This prospectus constitutes a public offering of these securities only in those jurisdictions where they may he lawfilly offered for sule und therein onty by persons permitted to sell such securities．

No securities commission or similar authority in Conada has in any way passed upon the merits of the securities offered heretunder and an？ representation to the contrary is an offence．

## EROS RESOURCES LTD．

（hereinafter called the＂Issucr＂）
1122－470 Granville Street Vancouver，B．C． V6B 1C5


INITIAL PUBLIC OFFERING：400，000 Shares（the＂Shares＂）

|  | Price to <br> Public | Commissions | Net Proceeds to Issuer <br> if all Units are Sold |
| :---: | :---: | :---: | :---: |
| re | $\$ 0.40(1)$ | $\$ 0.06$ | $\$ 0.34$ |
|  | $\$ 160,000$ | $\$ 24,000$ | $\$ 136,000(2)$ |

Offering has been determined by the lssuer in negotiation with the Agent．
of legal，audit and printing expenses payable by the Issuer estimated not to exceed $\$ 17,000$ ．
RKET THROUGH WHICH THESE SECURITIES MAY BE SOLD．
－HE SECURITIES OFFERED HEREUNDER MUST BE CONSIDERED SPIECULATION．AI．I．OF THE PRO－ H THE ISSUER HAS AN INTEREST ARE IN THE EXPLORATION STAGE ONLY AND ARE WITHOUT A COMMERCIAL ORE．SEE＂RISK FACTORS＂．
 TUS．LISTING IS SUBJECT TOTHE ISSUER FULFILIINGALI IHIE IISIING RI：QUIRIMMENISOF THE IK EXCHANGE ON OR BEFORE MARCH 1，1989，INCLUDING PRESCRIBED DISTRIBUTION AND IREMENTS．

NO PERSON IS AUTHORIZED BY THE ISSUER TO PROVIDE ANY INFORMATION OR TO MAKE ANY REPRESENTATION OTHER THAN THOSE CONTAINED IN THIS PROSPECTUS IN CONNECTION WITH THE ISSUE AND SALE OF THE SECURITIES OFFERED BY THE ISSUER．

THE ISSUE PRICE TO THE PUBLIC EXCEEDS THE NET TANGIBLE BOOK VALUE PER COMMON SHARE CALCULATED AS AT FEBRUARY 29， 1988 AFTER GIVING EFFECT TO THE OFFERING BY $\$ 0.259$ WHICH REPRESENTS A DILUTION OF 64．8\％．
UPON COMPLETION OF THIS OFFERING THIS ISSUE WILL REPRESENT $25.57 \%$ OF THE SHARES THEN OUTSTANDING， AS COMPARED TO $56.25 \%$ THAT WILL THEN BE OWNED BY THE CONTROLLING PERSONS，PROMOTERS，DIREC－ TORS AND SENIOR OFFICERS OF THE ISSUER．SEE＂PRINCIPAL SHAREHOLDERS＂．

ONE OR MORE OF THE DIRECTORS OF THE ISSUER HAS AN INTEREST，DIRECT OR INDIRECT IN OTHER REPORTING； COMPANIES．SEE＂DIRECTORS AND OFFICERS＂FOR A COMMENT AS TO THE RESOLUTION OF POSSIBLE CON－ FLICTS OF INTEREST．
the agent，subject to its rights of termination set out heriein，has ngreed to purchasi any SHARES NOT SOLD AT THE CONCLUSION OF THE OFFERING．

THIS PROSPECTUS ALSO QUALIFIES THE ISSUANCE OF THE AGENT＇S WARRANTS AND THE SALE AT THE MARKET price at the time of sale of any shares acquired by the agent pursuant to its guarantee．Thi： AGENT MAY SELL ANY SHARES ACQUIRED ON THE EXERCISE OF THE A（IENT＇S WARRANTS PURSUANT TO TIII SECURITIES ACT AND REGULATIONS WITHOUT FURTHER QUALIFICATION．SEE＂PLAN OF DISIRIBUTION＂．

WE，AS AGENT，CONDITIONALLY OFFER THESE SECURITIES SUBJECT TO PRIOR SALE，IF，AS AND WHEN ISSUED BY THE ISSUER AND ACCEPTED BY US IN ACCORDANCE WITH THE CONDITIONS CONTAINED IN THE AGENCY AGREEMENT REFERRED TO UNDER＂PLAN OF DISTRIBITION＂．

[^0]BRINK HUDSON \＆LEFEVER LTD．
1500－666 Burrard Street
Vancouver，B．C．
V6C 3C4

EFFECTIVE DATE：SEPTEMBER 1,1988

## DESCRIPTION OF BUSINESS AND PROPER'IY OF ISSUER

## The Business

The Issuer is a natural resource company engaged in the acquisition, exploration and development of mining properties. the lssuer has interests in the properties described below under the heading "line property." The Issuer intends to seek and acquire additional properties worthy of exploration and developinent and participate in the development of its existing property.

