

2054

REPORT

TO THE

GRANBY
CONSOLIDATED
MINING, SMELTING & POWER
CO., LTD.

NAME OF PROPERTY

ZAMORA GROUP
DIVISION Greenwood, B. C.

OWNERS

G. E. White,
Oliver, B. C.

EXAMINED BY

O.D. Frith, & K.C. Fahrni
DATE Aug.24/48 & Sept.22/48

802009

ZAMORA GROUP - WESTBRIDGE B.C.

Greenwood Mining Division

Introduction

The Zamora group, south west of Westbridge, B.C. was examined for the company by Mr. O. D. Frith on August 24th and 25th, 1948. Mr. Frith was very favourably impressed with the look of the property and since the owner, Mr. White, was willing to make an agreement he recommended that a more detailed examination be carried out. On Sept. 22nd the writer, assisted by Mr. Frith and Mr. Frank Burgess of the mine staff made a detailed geological examination of rock exposures in the vicinity of the Zamora shaft. The outcrops and workings were mapped and some additional sampling was done. The following report covers the findings of this examination and is to be attached as a supplement to Mr. Frith's report, No. 2054 in the company's exploration file.

Summary

At the main workings of the Zamora group there are two known ore shoots of linear character in a gently sloping limestone bed. The plunge of the shoots is at from 15 to 20 degrees. The widths of the ore shoots are about 10 feet. The breadth is about 25 feet, the entire thickness of the limestone being mineralized along fractures with a 60 degree slope. The overlying rock is andesite and argillite. The gross value of the metals in the ore is about \$40 per ton, in combined silver, lead and zinc. Silica and lime content are such as to demand the maximum flux credits at the Trail Smelter. The property is easily accessible and there is a short rail haul to the smelter. The net value of the ore before mining charges is \$17.31 per ton.

Conclusions

If the Zamora limestone can be proven to be a continuous bed, the ore shoots should have fair continuity and parallel ore shoots which are not now exposed may be discovered.

The Zamora property could be brought into production on a small scale in a few weeks with a small expenditure for construction and equipment. The rate could be increased to a maximum of about 50 tons a day of ore with about \$40 per ton gross metal value. Mining, shipping and smelting charges would probably amount to \$30 per ton leaving a profit of \$10 per ton.

Allowing a profit of \$10 per ton, the entire earnings of the property, until both ore shoots were mined down a distance of 200 feet along their plunge, would be required to pay off the purchase price of \$100,000. This would leave nothing for the buyer except the geological possibilities of continuation of the ore shoots beyond 200' and the hope of finding new parallel ore shoots. The investigation of these factors would entail additional expense and mining costs would be increasing with depth. The operation might not be able to pay for the new development and exploration which would have to be done in order to keep running.

Recommendations

The Zamora property cannot be recommended to the company as a good mining risk. The present owner or lessors would have a good opportunity to extract ore by mining down on the ore shoots from the surface. There is an excellent chance that such an operation would be profitable if the investment could be kept low.

Exploration of the limestone body should be carried out by some additional stripping north and south-west of the present workings. If the limestone proves to be continuous the possibility of other ore shoots occurring in it should be investigated by a tunnel. If the limestone can be traced down the hill to the north and north-west, a tunnel site might be locatable which would follow the limestone bed a few hundred feet down the slope beneath the outcrop. If such a tunnel seems warranted after the stripping has been done it would provide additional working faces on the ore shoots now known as well as exploration of the limestone for new ore.

Method of Examination

The shaft and tunnel from which Mr. White has made his ore shipments were examined and mapped to 10 scale. By means of the plane-table the outcrops in the vicinity of the workings were located. This mapping was done on 100 scale and one section, where considerable structure had been uncovered was mapped to 10 scale. From this mapping the possibilities of extensions of the limestone bed were studied and the relation of the ore bearing fractures to the other structure could be seen.

A series of samples was taken across an exposure of limestone. Drilling and blasting of a cut across this exposure following Frith's report facilitated this work. Details of the sampling are given below in a separate section.

