 feet. This vein was exposed farther west in the drift, and while there may be slight faulting, as suggested by a gouge-filled fracture crossing the drift east of where the vein is exposed, the 45-foot deflection is largely accounted for by the fact that the drift veers off to the right below the vein.

Ore was broken in 618 and 718 stopes and stored in the stopes until required for the mill. Both stopes showed a width of between 5 and 6 feet of milling-grade ore.

Additions to the plant consist of new ore-cars, six new drifters, a Gardner Denver loader, a Sheppard diesel 5-kw. lighting plant, and a Boyles Brothers diamond-drill.

An average of twenty men was employed, but the crew numbered forty at the end of the year. The mill was operated for twenty-four days.

Production: Ore milled, 200 tons. Net contents: Gold, 89 oz.; silver, 60 oz.; lead, 1,051 lb.; zinc, 297 lb.

EAGLE CREEK (49° 117° S.E.).

Gold.

Mine office, Box 390, Nelson. G. H. Rainville, president; W. B. Montgomery, manager. Capital: 3,500,000 shares, \$1 par value. This company is controlled by Quebec Gold Mining Corporation and Noranda Mines, Limited. The holdings, history, and general geology are described in the Annual Report of the Minister of Mines, British Columbia, 1945, pages 96 to 99. Work during the early part of 1947 consisted chiefly of slashing and retimbering to improve the main haulage-way on the 2570 level. Three of four men were employed at this work.

A surface crew was recruited in May and the construction of a 125-ton cyanide mill begun in June. Hiring of men for underground work was started in September, and by October stope preparation, including the finishing of development raises and ventilation raises in connection therewith, was well under way. The mill was completed early in November, and a start was made on the treatment of run-of-mine ore on November 10th. The mill was "run in" with this material until ore-sorting was started on December 1st. The first gold brick was poured on December 17th. About 100 tons per day was being treated by the end of the year.

The mill crew consists of six operators (two on each shift), two "swing-shift" men, one crusher-man, one solution-man, and four sorters on day shift. It is anticipated that the total number employed, including those underground and on the surface, will be slightly more than 100. 2583

Production: Ore milled, 2,886 tons. Net contents: Gold, 245 oz.; silver, 89 oz.

TOAD MOUNTAIN (49° 117° S.E.).

Gold.

This property, situated on the Nelson slope of Toad Mountain and owned by Sheep Creek Gold Mines, Limited, was leased during 1947 to L. Bobier, of Nelson. It is reported that Mr. Bobier collared a new

O.K.—S. J. Bowen, M. Dorran, Gunnar Erickson, and Gus Hansen have a lease on this mine. Only intermittent exploratory work was done.

NELSON.*

EAGLE CREEK (49° 117° S.E.).

Gold.

Mine office, Box 390, Nelson. G. H. Rainville, president; W. B. Montgomery, manager. Capital: 3,500,000 shares, \$1 par value. This company is controlled by Quebec Gold Mining Corporation and Noranda Mines. Production was maintained throughout the year, with the ore coming from the following veins in order of production: Midway, Yule, Hardscrabble, Flat, and Poorman. This mine has two main operating levels, the lower being the 2570 level and the upper the 2750 level. Toward the end of the year 75 per cent. of the ore came from above the 2750 level, where two sub-levels—the 2900 level and 3000 level—are operated.

The ore obtained from the Midway vein was disappointing, in that the grade was lower than estimated. From 15 to 20 per cent. of the material trammed to the mill as ore was sorted out as waste; the remaining mill-feed averaged \$9.80 a ton in 1948. Benefits from the Federal gold subsidy were close to the maximum \$50 an ounce, but this will cease in 1949 unless production greater than two-thirds of the 1948 production is obtained. The number of men employed averaged 135 until March 1st, then dropped to an average of 82 after that date.

Production: Ore milled, 35,939 tons. Gross contents: Gold, 10,036 oz.; silver, 4,152 oz. 37 603

[References: *Minister of Mines, B.C.*, Ann. Rept., 1945, pp. 96-99.]