## The Property

## Waterloo Mine Property

I'he Issuer entered into an agrement dated the 30 th day of Jctober, 1987 with $H$. Veerman, W.G. Botel and Veerman Botel Linited (the "Optionors") of 307-402 West Pender Street, Vancouver, British Columbia, VbB 1T6, which agreement was amended by three amending agreements between the parties dated respectively the $29 t h$ day of January, 1988, the 14 th day of April, 1988 and the 8 th day of August, 1 y8b (which Agreement as amended by the amending aqreements is nereinafter referred to as the "Veerman/Botrl (option Aipermont") wherein the issuer acquired an option to acquire a ond humdrod ( $100 \%$ ) percent beneficial interest in and to the waterloo crown grant lot 4815 , and the Griz 1,2 and 3 recorded mineral claims located in the Lightning Peak area in the Vernon Mining Division, British Columbia (the "Property") subject to a reservation in favour of the optionors of three (3\%) percent of net smelter proceeds froill the property. The Issuer has the option to earn its one hundred (100\%) percent interest subject to the net smelter return royalty by complying with the following terms and conditions of the Veerman/Botel Option Agreement:

1. By paying initial option payments totalling $\$ 35,250.00$ (paid);
2. By issuing 24,500 common shares from treasury to the optionor:s on the date of approval of the Issuer's shares for trading on the Vancouver Stock Exchange or within ninety (90) days of April 30, 1988 whichever first occurs;
3. BY issuing 20,000 common shares to the optionors on the commencement of trading of the Issuer's shares on the Vancouver Stock Exchange but in any case, within 270 days froll 0ctober 30,1 y87;
4. An additional 80,000 comnon shares to be issued in two blocks of 40,000 shares upon completion of a phased exploration work program to be conducted on the property according to the recommendations of an independent consulting enyineer. 'lhe engineering reports must be filed with the vancouver Stock Exchange and the program of evaluation and recommendations be
acceptable to it for purposes of the issuance of the share consideration herein but in any case, all of the foregoing shares must be issued by the earlier of two (2) years of the date of listing of the Issuer's shares on the Vancouver Stock Exchange or within two and one-half (2 $1 / 2$ years) from the date of execution hereof;
5. 'The Issuer further must expend at least $\$ 30,000$ on exploration and development of the Property within 180 days of October 30 , 1987 (completed) with an additional $\$ 60,000$ being required to be spent by December 31, 1988 and a further $\$ 60,000$ by December 31, 1989;
6. Upon payment of the cash and share consideration to the Optionors set out above the Issuer acquires a one hundred (100\%) percent recorded and beneficial interest in and to the property subject only to:
(a) a reservation in favour of the Optionors of three (3\%) percent of net smelter proceeds until $\$ 350,000$ has been paid to the Uptionors on account of royalty payments at which time the rate shall be reduced to one (1\%) percent of net smelter proceeds until $\$ 1,000,000$ in aggregate has been paid to the optionors in royalty payments at which time all royalty payments are discontinued;
(b) the Issuer's right, title and interest reverting back to the Optionors in the event that the Issuer has not, within three (3) years of October 30, 1987, obtained a feasibility study recommending the placing of the property into commercial production and diligently proceeding to so effect the recommendations within five (5) years from October 30, 1987. The requirement for commercial production is mining, shipping or processing of that tonnage per day from the property as recommended in the said feasibility study for 100 of any 120 consecutive days.

## Location and Access

The Property is located in the general area of Lightning Peak in the Vernon Mining vistrict of oritish Columbia. The area is a plateau at an elevation of approximately 5,500 feet above sea level.

Access to the area is gained from Vernon by taking Highway 6, 80 kın east to the kettle River Road, 10 km south on the Kettle River Road to Forestry Road $K-50$, then by following Forestry Road $K-50$, 5 km to the Winnifred Crees Road, then vy following the winnifred Creek Road for $\angle 4 \mathrm{~km}$ to the property. A four-wheel drive vehicle is required.
$\therefore$ :ミさory of the waterloo mine Property
ixploration and development of the property commenced in 1903 and considerable anount of work was done by the early miners which included four adits: Adit ivo.1, 1,1<U feet long, Adit wo. 2,250 feet long, Adit ivo.3, 4 U feet long and adit ivo.4, 10 feet lony. During this period the reports indicate that a number of sinall tonnage, high grade shipments were made from the Property.