Geology

The ore bearing formation at the Zamora property is a limestone. This rock is exposed over a width of from 60 to 70 feet on the surface but its true thickness is about 25 feet, its slope being between 15 deg. and 25 deg. The strike of the bed is N 30 deg. E and the dip is to the north west. No exposures of the limestone were seen beyond the small section mapped and it is possible that the original limestone bed has been squeezed into a series of lenses. Further work will be necessary to disclose the continuity or lack of continuity of the limestone. Above the limestone lies a body of limy argillite. This rock is not continuous, but is cut off by an overlying intrusive. The bed is probably less than 20' thick. Above the argillite lies a body of andesite which may be a dyke or sill. This formation is at least 50' thick and may be considerably more since the upper limit was not determined by the mapping.

Beneath the limestone is a bed about 35' in thickness of soft, brown, limey argillite. A narrow band of andesite, possibly a sill, cuts this bed. Below the argillite lies a dark greenish altered coarse grained rock which may be several hundred feet in thickness since it is exposed over a considerable area on the surface. It has been classified as a diabase sill.

The Geological survey, in their preliminary map of the area, published with the preliminary report 37-21, place the Zamora showings near the centre of a mass of undifferentiated sediments, flows and intrusives of Carboniferous Age, which is several miles across. The contact with a gneissic granite lies about a mile away to the north-east.

Structure

The mineralization of the Zamora Limestone bed is concentrated near and along sets of ore fractures. These fractures have an east-west strike and dip at about 60 degrees to the south. Their intersection with the limestone gives a probable plunge of the ore shoots in a direction of S 75 deg. W at a slope of 15 deg. to 20 deg. At least two zones of ore fracturing are known, that of the main shaft and that of the lower shaft. These are about 70 feet apart. Each zone is from five to ten feet in width and extends entirely across the limestone. The intervening ground and that beyond there is slightly mineralized by occasional fractures but it does not appear to be of sufficient grade to constitute ore.

The ore fracturing cuts the underlying argillite where some galena shows, but there does not appear to be the general mineralization there which occurred in the limestone. In the limestone contacts there is evidence of slicing by the ore fractures and tongues of argillite extend into the limestone along the fracture direction, between masses of limestone now rounded by pressure. The sketch of the main workings shows this structure in the footwall of the limestone.

Other mineralization in the diabase about 1,000 feet south east of the main workings occurs in quartz veins, some of which parallel the ore fracture direction of the main workings.

Mineralization

The economic minerals are galena and sphalerite. These minerals occur with considerable pyrite and traces of chalcopyrite in aggregations and stringers of mixed crystals in the massive limestone. Some silicification and recrystallization of the limestone has occurred giving it a coarse texture. The gangue minerals are such that the Trail Smelter gives the maximum flux credits to the Zamora ore.

Possible Ore tonnages

Allowing the ore a specific gravity of 3.0 to 3.5 it would run at about 10 cubic feet per ton.

For each of the two ore shoots known, allow the following dimensions:

Width..... 10 feet
Breadth (true width of limestone bed).... 25 "
Pitch length (first stoping panel)100 "

Tonnage available

$$\frac{2 \times 10 \times 25 \times 100}{10} = 5,000 \text{ tons of ore}$$

or 25 tons per foot of development of ore shoots.

About ~~5,000~~⁸⁰⁰ tons could be mined from each ore shoot by open cut methods before any waste material except the shallow overburden would have to be removed.

Sampling and Assays and Possible Ore Grades

Besides the samples taken by Frith an additional series of four samples was taken across a limestone exposure which showed slight mineralization. This series is continuous with sample #E-628 by Frith and the direction of the cuts is about at right angles to the ore fracture direction from south to north. The sample locations are shown on the accompanying map.

Assay results are as follows with gross value calculated at current metal prices *

Ag: 75 cents per oz.
Pb: 17½ " " lb.
Zn: 12 " " lb.

<u>Sample No.</u>	<u>Width'</u>	<u>Gold oz/ton</u>	<u>Silver oz/ton</u>	<u>Lead %</u>	<u>Zinc %</u>	<u>Gross Value \$/ ton</u>
E-628	2.5'	Tr.	78.90	15.00	10.85	\$137.71
E-293	8.0'	"	.60	.50	2.10	7.24
E-294	8.0'	"	.10	.30	.70	2.80
E-295	8.0'	"	Tr.	.50	.20	2.23
E-296	8.0'	"	Tr.	.20	Tr.	.70
Avg. 628 & 293	10.5	Tr.	19.24	3.95	4.18	38.29

For purposes of calculation the following samples and averages may be taken as representative of the ore shoots.