TOAD MOUNTAIN (49° 117° S.E.).

Lead.

Silver King.—A lease on this property was obtained from the Consolidated Mining and Smelting Company by O. Gowing and associates, of Ymir. Repairs were made to the road and 23 tons was shipped to the smelter at Trail. Gross contents: Silver, 293 oz.; lead, 6,787 lb.; zinc, 1,002 lb.

COTTONWOOD CREEK (49° 117° S.E.).

Shamrock.—This claim, about 5 miles south of Nelson, is owned by A. G. Hardy. He made a shipment of 3½ tons. Gross contents: Silver, 16 oz.; lead, 27 lb.; zinc, 632 lb.

SITKUM CREEK (49° 117° N.E.).

Gold.

Company office, Room 2, Royal Bank Building, Nelson. J. B. White, president and treasurer; Martin Hurworth, mine foreman; C. McLanders, mill superintendent. Capital: 700,000 shares, 50 cents par value.

Work done on this property was restricted during the early part of the year to ore-breaking in 716 and 718 stopes. The broken ore was stock-piled in the stopes until milling was resumed soon after the ground was clear of snow. The mill, however, did not operate very long before the crew of about twenty men was laid off in June, with the exception of a few maintenance-men. Working until November, two men did some exploratory work on the upper or No. 6 level, where a crosscut was driven into the hanging wall of the main vein.

* By J. W. Peck.

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NELSON.*

KOKANEE CREEK (49° 117° N.E.).

The mine is at the head of Kokanee Creek and is owned by The Consolidated Mining and Smelting Company of Canada, Limited. In 1943 R. J. Johnstone made a shipment of dump material. Production: Gross contents: Silver, 297 oz.; lead, 2,064 lb.; zinc, 895 lb.

EAGLE CREEK (49° 117° S.E.).

The British Columbia office, Royal Bank Building, 675 Hastings Street West, Vancouver; mine office, Box 390, Nelson. G. H. Rainville, President; W. B. Montgomery, manager. Capital: 3,500,000 shares, \$1 par value. This company is controlled by Quebec Gold Mining Corporation and Noranda Mines. Production was maintained during the year, with the Midway vein producing 75 per cent. of the ore and the Hard Rock, and Yule veins following in that order.

In 1943 the company ceased operating the mine but gave leases on parts of the mine to lessees of sections of the mine, as follows:—

1. **Hard Rock Mining & Development Co.** (H. Maxwell, H. Peters, and one employee): Hardscrabble and 220 Yule, 2570 level.

2. **W. B. Montgomery and A. Jmaeff**, plus one employee: Midway vein above 2750 level.

3. **Henry, J. Logan, and H. R. Sage**: Poorman, 2750 level.

4. **Johnson, A. Johnson, and W. Johnson**: 219 and 220 Yule, 2750 level.

5. **Arinhenko**: Flat vein, 2570 level.

6. **H. Smith plus two employees**: Granite.

The mill was continued to treat ore mined by the lessees and ore from the Venango, owned by the same company. Ore was purchased from the Venango, the Van Roi was milled on a custom basis. To treat the Van Roi ore, the company installed a flotation circuit; the change-over was completed in July. The crew averaged seventy-five, but was reduced to twenty-five after

23,535

From the Granite-Poorman, mined by the company, 24,004 tons; from the Venango, 1,815 tons; total, 25,819 tons; from the Arlington (p. 167), 124 tons; from the Venango, 247 tons; total ore milled for the company, 26,190 tons. The company shipped 5.3 tons of crude ore to the smelter. Metals recovered: Gold, 4,027 oz.; lead, 15,191 lb.; zinc, 14,315 lb.

This mine adjoins the Kenville property to the west. A. G. and D. H. Norcross obtained a lease from Venango Gold Mines, Limited, and shipped 247 tons of ore to the Kenville mill. A road 200 yards long was built to improve trucking facilities. Air for mining was purchased from the Venango Gold Mines, Limited.