In the lyju's paycheck Mining Co. extended the underground workings ana carried out some drilling to investigate the vein on the property. It is reported that 1,600 tonnes of ore were put through the Paycheck Mining Co. mill runniny 10 oz. of silver, ten (10\%) percent zinc and four (4\%) percent lead.
in lyoy, the Great Horn ifining Syndicate inc. rehabilitated much of the underground workings on the 4 th level (adit-dritt No. 4) - a rather crooked 1,780 root arift on the main waterloo vein.

During the period 1980 to 1984 Veerman Botel litd. caused the No. $;$ adit to be driven to a total lengtin of 7 bu feet. The results of this work appeared to be inconclusive as to establishing tonnage or grade of the waterloo vein.
work Done by the Issuer
In iNovember, 1987 the Issuer commenced exploration and dovnlopinent work and carried out $j$ kill of line cutting on the iroperty. In addition, bridye and road repairs were made, adit inspections were carried out, a rock slide at Adit No. 5 was partially removed and trailer repairs and cleaning of old mining debris were accomplished, at a total cost of $\$ 3 v, 847$.

## Surtace Plant and Equipinent

'he surface plant and equipment consists of two trailers and an $8^{\prime} x$ $1^{\prime} x 6^{\prime}$ concrete and brick explosives storage shed. Une trailer neasures $1 u^{\prime} x L^{\prime}$ and contains the sieeping quarters and kitchen facilities. 'The other trailer ineasures lu' $x$ io' and contains the washroom and shower facilities. The trailers remain the property of the Optionors and the Issuer nas the use of them during the term of the uption. if the Issuer exercises the option and wishes to continur using the trailers, further arrangenents will be made with the uptionors.
underground plant and Eyuipment
ine underground plant and equipment consists of approximately 2,000 teet of tunnelling along the vein on the property with access from
various levels through Adits No. 2, 4 and 5. Adits No. 1 and No. 3 have been discarded and have not been rehabilitated. There is no underground plant and equipment other than some narrow qauqe railway track.

## Recommendations

The Issuer's consulting engineer, James S. Falconer, P. Eng., in his report dated January 30,1988 and revised July 5, 1988 (hereinafter the "Falconer Report") states that:
"due to the evidence that the vein is narrow $\pm 3$ feet in width and due to the lack of evidence that the vein increases in width downward, the potential of developing minable tonnages is dependent upon finding more high-grade silver ore. Local portions of the developed vein assaved 190 oz to perhaps 500 oz per ton. The silver mineral occurs in several forms which include ruby silver and argentite. With these conclusions in mind a proqram of intense sampling is recommended for Phase I."

The Issuer intends to carry out Phase $I$ of the exploration program recommended in the falconer Report. Phase I consists of detailed sampling ( 500 samples), assaying of the samples and 300 feet of underground short-hole drilling at an estimated total cost of $\$ 60,000$.

Dependent upon the results of Phase $I$, a second phase of exploration consisting of drifting, diamond drilling and stope preparation is recommended, at an estimated cost of $\$ 200,000$. The funds required for this program would be dependent upon a subsequent offering of shares of the Issuer.

THERE IS NO KNOWN BODY OF COMMERCIAL ORE ON THE PROPERTY AND THE PROPOSED PROGRAM MUST BE CONSIDERED AN EXPLORATORY SEARCH FOR ORE.

## RISK FACTORS

The shares offered by this Prospectus must be considered speculative, generally because of the nature of the Issuer's business. In particular:
A. The Issuer will lose all right, title and interest in the Property, without compensation, if it has not obtained a feasibility study recommending production by october 30,1990 and if the Issuer is not diligently proceeding to place the property in production at the rate of 50 tons per day by October 30,1992 .
B. There is no known body of ore on the Jssuer's mineral property. The purpose of the present offering is to raise funds to carry out further exploration with the objective of establishing ore of

## Juarez $\mathcal{E n g i n e e r i n g ~ L u l . ~}$

## Ottice: (604)685-1252

Home: (604)687-0855

## GEOLOGICAL REPORT

ON THE

WATERLOO MINE PROPERTYVERNON MINING DIVISION, BRITISH COLUMBIA$118^{\circ} 35^{\prime}$ W \& $49^{\circ} 48^{\prime} N$NTS 82 E/15

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## INTRODUCTION

Pursuant to a request by Mr. Lewis Vacek, President of Eros Resources Ltd., this report was written. It is based upon available maps, reports, extensive history of the Waterloo Mine, and on a property visit made January 12, 1988. However, the underground workings were not examined due to snow conditions.

## LOCATION AND ACCESS

The Waterloo Mine is located in the vicinity of 118 degrees and 35 minutes west longitude, and 49 degrees and 48 minutes north latitude, in the Vernon Mining Division of British Columbia. It is located in N.T.S. 82 E/15. The area is a plateau at an elevation approximately 5,500 feet above sea level. The location of the area is shown on Figures 1 and 2, which is in the general area of Lightning Peak.