<u>Sample No.</u>	<u>Width'</u>	<u>Gold</u>	<u>Silver</u>	<u>Lead</u>	<u>Zinc</u>
628 & 293	10.5	Tr.	19.24	3.95	4.18
E-626	6.0	"	4.10	10.75	9.30
E-629	6.2	.01	6.40	23.30	10.95

For a comparative average reduce all widths to 10' with wall rock put in at zero grade. Grades would then be as follows:

E628 & 293	10.0	Tr.	20.20	4.15	4.29
E-626	10.0	"	2.46	6.45	5.58
E-629	10.0	"	3.97	14.45	6.79
Average	10.0	Tr.	8.88	8.35	5.55

To reduce effect of erratic high values in silver and lead cut high values to uncut average and re-average as follows:

E628 & 293	10.0	Tr.	8.88	4.15	4.29
E-626	10.0	"	2.46	6.45	5.58
E-629	10.0	"	3.97	8.35	6.79
Cut average	10.0	Tr.	5.10	6.32	5.55

Net Value of Zamora ore

The following calculations are made on the basis of the C.M.&S. Trail Smelter schedule dated June 1st, 1947. Value calculated for 1 dry ton of ore of the previously averaged grades of gold - trace; silver- 5.10 oz. per ton; lead - 6.32% ; zinc - 5.55%. Estimated iron - 3%; and silica plus lime - 75%.

Contents and value:

<u>Contents</u>	<u>Contents paid for</u>	<u>Net Quotation</u>	<u>Value</u>
Silver 5.10 oz	95% 4.84 oz.	.75	3.63
Lead: 126.4 lbs.	90% 113.8 lbs.	(17.5 - 2.5)	17.07
Zinc: 111.0 lbs.	50% 55.5 lbs.	(12.0 - 6.0)	3.33
Smelter's gross value			\$24.03

Treatment charges

Base charge	\$12.00
Zinc penalty 5.55 @ 22¢	<u>1.22</u>
	13.22
Silica-lime credit.....	<u>10.50</u>
Total	\$ 2.72
Freight and trucking (est.)	\$ 4.00

Net value of ore per ton is \$24.03 less \$2.72 treatment less \$4.00 freight and trucking = \$17.31 per ton.

Mining cost of Zamora ore

From consideration of comparable operations it is estimated that in the upper sections of the Zamora ore shoots mining could be carried out for from \$5 to \$10 per ton.

Trucking and Freight

Without mileages or freight rate quotations it is estimated that trucking to the railway (about 3 miles) and shipping to Trail Smelter would cost in the neighbourhood of \$4.00 per ton.

Maps and Sketches.