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this winze was, however, unreliable, and the raise was abandoned after being driven 100 feet. Ore from the Eureka dump was trucked 3 miles to the Kenville mill. The mill also treated some of the old Ymir Yankee Girl tailings from Ymir. The mine and mill reverted to the company on October 1st. On October 22nd the Johnson brothers ceased operating their lease, leaving only one group of lessees active at the end of the year.

Production:—

From the Granite-Poorman:—

Milled for the lessees by the company, 1,718 tons.

Milled for the lessees by F. C. Buckland, 550 tons.

Shipped to Trail, 879 tons of ore.

Gross content: Gold, 476 oz.; silver, 704 oz.; lead, 7,902 lb.; zinc, 6,451 lb.

From the Arlington, 2,100 tons milled.

From the Venango, 176 tons milled.

From the Van Roi, 1,466 tons milled.

From the Eureka, 200 tons milled.

From the Ymir Yankee Girl, 1,368 tons milled.

KOKANEE CREEK (49° 117° N.E.)

*Silver-Lead-Zinc***Molly Gibson**

This mine is at the head of Kokanee Creek and is owned by The Consolidated Mining and Smelting Company of Canada, Limited. R. J. Johnston, of Trail, working under a lease arrangement with

the company, shipped two truckloads of ore to the Trail smelter.

Production: Ore shipped, 29 tons. Gross content: Silver, 1,301 oz.; lead, 6,829 lb.; zinc, 5,701 lb.

YMIR (49° 117° S.E.)*

*Gold-Silver-Lead-Zinc***Goodenough
(Protection)**

This mine, on the north slope of Ymir Creek, 5½ miles by road from Ymir, was operated under a purchase agreement by J. Turk, A. Fata, and F. Patula. Ore was obtained from above the No. 2 level and also from the sublevel between No. 2 and No. 3 levels.

For a while the ore was removed via No. 3 level, a distance of 1,700 feet, by wheelbarrow; track was installed later. On the surface the vein exposed in 1949 to the south of the No. 3 portal was stripped farther. Ore was mined from the stripped part of the vein by hand-steel methods and trucked to the smelter at Trail.

Production: Ore shipped, 183 tons. Gross content: Gold, 164 oz.; silver, 1,355 oz.; lead, 21,464 lb.; zinc, 28,403 lb.

Dundee

A. Burgess and three associates continued to work the Dundee mine throughout 1950. The 1235 level, which also serves the Ymir Yankee Girl mine, was used as the main haulage level, and a portable compressor was set up at the portal. Most of the ore mined in 1950 came from pillar remnants of the main vein on the 1000 level, but about 200 tons came from the 900 level.

Production: Ore shipped, 1,032 tons. Gross content: Gold, 320 oz.; silver, 5,459 oz.; lead, 161,024 lb.; zinc, 178,425 lb.

Ymir Yankee Girl

O. W. Gowing obtained a lease on the Ymir Yankee Girl mill tailings at Ymir. These were dug up and at first trucked to the Kenville mill but were later trucked directly to the smelter at Trail.

* By J. W. Peck, except as noted.

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Gold-Silver-Lead-Zinc

Bluebird (Rossland Mines Limited) Company office, 675 West Hastings Street, Vancouver. Capital: 3,000,000 shares, no par value. This company owns a group of claims in the South Belt, adjacent to Rossland. The company was inactive during 1951, but the LBB mining partnership continued operations on the Bluebird claim. The shaft begun in 1950 was sunk a further 10 feet to a total depth of 50 feet. At the bottom the vein was 5 feet wide. Sinking was then stopped, and efforts were concentrated on extending an old adit 120 feet lower down the hillside. After the adit had been driven about 400 feet, it reached the downward projection of the vein in the shaft, and a mineralized zone considerably wider than that in the shaft was reported to have been encountered.

Ore shipments were made from the shaft early in the year. About 40 tons remaining in the ore-pocket were not shipped in 1951. Two men were employed throughout the year.