Access to the area is gained from Vernon, by taking lighway $6,80 \mathrm{~km}$ east to the Kettle River Road, 10 km south on the Kettle River Road to Forestry Road K-50. Follow $\mathrm{K}-50,5 \mathrm{~km}$ and keep to the right on the Winnifred Creek Road. Follow the Winnifred Creek Road and keep right for 24 km . The following "milestones" are passed on the Winnifred Creek Road.

| Bridge | 8.8 km |
| :--- | ---: |
| Fort Jct. (Keep right) | 9.1 km |
| Winnifred Creek Bridge | 10.0 km |
| Cattlegard | 15.0 km |



| Jct. (Keep right) | 15.4 km |
| :--- | :--- |
| Jct. (Keep right) | 18.4 km |
| Jct. (Keep right) | 20.5 km |
| Campsite (end of road) | 24.0 km |
| Then to the property. |  |
| A four-wheel drive vehicle is required. |  |

TOPOGRAPHY
The Waterloo Mine is located on a gently sloping plateau in the vicinity of Lightning Peak. Poor to medium quality forest covers the area.

The four claims, comprising the Waterloo Mine property, are located near the headwaters of Waterloo Creek at about elevation 5,500 fret alove sea level.

Geomorphologically, the Waterloo area is a plateau with dissections by streams. The undissected plateau, which forms the greater portion of the area, is a rolling plain covered by thin alluvial cover. Outcrops are generally absent.

PROPERTY
Waterloo Crown Grant, Lot 4815
Grizz No. 1
Grizz No. 2
Grizz No. 3
The author of this report has not established title to the above property.



RHDFYMVV

HISTORY
Waterloo Mine:
The Waterloo No. 3 claim is the Waterloo Crown Grant, Lot 4815 shown on Figure 2 and was the first location made on this group. It was staked in 1903 by Adam Scaia, owner of the Silver Spot Claim. In the same year Scaia sold the Waterloo Claim to George McLeod who took out a little high grade silver ore and later, in the same year, turned the property over to Dr. C. M. Kingston and G. A. Rendell. During part of the period of their ownership the property was leased to George S. Boug and Charles Hammarstadt who extracted several tons of high grade ore. This ore was packed out at a reported cost of $\$ 64$ per ton.

The first official reference to production was made in 1904 by William Thomlinson, who states that up to that time "two small shipments of ore have been made, one of which gave the high return of 609 ounces silver, $\$ 10.30$ gold to the ton, and 45 percent lead." The next reference is a brief statement in the Annual Report for 1917 to the effect that the vein carries values in both gold and silver. Reports for 1918 state that "Lessees, George Boug and Charles Hammarstadt packed on horses 9,381 pounds of high-grade ore to Edgewood to be forwarded from that point to the Trail smelter for treatment. The shipment netted $\$ 3,244.53$. The ore contained silver almost entirely, but 375 pounds lead was extracted." Some of this ore is reported to have assayed over 700 ounces in silver. In the following year the "development work consisted of driving a tunnel below No. 1...... Ore was struck in this tunnel and a shipment of 13 tons was made," 10 tons of this shipped in March had an average content of 528 ounces silver to the ton and 5 percent lead, and 3 tons shipped in April carried 293 ounces silver to the ton and 4 percent lead.

In 1920, 22 tons of high-grade silver-lead ore was packed out on horses. The report for 1927 indicates that the ore shipped in 1920 was of about the same class as that shipped in 1919.

In 1929, three shipments were made. The first, amounting to 31 tons, and obtained from Nos 1 and 2 adits, was shipped in Necember 1929, and averaged 482 ounces silver a ton; the second, 49 tons and obtained from the same workings, was made in February 1930 and averaged 250 ounces in silver; and the last, about 30 tons from No. 2 adit, was shipped in March 1931, and ran 472 ounces silver and $\$ 7$ to $\$ 9$ gold to the ton. It is also reported that this ore carried values in tin to the amount of several dollars per ton.

In 1929 workings at the Waterloo Mine included four adite which, in order from east to west and from highest to lowest, are No. $1 ; 1,120$ feel long; No. 2; 250 feet long, and 24 feet below No. 1; No. 3; 40 feet long, and 52 feet below No. 2; and No. 4; 10 feet long and 36 feet below No. 3 . These adits are driven on the main Waterloo vein zone which outcrops down the slope below No. 1 adit. This slope is steep, averaging about 25 degrees to No. 4 adit. No. 4 adit is close to the bottom of a narrow, dry ravine, on the other side of which the ground rises again to form a low ridge before resuming its downward slope into the main branch of Waterloo Creek. The vein zone, if continuous to or beyond this creek would, at creek level, gain an additional depth of about 200 feet. In the opposite direction, in line with the strike, the ground rises very slowly above No. 1 adit.