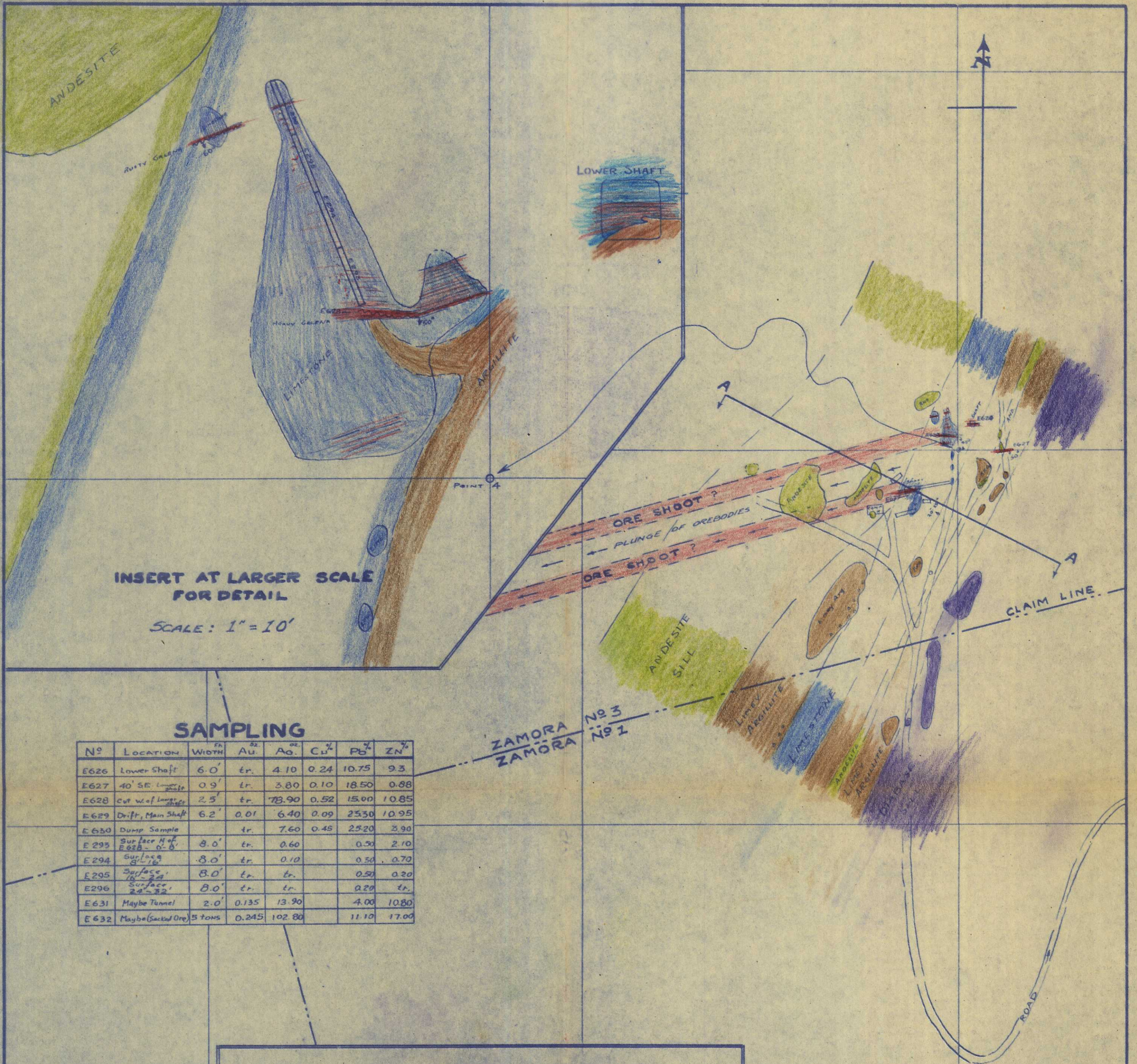
Two maps are attached. One is a tracing of the plan table sheet and is entitled "Main workings of Zamora Group". The other is a sketch of geology at elevation of the tunnel floor in the main shaft at a scale of 1" to 10' entitled "Geology of Footwall in Main Shaft".

Report respectfully submitted,



Keith C. Fahrni,
Chief Geologist.

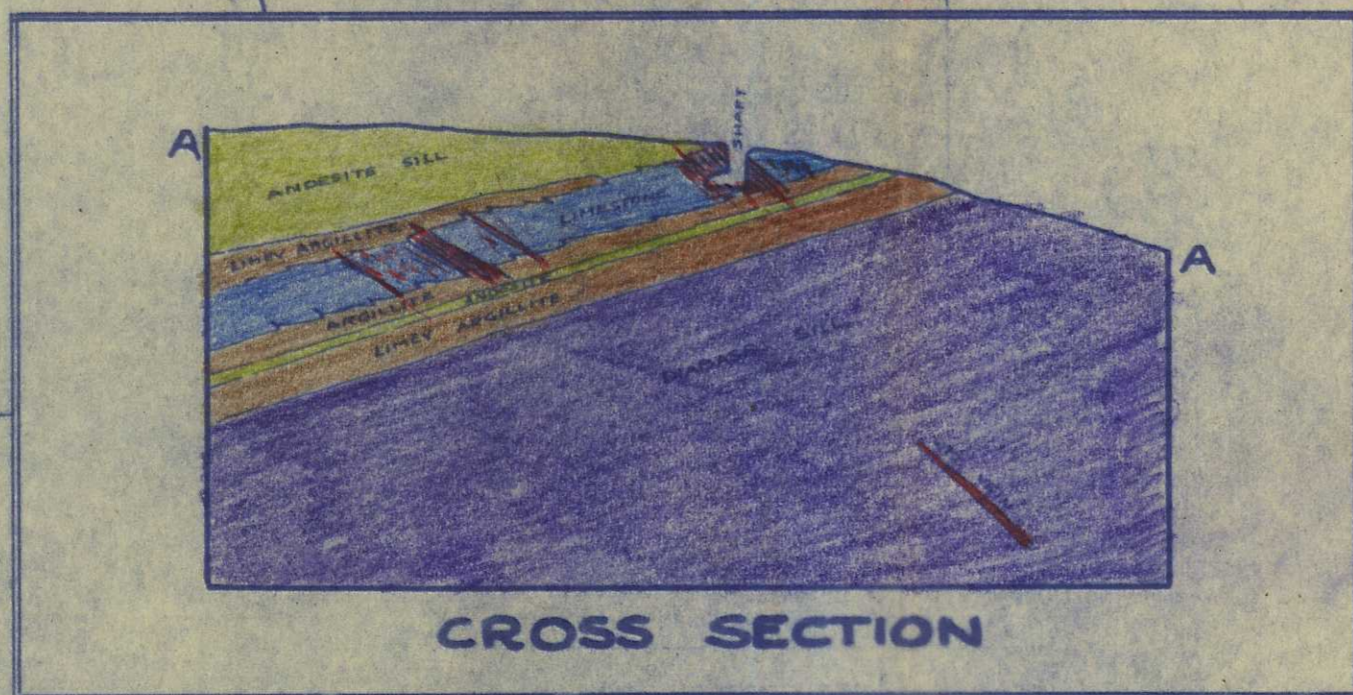
KCF:jdb
October 26, 1948.