TRAIL (49° 117° S.W.)***Gold**

Casino Red Cap This claim, owned by T. P. Voiken and associates, of Trail, is on the slope of the Columbia River valley, 4.5 miles by road east of Trail. An open-cut 8 feet long and 6 feet deep was made on quartz vein with an average width of 14 inches. The vein is in a volcanic formation and strikes north 23 degrees east and dips 78 degrees to the west. Samples taken from each end of the bottom of the cut assayed: Gold, 0.30 and 0.88 oz. per ton; silver, *nil*.

An adit was collared 40 feet below the outcrop, and a crosscut was driven towards the vein. Due to an injury to one of the partners, work ceased at 47 feet before the vein was intersected. A small shipment of ore sorted from the open-cut was made to Trail.

NELSON***EAGLE CREEK (49° 117° S.E.)****Gold-Copper**

Eureka (Copper Leaf Mines Limited) Company office, 675 West Hastings Street, Vancouver. F. C. Buckland, managing director; J. C. S. Moore, manager. Capital: 3,000,000 shares, \$1 par value. This property, at the head of Eagle Creek, 2½ miles by road above the Kenville camp, was purchased from Kenville Gold Mines Limited. During 1950 F. C. Buckland started a raise 1,200 feet from the portal of the 450 level to connect with a winze reportedly sunk 110 feet from the 250 level. The winze was not encountered, and the raise was stopped after it had been driven 100 feet. In 1951 the present company reopened the 50 level for 600 feet to where the vein was encountered, but further reopening was considered impractical. An old shaft was then rehabilitated to provide access from surface to the workings behind the caved area. The old winze was located, and a survey now proposed to establish its relation to the raise. Three men were employed for four months on this work.

Gold

Granite-Poorman (Kenville Gold Mines Limited) British Columbia office, Royal Bank Building, 675 West Hastings Street, Vancouver; mine office, Box 390, Nelson. G. H. Rainville, president. Capital: 3,500,000 shares, \$1 par value. This property, 7 miles by road west of Nelson, remained inactive during 1951, although the mill was operated intermittently on custom ore. Park Mining Co. Ltd. leased the mill until July to concentrate ore from the Jackson mine near Retallack. The mill was then enlarged by the installation of additional flotation cells. Ore was then treated from the Emerald mine of Emerald Glacier Mines

* By J. W. Peck.

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A new adit, No. 2, was collared 210 feet to the southeast and 100 feet lower than No. 1. This was driven northwestward for 880 feet to reach the downward projection of the ore zone in No. 1 adit, but no similar mineralization was encountered, and diamond drilling in this area was also disappointing. Some mineralization was found in drilling to the north, and in November a drive to investigate it was started 770 feet from the portal. At 120 feet from the portal, another ore zone, lying about 30 feet north of and parallel to the main drift, was investigated by 280 feet of drifting and crosscutting. The drift on this zone also connects with the main drift at 320 feet from the portal. The orebody was vein-like, about 2 feet wide, and diamond drilling below No. 2 level was encouraging enough for the sinking of a two-compartment winze. This winze had reached a depth of 90 feet by the end of 1952. Thirty-four diamond-drill holes from 32 to 209 feet long were drilled from No. 2 adit. At 470 feet from the portal the adit also intersected the old shaft which, although filled with debris below the level, was not suspected to be much deeper.

On the surface near the No. 2 portal a compressor-house, repair-shop, change-house, and explosives' magazine were built. No living quarters were built as the mine is only 1 mile from Rosslund. A maximum of twenty-two men was employed during the first half of the year, but the number had dropped to six by November.

Union (49° 117° S.W.) This property, 3 miles north of Rosslund, is owned by M. Gach and H. Persson, of Rosslund, but was operated under lease by J. Densky, A. Nelson, J. Gach, and S. Martin, of Rosslund and Trail. It is an old claim, Crown-granted in 1896, from which the latest records of shipments were in 1937 and 1946. Two small shipments totalling 9 tons were trucked to the Trail smelter in July and October, 1952.