No. 2 adit is connected with No. 1 and with the surface by a raise and stopes at the surface, a number of trenches have explored the easterly continuation of the vein for a distance of 200 feet or so beyond the face of No. 2 adit.

Description of the Vein from "Cairnes":
Movement during the shear zone appears to have been along one principal plane and others of subsidiary importance on either side. These planes are irregular in strike and dip, in consequence, may merge with, or branch from, those on either side. The hanging and footwalls of the shear zone are, therefore, difficult to recognize except by crosscutting. Along the walls of the principal plane of shearing, on Nos. 1 and 2 levels, strong grooves dip about 35 degrees to the east. The relative positions of dislocated parts of dykes on either side of this plane of shearing indicate that the south wall has moved upwards and towards the west with respect to the north wall. The amount of displacement is uncertain, but does not appear to be very great. On No. 2 level a dyke in the north wall of the shear zone is offset in the south wall 35 feet to the west. The plug of granodiorite towards the face of No. 2 level appears to have been offset a few feet in the same direction. On No. 2 level, a fault striking nearly north and south, and dipping 30 to 35 degrees west, is offset by the main shear zone and the latter intersected by a strong fault striking about 20 degrees west of north and dipping 30 degrees northeast. At about 130 feet from the portal of No. 2 level, a strong fault, striking north 40 degrees east, and dipping about 20 degrees southeast, cuts across the fissure zone and persists to the surface. Ore occurs on either side of this fault and above No. 2 level, formed a high-grade shoot which extended to the surface.

The main "vein" or shear zone is mineralized along its entire investigative length, this length being unknown by this author, but, as yet, mineralization of economic value has been found only within one relatively restricted section. This section extended from the surface to No. 2 adit level, below
which its extent has been only slightly investigated. Within this section, above No. 2 level, the high-grade ore has been mostly stoped out. It occupied a length of about 40 feet at the surface and at the levels of No. 1 and No. 2 adits. Shallow pits in the floor of No. 2 level were filled with water. The high-grade ore at the surface is almost vertically above or slightly to the east of the high grade ore at No. 2 level. The strong, easterly-dipping grooves on the walls of the vein, and the possibility that mineralization may have been guided into the shear zone by the southeasterly=dipping fault mentioned above, suggest that if the ore shoot continues below No. 2 adit it should rake to the east. On the other hand and because most of the high grade ore extracted from below No. I level underlay the southeasterly dipping fault, whereas, the high grade ore above No. 1 level lay above the same fault, it seems likely that this fault may be in part or entirely post-mineral and if so, that it is a normal fault which has displaced the part of the ore body above No. 1 level to the east with respect to the part below No. 1 level.

Mineralization of medium to low-grade character occurs within the shear zone on either side, but chiefly west of the main ore shoot. In this direction samples taken for a distance of about 50 feet along No. 2 level indicated that over a width of three feet the average values were: silver 4.0 ounces to the ton; lead, 3.0 percent; and zinc, 4.2 percent. On No. 2 level very little ore mineralization was observed beyond 130 feet from the portal until near and at the face where the shear zone is quite heavily mineralized with zinc blende and carries some galena. Values in silver are low, but the extent of mineralization at the face is such as to encourage exploration in this direction. This face had subsequently been removed.


LEGEND


Chiefly crystalline limestone


Metamorphic rocks, (mainly volcanic?) intimately invaded by granodiorite and diorite.

FIGURE 3
EROS RESOURCES LTD.

## WATERLOO MINE

VERNON MINING dIVISION, b. c.

Aifer G.S.C.
$0 \quad 100$ FEET 20

GEOLOGY MAP
DATE: JAN., 1988 SCALE: As Shown

The main "vein" or what is presumed to be this vein, is picked up in the lower workings which consist of short adits and open cuts, but to date no appreciable amount of ore has been found, though some attractive mineralization has been noted. Probably the most interesting discovery was made in an open cut alongside the road to the compressor house, a few feet southwest of the portal of No. 3 adit. There, a vein of galena, two inches wide, occurs in a narrow acid dyke. Its proximity to the main shear zone suggests that some work should be done to discover its connexion, if any, with the main "vein".

The ore of the shoot stoped out above No. 2 adit level, included a conspicuous amount of native silver, argentite, ruby silver, stephanite and grey copper associated with argentiferous galena and zinc blende.