INSERT AT LARGER SCALE
FOR DETAIL
SCALE: 1" = 10'

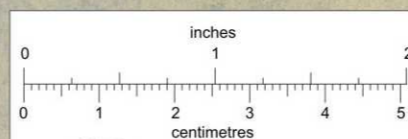
SAMPLING

N ^o	LOCATION	WIDTH	FA	AU.	AG.	CU ^o	PB ^o	ZN ^o
E626	Lower Shaft	6.0'	tr.	4.10	0.24	10.75	9.3	
E627	40' SE Lower Shaft	0.9'	tr.	3.80	0.10	18.50	0.88	
E628	Cut w. of lower shaft	2.5'	tr.	73.90	0.52	15.00	10.85	
E629	Drift, Main Shaft	6.2'	0.01	6.40	0.09	25.50	10.95	
E630	Dump Sample		tr.	7.60	0.45	25.20	3.90	
E293	Surface N of E628	8.0'	tr.	0.60		0.50	2.10	
E294	Surface S of E628	8.0'	tr.	0.10		0.50	0.70	
E295	Surface 16-24	8.0'	tr.	tr.		0.50	0.20	
E296	Surface 29-32	8.0'	tr.	tr.		0.20	tr.	
E631	Maybe Tunnel	2.0'	0.135	13.90		4.00	10.80	
E632	Maybe (Sacked Ore)	5 tons	0.245	102.80		11.10	17.00	



CROSS SECTION

APP. CLAIM LINE



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

MAIN WORKINGS
OF
ZAMORA GROUP
WESTBRIDGE B.C.

SCALE: 1" = 100'

SEPT. 22nd 1948

FW.B.-O.D.F.&K.C.F.

REPORT ON ZAMORA GROUP
(formerly Crown Point)
WESTBRIDGE, B.C.

Outline of Report

1. Introduction
2. Location
3. Timber, Water, Power etc.
4. Tunnel sites, camp etc.
5. Property and ownership
6. History
7. Geology
8. Ore occurrences
9. Equipment
10. Conclusions
11. Recommendations
12. Maps

1. Introduction

Under instruction of Mr. R. S. Douglas, I proceeded to the village of Westbridge, B.C. on the Kettle River, to examine several properties which had been submitted by Mr. Len Empey.

On August 24th and 25th, 1948, accompanied by Mr. Empey, Mr. White (the owner) and Mr. Nick Barlow of Westbridge, the following examination was carried out:-

2. Location

The Zamora property is located on the south side of James Creek, which enters the Kettle River at a point 3 miles south of Westbridge, B.C. From the main highway, a switch-back road in fair condition starts through the Smith Ranch and follows the south side of James Creek a distance of 3 miles to the property. The elevation at the main highway and Kettle River is 1995 feet and at the property buildings and shaft 2,900'.