Silver-Lead-Zinc

Sunset (49° 117° S.E.) This Crown-granted claim lies just north of the International Boundary, about one-half mile by rough road west of Paterson. It is owned by Warren Crowe, of Waneta. The workings range in elevation between 2,550 and 2,800 feet. They consist of a few open-cuts and one 30-foot adit, which investigate east-west fractures in argillite near the contact with Rosslund volcanics. The lead-zinc mineralization in these fractures, where seen, decreased sharply within a few feet from the contact. In the adit, which is the lowest working, mineralization is 1 foot wide for a distance of 20 feet from the portal, but the fracture is then faulted and is tight for the remaining 10 feet to the face. At the portal a dyke 30 inches wide is at right angles to the bedding. At the uppermost workings an open-cut made many years ago near the contact with the volcanic formation probably encountered similar mineralization. Very little mineralization could be observed when the property was visited in November, but the dump contained high-grade samples of galena and sphalerite. The owner, Mr. Crowe, built a road to this dump during the summer, hand-sorted the best ore, and made a shipment to the Trail smelter. This shipment weighed 3,070 pounds and assayed: Gold, trace; silver, 12.8 oz.; lead, 37.5 per cent; zinc, 3.8 per cent.

NELSON*

EAGLE CREEK (49° 117° S.E.)

Silver-Lead-Zinc

**Kenville
Base Metals
Concentrator
(Emerald Glacier
Mines Limited)**

Company office, 1408 Royal Bank Building, Vancouver; mine office, Box 390, Nelson. G. Blaney, mill superintendent. This concentrator is located at the Granite Poorman mine, 7 miles by road west of Nelson. It was purchased in 1952 from Kenville Gold Mines, Limited. The mill had been converted from a cyanide gold mill in 1949 and enlarged in 1951 to handle 200 tons per day of silver-lead-zinc ore. The concentrator operated intermittently throughout 1952 treating custom ore as well as Emerald Glacier ore.

* By J. W. Peck.

Ore milled: Emerald Glacier, 2,908 tons; New Jerusalem of Ainslo Mining Company Limited, 246 tons; Black Fox of Ainsworth Base Metals, Limited, 177 tons; Moonshine of B.C. Metal Mines Ltd., 38 tons; Caledonia of G. E. McCready, 60 tons; Goodenough of Pacific Mining Services Limited, 732 tons; Scranton Mines Limited, 474 tons.

HALL CREEK (49° 117° S.E.)

Gold

Sun Fraction

This property is owned by W. Rozan, J. Haines, J. Morrison, N. E. Morrison, and R. Gauthier, of Nelson. It is on the summit between Fortynine and Hall Creeks and is reached by 15 miles of road from Nelson up Fortynine Creek. After ceasing work for the winter, W. Rozan and R. Gauthier returned after the snow had gone and continued their development of a quartz vein. The lower adit was extended as a drift on the vein to a total length of more than 310 feet from the portal. Between 190 and 210 feet from the portal the vein was 1 foot wide and a stope was carried up for 28 feet until the vein pinched. Some underhand stoping to a depth of 6 feet was also done in this section, producing a total of 16 tons for shipment. No stoping was done beyond this point because the vein was not encouraging, but when the property was visited in October, the vein between 300 and 310 feet from the portal had widened to 16 inches and contained soft sulphides. Two samples taken here, 8 feet apart, gave assays of: Gold, 3.90 and 1.70 oz. per ton; silver, 0.5 and 0.2 oz. per ton, respectively. The partners also worked in the upper adit removing available ore amounting to 12 tons. This latter shipment was reported to be the better grade. Machinery consisted of a Gardner-Denver 105-cubic-feet-per-minute compressor. The ore was moved from the mine by wheelbarrow and then trucked to the Trail smelter.

Production: Ore shipped, 28 tons. Gross content: Gold, 26 oz.; silver, 22 oz.; lead, 386 lb.; zinc, 111 lb.