These minerals, according to the report of persons unknown to this writer, occurred in lens-like masses and in stringers accompanied by a varying proportion of gangue mineral, chiefly calcite. A couple of specimens of vein matter from this high grade shoot were examined microscopically under reflected light. One contained a solid chunk of native arsenic about two inches in diameter, mquilded into a nest of corasely crystallized calcite. The other specimens had the appearance of an ore-breccia in which angular fragments of ore minerals or groups of minerals were scattered through a gangue of mixed calcite and quartz. The ore minerals included sphalerite and galena associated with two varieties of ruby silver, each of which carried numerous microscopic bodies of native silver. The ruby silvers both appeared

to be antimonial types, pyrargyrite and, probably polyargyrite.

The low grade mineralization consists of streaks and disseminations of, principally, zinc blende and lesser galena, occurring at intervals along and across the shear zone. The wallrock is chiefly crystalline limestone. Gangue minerals include a varying proportion of quartz and calcite. At the face of No. 2 level the vein matter shows a brecciated structure in which chunks and hunches of pale yellow or brownish zinc blende, associated with some fine to coarse-cube galena, are moulded in a calcite gangue All of the above observations are history prior to 1954.

Waterloo Mine - Paycheck Mining Co. - 1954:
The adit levels have been extended with No. 4 adit being last reported, (1934), as 1,780 feet long. No. 2 adit appears to be accessible for some distance below open stopes, but would require a transit survey to produce an adequate geology map.

A number of drill holes have been put down to investigate the vein. The core for five holes apparently drilled in this area is available on the property and was roughly logged. Location and dip of the holes is unknown at present. Two were drilled from the north side about 150 feet west of the No. 4 adit portal. One of these is supposed to have cut vein material, while the other was apparently too steep to reach the vein. One hole location is shown on Figure 4. Three of the five holes logged intersected vein material, although none of the intersections looked to be high grade and no further information was available on these drill holes at the time of the writing of this report.

The following assays were taken by the Paycheck Mining Co. A chip sample was taken from a 34 inch width of well-mineralized vein on a stope pillar between adits No. 3 and No. 4. This assayed 20.5 ounces ilver; $4.6 \%$ lead, and $13.79 \%$ zinc.

A second chip sample was taken from the end of the stope above No. 2 adit across 30 inches of moderate mineralization. Thia assayed 3.1 ounces silver; $4.19 \%$ lead, and $3.87 \%$ zinc.

Two grab samples were taken from dumps outside No. 1 and No. 2 adits. The first of these assayed $2.59 \%$ zinc; $0.05 \%$ lead, and 7.5 ounces silver. This material had been partially removed and put through the Paycheck mill. The second sample was from a coarse dump with considerable sphalerite, but very little of any other sulphides and assayed $2.77 \%$ zinc, and 0.98 ounces silver.

Information, both verbal and published, from various sources, indicates approximately 1,600 tons of ore were put through the mill running ten ounces silver; $10 \%$ zinc, and $4 \%$ lead. Of this, about 800 tons
came from dumps. The Minster of Mines Report for 1954 states:
"...the No. 4 adit was rehabilitated and the vein
within 200 feet of the portal was stoped to surface and the level above."

It may be pointed out here that this section was described as "lowgrade" in earlier descriptions.

Of the concentrates produced about 40 tons were shipped from the property during the summer of 1967 . The shipper expected these to grade 40 ounces silver per ton for 37 tons zinc concentrate, and about 200 ounces per ton for three tons lead concentrate.

The vein structure appears strong, although complicated by slips and faults. It is well mineralized in places.

The property warrants careful transit survey and geological mapping of the accessible workings. Where justified, the stope pillars and drift backs should be sampled. The extensions of the vein, especially to the west and in depth, should be tested by drilling.

Core recovery appears to be relatively good.

Work Done by Great Horn Mining Syndicate Inc. - 1969:
All the underground work performed on the Waterloo property was on the 4th level (Adit-Drift No. 4) - a rather crooked 1,780 foot drift on the main Waterloo vein. The drift was originally worked and small stopes, raises and winzes were developed during the period 1931-1934, but the larger stope, which extends 200 feet from the portal, was not developed until the early 1950's by Paycheck Mining Co.

The condition of the adit-drift reflected its age. Although rotting of the timbers beneath the main stope is well established, it was considered that this section was secure enough to carry out a limited exploration program without major reconstruction.

Two sections, 200 feet in length, were flooded to a depth of 18-20 inches by natural groundwater being dammed behind collapsed and caved sections. One of these was at the portal and the other involved a $30-$ foot section in a strong shear at 1,400 feet from the portal. Prior to rehabilitation, this latter blockage prevented access to the remaining 400 feet of drift. It is not certain whether this section caved naturally or was the start of a new raise - the badly fractured nature of some of the basalt dyke in the center of the sheared biotite schist would suggest that it had been blasted but no mineralization was seen while mucking to indicate a reason for raising at this location.