3. Timber, Water & Power

The property and surrounding area is well timbered with trees suitable for mine timber. Several sawmills operate in the main valley within a few miles. Water for all purposes can be secured from James Creek or a branch of this creek but might have to be pumped. The West Kootenay Power line is 5 miles south of the property.

4. Tunnel sites, camp.

To the north of the Crown point claim the ground slopes gently for 600 feet to where it drops off sharply into James Creek, and a depth of possible 700 feet could be secured by a tunnel from James Creek. Camp sites are available close to any operation, and water can be secured from James Creek. The K.V. railway and highway is 3 miles to the east.

5. Property and ownership

The property is owned by G.E.White, Box 30, Oliver, B.C. and consists of 11 claims as follows:- L 2448 Crown Point (C.G.), Zamora No.1,2,3,4,5,6,7 & 8, Maybe No.1 & 2. Accompanying map No.1 shows the grouping of the above claims.

6. History

The Crown Point claim together with what is now Zamora No.1 and Maybe No.1 and 2 was prospected by a series of small tunnels and shallow shafts by a prospector (name unknown), from 1896 until his death several years ago. Apparently little interest has been taken in the area by mining men since 1900 and Mr. White restaked the ground in 1947 and started development in a small way.

7. Geology

The rock formation covering the majority of the claims is argillite schist, with two small dykes noted. However, on the Crown Point and Zamora No.3 claims, there is a small body of limestone, showing width of possibly 100' and striking E/W. Overburden prevents tracing the limestone to the west and several open cuts 800' to the east were in argillite. The important occurrence of ore is in the limestone where two shafts have been sunk and the surface partially stripped with a bulldozer.

At least 2 other veins are developed in the schist but these are very narrow and it would appear that when the vein system enters the schists the veins pinch although values continue.

8. Ore Occurrences

Crown Point Claim: The most important occurrence of ore is on the Crown Point Claim and possibly on Zamora No.3. This occurs in a limestone body, the extent of which cannot at present be traced along the strike because of overburden, but the width is approx. 100' with schist and argillite on each side. Where developed and exposed, the limestone carries a series of quartz veins and stringers, with heavy galena, spahalerite and pyrite. These veins vary from 10' to $\frac{1}{2}$ inch in width.

Two shallow shafts have been sunk, one of which has a drift 15' in length. The surface has been partially bulldozed off for roads, and where the limestone was exposed for 30' several stringers of galena, varying from $\frac{1}{2}$ inch to 2.5' have been exposed. The complete width has not been exposed by the bulldozer and a good stringer of galena is exposed on the southern side where limestone disappears under the overburden.

The two shafts and the various exposures are not connections of the same vein in the limestone but each working is on separate or distinct veins across the width of the zone. The strike of the vein zones is east-west, with the dip from 60 deg. to 67 deg. to the south.

At the eastern end of the showing a shaft was sunk 12' on a well mineralized quartz vein 6+ feet wide dipping 67 deg. to the south. This vein is well mineralized with galena, sphalerite and chalcopryrite, with a clean footwall and the hanging wall not exposed. A fault dipping 35 deg. West occurs in the shaft with little mineralization above it.

A sample No.626 taken across 6' in this shaft assayed as follows:- Gold - Tr. Silver 4.10 oz; Copper 0.24%; Lead 10.75%; zinc 9.30%, or approx. \$74.00 at current metal prices.

40' to the south of the shaft along a road, a 10" vein has been exposed with 2 small stringers of heavy galena. This strikes 270 deg. (E-W) and dips 55 deg. to the south. Sample No.627 taken across 10 inches assayed as follows: Gold - Tr; silver 3.80 oz; copper 0.10%; lead 18.50%; zinc 0.88%; or a value of approx. \$77.00 per ton.

To the west of the lower shaft about 20' and between the two shafts a bulldoze cut for a road has exposed the limestone for about 45' in width, at the southern end where the limestone extends under overburden there is a 2" stringer of solid galena. At 15' north of this point a vein of galena shows a width of 2.5'. Sample 628 taken over 2.5' assayed as follows: Gold - Tr.; silver 78.90 oz; copper 0.52%; lead 15.0%; zinc 10.85%, or a value of approx. \$152.00 per ton at present metal prices.