[Reference: *Minister of Mines, B.C., Ann. Rept., 1951, p. 136.*]

YMIR*

Gold-Silver-Lead-Zinc

Goodenough (Protection)

(49° 117° S.E.) This mine, on the north slope of Ymir Creek valley 5½ miles by road from Ymir, is owned by J. Turk and F. Patula, of Ymir. It was optioned in November, 1951, by Pacific Mining Services Limited (company office, 640 West Pender Street, Vancouver), but this company dropped its option in March, 1952, after stoping about 800 tons in a known ore section above No. 3 level, about 1,700 feet from the portal. This ore was milled at the Kenville mill at Nelson, and the concentrates trucked to the Trail smelter.

After the property reverted to its owners, the partners made use of the air-line and track installed by Pacific Mining Services Limited. A portable compressor was obtained, and the former hand-steel methods abandoned. Ore mined was trucked to the Trail smelter, but late in the year it was necessary to stock-pile because of curtailment of operations at the smelter.

Yankee Girl, Dundee (Yankee Dundee Mines Limited)

(49° 117° S.E.) Company office, Suite 207, 445 Richards Street, Vancouver. A. B. Goodridge, president; L. Belliveau, vice-president; Ralph A. Sostad, managing director. Capital: 4,000,000 shares, 50 cents par value. This company was formed late in 1952 to develop the Yankee Girl and Dundee mines east of Ymir. The company plans to extend the Wildhorse Creek adit to the projected position of the Yankee Girl vein system, 765 feet vertically below the 1235 level of the old Yankee Girl mine. This adit was driven in 1928 and 1929 for

* By J. W. Peck.

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FRUITVALE*

Silver-Lead-Zinc

John (Magnuson Group)

(49° 117° S.W.) The Magnuson group is north of Fruitvale between the confluence of Fruitvale and Beaver Creeks. The Floyd No. 1 and Floyd No. 2 claims are owned by Floyd Magnuson, of Seattle, Wash., who also has a lease and bond from John Grieve of Fruitvale on the adjoining John, John 2, and John 5 claims. The workings appear to be on the John claim and are accessible by road, 2 miles from the railway crossing at Fruitvale. The elevation of the workings is 2,500 feet, or 500 feet above Fruitvale. They consist mainly of an open pit and an adit 15 feet below and driven for 60 feet. These workings explore a fissure which varies from a crack to 18 inches. Pyrite is the main visible mineral. The fissure is nearly vertical and strikes north 80 degrees west. The country rock consists of thin-bedded limestones and argillites lying above massive limestone. The bedding strikes north 27 degrees west and dips 40 degrees to the south-west. The property was idle most of 1954, but a shipment of development rock was made to the Trail smelter. The plant on site consisted of a portable Sullivan compressor, a small shed, and an ore-bunker. Production: Ore shipped, 8 tons. Gross content: Silver, 13 oz.; lead, 176 lb.; zinc, 320 lb.

NELSON*

EAGLE CREEK (49° 117° S.E.)

Silver-Lead-Zinc

Kenville Base Metals Concentrator (Emerald Glacier Mines Limited)

Company office, 1408 Royal Bank Building, Vancouver. This concentrator is located at the Granite Poorman mine, 7 miles by road west of Nelson. It was formerly a 125-ton cyanide gold-mill but was converted in 1949 to a lead-zinc flotation mill and later enlarged to a 250-ton capacity. It was under lease during early 1954 to J. P. Dion, D. H. Norcross, and W. W. Cooper, of Nelson. The tonnage treated amounted to 1,900 tons from the Granite mine and 80 tons from the Eureka mine. In the latter half of 1954 J. P. Dion and W. Maybank, of Nelson, obtained a lease. Only the crushing plant was used to produce aggregate of various sizes for concrete and road-construction demands. The mine dumps, which are mainly granite, supplied the material. Production amounted to 6,500 tons.