Two other timbered sections along shears had collapsed also, but sloughing was mainly confined to the walls and did not prevent access. These collapses were at 740-800 feet and 900-970 feet from the portal. At 500 feet from the portal an inclined winze reported to be 28 feet deep, forms an adequate sump for drilling and washing. A new bridge was constructed across it early in the rehabilitation program.

A railway line between the portal and the sump was still in good condition and a small flat car on it was fixed up for use in transporting air pipe and drill equipment. A ore wagon also on the line was removed.

The old portal was re-excavated with $3 \frac{1}{2}$ cubic yard four-wheel drive payloader rented from Vernon, British Columbia, and a new portal was constructed. The floor of the drift was cleaned up and ditched to


#### Abstract

remove all the water. Muck and old timbers were dug out and cut away to provide sufficient access through the next two collapsed sections and new timbering installed where necessary.


The major cave, which was totally preventing access, was very bad and necessitated several days shovelling, sledge-hammering and retimbering. It is conservatively estimated that about 500 cubic feet of muck and basalt blocks were removed from this collapse, which left the back 20 feet high.

Work Done by Veerman \& Botel Ltd.:
Between 1980 and 1984 the No. $5-8^{\prime} \times 10^{\prime}$ adit was driven to a total length of 750 feet. The results of the above work appears inconclusive as to establishing tonnage or grade of the Waterloo vein.

During 1983 road building and track installation was was undertaken.

## Work Done by Eros Resources Ltd.:

During November 1987 to January 1988, five km of line cutting was done on the Waterloo Property as recommended by Messrs. J. Panenka, P. Geoph and E. L. Bergen, P.Eng. (Ont.) In addition, bridge and road repairs were made, adit inspections were carried out, a rock slide at adit No. 5 was partially removed and trailer repairs and cleaning of old mining debris were accomplished before snow and freezeup discontinued the above operations.

The following excerpts by Cairnes are presented here as a useful guide to evaluate the complexity of the rocks in the area of the Waterloo Mine:
> "Lightning Peak area is in the heart of the Columbia system of mountains. These are bordered on the east by the great valley of the Columbia River and on the west they merge into the Interior Plateau region of British Columbia. The mountain system has been subdivided into a number of mountain groups or ranges, of which that, in the vicinity of Lightning Peak is commonly referred to as the Monashee Mountains.

[^1]"The hard rock formations of the area may be conveniently described under four main subdivisions, namely: Tertiary basalt; minor intrusives; batholithic intrusives; and, pre-batholithic rocks. The first is represented only at one locality where it forms the upper 200 feet or so of Lightning Peak, the highest point in the area. Minor intrusives are widely distributed within the areas occupied chiefly by pre-batholithic formations and are represented mostly by acidic types. Of these, quartz-porphyry dykes are most abundant. Other types include dyke-like bodies of more granitic texture and, still others, mostly small, of a pegmatitic facies. These acidic intrusives are commonly associated with mineralized veins and have been looked upon with considerable favour in mining operations to date. Minor basic intrusions are relatively scarce and economically less interesting than the more acid types. Batholithic intrusions occupy the larger part of the area. They vary in composition from granite to diorite, the more acid types constituting the bulk of these intrusives as mapped, whereas the more basic rocks are, in general, intimately associated with the formations they intrude. The pre-batholithic formations occur mostly within a belt, about a mile wide, which stretches in a general east and west direction across the area. They include a variety of both sedimentary and volcanic rock types and have been greatly altered by batholithic intrusions. Most of the mineral deposits of the camp lie within this belt of older rocks.

## TERTIARY BASALT

"The upper 200 feet or so of Lightning Peak is composed of a black or dark bluish-grey, massive, fresh-lonking lava. The rock varies from dense to slightly angular and carries an abundance of fresh olivine crystals that are, in part, disseminated through the rock, and in part segregated in nests varying in size up to several inches in diameter and composed principally of olivine and pyroxene. Under the
microscope a thin section the lava was observed to contain abundant crystals of olivine and pyroxene (dialage) in a microcrystaline groundmass composed, in part, of feldspar and carrying small grains of magnetite and other minerals.
"The contact of the lava with the underlying older rocks is obscrued by talus so that its nature could not be determined. It appeared, however, that the rock was denser towards the base than at the summit, although there was little evidence in that to indicate whether the occurrence represents a heavy flow or succession of flows covering a large area in Tertiary time and since removed by erosion, or whether Lightning Peak is the site of an old volcano. No other occurrences of such lava are known anywhere in or near this area in spite of the fact that some nearby summits reach almost to the height of Lightning Peak and others not many miles away are considerably higher. The top of Lightning Peak has been strongly glaciated and large blocks of the lava observed towards the head of Soda Creek over 3,000 feet to the southeast of Lightning Peak seemed to indicate the general direction of movement of the ice. Lightning Peak is somewhat cone-shaped, a feature that serves to distinguish it from other mountain tops in and near this area. The suggestion is that, although erosion has doubtless played a principal role in developing its contours, the present prominence of this peak is an inherited characteristic, developed, in the first place, from local volcanic eruption.