From the above vein to the north for a distance of 30' the limestone has been exposed in a clean smooth surface, showing veinlets of galena from $\frac{1}{2}$ to 1 inch wide, every foot, with a stringer 2" in width about 25' to the north. This surface was not sampled as it needs cleaning and blasting before a channel sample could be taken, but would appear to carry values across the whole width. On the western side of this bulldoze cut, there appears to be a flat fault with no mineralization above the fault, but more stripping is needed to determine the extent and occurrence.

To the south west of this bulldoze cut about 100' a shaft has been sunk for 25' with a 10' sump. This shaft started on a 10' quartz vein with much galena, dipping 60 deg. to the south, and at the bottom of the vertical shaft cut through the vein into limestone. The new owner has crosscut a few feet and drifted 15' on the vein to the west. Here a vein shows 9+ feet wide with the face of the drift showing a full width of well mineralized quartz and the hanging wall not exposed. The strike is 270 deg. (E-W) and the dip 60 deg. to the south. This vein has no connection with the other exposures, being farther to the south. Sample 629 taken across 6.2' at the start of the drift, assayed as follows: Gold - 0.01 oz; silver 6.40 oz; copper 0.09%; lead 23.30%; zinc 10.95%; or a value of approx. \$129.00 per ton.

Zamora No.1 Claim: About 2000' to the south west of the main shaft several small shafts and cuts have been sunk on small quartz veins in argillite schist, showing galena and sphalerite. In the first two shafts a vein about 1' in width strike at 290 deg. and dips 60 deg. to the south. Another shaft 200' to the south east shows strong mineralization on the dump with galena and pyrite and strikes N/S dipping 55 deg. to the west. Sample No.630 taken from the dump here assayed as follows:- Gold - Tr; copper 0.45%; silver 7.6 oz; lead 25.20%; zinc 3.9%; or a value of \$117.50 per ton.

Maybe No.1 & 2: Approx. 1 mile to the south of the Crown Point shaft, a series of about 8 small tunnels have been driven into the hillside. Several of these are badly caved but all are in argillite schist and were driven to develop small veins seldom over 1 foot in width but apparently with good values. Near the boundary between the two, recent work was done on a cross-cut tunnel driven at 330 deg. for 40' where a drift has been run 25' to the east and 120' to the west on a narrow vein in the schist. Ore was sacked from one small stope and is at present stored at the portal. This stope 20' long shows 2' of ore in the center pinching at each end to 1' width. In the west drift the vein pinches to a mere fracture and the argillite is blocky, while to the east the argillite is very well schisted. A sample, No.631 taken across 2' in the center of the small stope assayed as follows: Gold - 0.135 pz; silver 13.9 oz; lead 4.0%; zinc 10.8% or a value of \$63.18 per ton. Sample No.631 was taken from a few tons of sacked ore at the portal and assayed as follows: Gold - 0.245 oz. ; silver 102.8 oz. lead 11.1%; zinc 17.0% or a value of approx. \$180.00 per ton.

9. Equipment

At the main shaft on the Crown Point claim a small compressor house has been built housing a 220' Sullivan portable compressor, together with 2 jackhammers, 1 drifter, small amount of steel and a mine car.

10. Conclusions

From preliminary investigation, it is apparent that the most important occurrence of ore is in the limestone body. No work has been done to indicate the size of this limestone body to the east and west along the strike of the mineralization, but the north and south boundaries are partially exposed. From the many veins and veinlets of galena now exposed there is thought to be an excellent chance of tonnage over a width of possibly 50' which would average commercial ore with the limestone having a chance of replacement throughout. Apparently when the veins enter the schist formation they pinch to narrow widths and are erratic but show good values.

11. Recommendations

While no definite option could be secured at the time of examination, Mr. White the owner indicated that he would sell for \$100,000 on terms over a period of years. Before a decision could be reached a further thorough examination should be carried out and the various workings surveyed and mapped. The surface should be further stripped and blasted so that a complete sampling could be made across the limestone body.

The extent of the limestone body should be proven, either by surface stripping or by diamond drills. Bulldozers are available at Westbridge on a rental basis.

The veins exposed in the schist carry excellent values but are narrow and not of much interest as commercial ore but I consider that the mineralization in the limestone body has good commercial possibilities and recommend that it be further investigated and that a working option be secured.

Respectfully submitted,



O. D. Frith,
Geologist.

ODF:jdb

5 copies.