Gold-Copper

Eureka (Copper Leaf Mines Limited)

Company office, 1403 Royal Bank Building, 675 West Hastings Street, Vancouver. The Eureka mine is 2¾ miles by steep road from the Kenville Base Metals Concentrator. It was worked during 1953 by a partnership known as the Eureka Copper Syndicate. No work was done during 1954 and all portable machinery was removed, but 80 tons of ore mined in 1953 was milled at the Kenville Base Metals Concentrator. In September, J. E. Crockart, of Calgary, obtained an option but no work was done.

Gold

Granite (Kenville Gold Mines, Limited)

Company office, Royal Bank Building, 675 West Hastings Street, Vancouver. The Granite mine, located about 7½ miles from Nelson, has been under lease since 1953 to J. P. Dion and associates, of Nelson. A sublevel, accessible by a raise 600 feet from the portal on the lower level, was extended to a total length of about 90 feet. A quartz vein in granite, averaging 1 foot wide, was followed until it pinched out at the face. A stope 60 feet long was carried 20 to 85 feet up the 42-degree

* By J. W. Peck.

dip. At one point a break-through was made to a caved underhand stope which extended downward from the upper Granite adit. Operations ceased early in 1954 when most of the easily available ore was mined. About 1,900 tons was trucked to the Kenville Base Metals Concentrator, where 600 tons of waste was sorted out before the remainder was milled.

HALL CREEK (49° 117° S.E.)

Sun Fraction

This property is owned by W. Rozan, J. Haines, R. Gauthier, and N. E. Morrison, of Nelson, and the estate of J. Morrison. It is on the summit between Fortynine and Hall Creeks and is reached by 15 miles of road from Nelson up Fortynine Creek. The general area has been described in Reports previous to 1951 under Golden Eagle and T.S. Most of the work since 1946 has been concentrated on the Sun Fraction, where W. Rozan, assisted in recent years by R. Gauthier, has been developing quartz veins in granite. One vein at an elevation of 6,400 feet has been developed by an adit more than 400 feet long; the first 120 feet was driven as a crosscut and the vein intersected at 70 feet from the portal. A drift was driven northward on the vein for 300 feet, at which point a fault was encountered. For 200 feet short of the fault the vein ranged from 6 to 16 inches wide and had an average dip to the east of 50 degrees.

The vein filling is mainly quartz with some sections containing soft iron sulphides. Previous sampling has indicated that these sulphides contain considerable gold. Samples taken from a section containing the most sulphides gave the following results:—

Location of Sample	Width of Sample	Gold	Silver
	In.	Oz. per ton	Oz. per ton
300 feet from portal	12	1.37	0.4
310 feet from portal	9	2.16	0.4
320 feet from portal	10	1.14	0.2
330 feet from portal	6	3.58	0.5
340 feet from portal	8	0.03	0.1
350 feet from portal	8	0.01	Nil

Work was at a minimum during 1954 and no shipments were made, although a considerable amount of sorted ore is on site.

TOAD MOUNTAIN (49° 117° S.E.)

Great Eastern

J. E. Riley, of Trail, owns the Great Eastern, Great Western, and Irene Crown-granted claims on Toad Mountain, 8 miles south of Nelson via the Silver King mine road. The property has been idle since 1939, but an option was obtained in 1954 by N. Rollick, of Nelson. On the Great Eastern claim at an approximate elevation of 5,100 feet, a quartz vein in granite, with reported widths as great as 10 inches, was followed in the past by a 70-foot drift and stoped to surface at the end of the drift. This drift was rehabilitated and was extended 30 feet. The vein at the old face was only a stringer, but in the stope 20 feet directly above it was 6 inches wide. A sample taken at that point in the stope assayed: Gold, 0.56 oz. per ton; silver, 0.2 oz. per ton.

YMIR*

Gold-Silver-Lead-Zinc

Goodenough (Protection)

(49° 117° S.E.) This mine, on the north slope of Ymir Creek valley 5½ miles by road from Ymir, is owned by J. Turk and F. Padulo, of Ymir. A third partner, T. Kushner, has been taken in on a lease arrangement. The main camp is located near the

* By J. W. Peck.

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No. 2 portal and some
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Ore shipped 157 tons
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Yankee Girl
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