## MINOR INTRUSIVES

"Of the minor intrusive rocks, those of more acid composition are the more numerous and economically are the most interesting. They may be divided into three principal types: quartz porphyries; granitic porphyries; and, pegmatites.

## QUARTZ PORPHYRIES

"Rocks classified as quartz porphyry are abundant, within areas of the pre-batholithic formation. They form long, dyke-shaped masses mostly only a few feet wide, but traceable in some instances for at least several hundred feet. They are massive and so alike in general appearance that in most cases they can be readily identified even in the smallest exposures. They are typically light to creamy grey-medium grained and of uni form texture and acid composition. Hand specimens rarely show appreciable amounts of dark minerals and seem to be very largely composed of quartz and feldspar. Weathered surfaces are commonly speckled or spotted rather than uniformly coloured. Where pyrite is present, the rock may weather a rusty brown.
"The quartz prophyry dykes were found intruding the prebatholithic formations, but were not observed cutting batholithic rocks. They are in many cases closely associated with quartz veins carrying values in gold and other metals. Such quartz veins occur along either the foot or hangingwall of the dykes, or across the dykes, but are commonly most continuous where developed along the footwall. It seems unlikely, however, that the dykes and veins are genetically connected. The dykes in places carry a little pyrite, but in general are notably lacking in ore minerals. Quartz veins similar to those associated with the dykes also occur quite independently of the dykes. In certain instances, too, as at the Waterloo and Lightning Peak mines, the quartz porphyry dykes were observed to have been faulted and mineralized vein quartz to be distributed along the fault zones. In most instances where the association of dyke and vein matter was noted, it appeared that the relation was structural rather than genetic as if the dykes provided lines of weakness followed by the vein solutions.

## GRANITIC DYKES

"A number of dykes and small intrusive masses of granitic texture, and in mineral composition most resembling the members of the batholithic rocks, were observed within areas underlain by pre-batholithic formations. A number of such bodies, for example, cross Rampalo Creek and resemble one or other of the batholithic members in that vicinity, except that, as a rule, they are finer textured. Others were noted at the Lightning Peak mine and are intersected by the main vein at that property. The dykes vary up to 100 feet or more in thickness. The other bodies outcrop over irregular areas which, owing generally to incomplete exposures, are of doubtful size.

## PEGMATITES

"Pegmatites and pegmatitic rocks are abundantly represented in certain parts of the area. A number of occurrences were noted. These pegmatitic intrusives are typically coarsegrained rocks of irregular texture and composed chiefly of quartz and alkali feldspar.
"The pegmatites are apparently more or less dyke-shaped, but are less regular than the quartz-porphyry intrusives. These two types are, however, probably closely related in age and though not observed in contact, some of the pegmatitic rocks grade into finer grained types much resembling quartzporphyry.
"Minor intrusions of basic composition are scarce as compared with the acid types. Occasional dyke-like bodies a few feet wide, of massive medium to fine-grained, dark greenish grey rocks, were observed at widely separate localities within the outcrop areas of pre-batholithic rocks. They were not examined microscopically, but appeared to have about the composition of diorite and are probably related to neighbouring batholithic intrusions. Nothing of economic interest was observed in their vicinity.

## BATHOLITHIC INTRUSIVES

"Batholithic intrusives occupy a large part of the Lightning Peak area and, except to the west, in which direction the extent of the pre-batholithic formations is unknown, completely surround it. For convenience in description these batholithic rocks may be subdivided into three members each of which possesses certain distinctive lithological features. These members are referred to as: 1) porphyritic granite; 2) granite-diorite complex; and, 3) pink granite.

## PORPHORYTIC GRANITE

"This granite is grey, coarse-grained rock, particularly distinguished in outcrop by conspicuous phenocrysts of potash feldspar averaging half an inch or so in length. Otherwise the rock is a coarse-grained aggregate of quartz and feldspar with from five to ten percent of ferromagnesium minerals. chiefly biotite. Under the microscope a specimen from the Dictator claim was found to carry about equal proportions of quartz, orthoclase and plagioclase with some microcline and biotite. The quartz, in particular, showed evidence of strain and was partly granulated. This granite near its main contacts with pre-batholithic rocks, and where it occurs in small, isolated bodies within these older rocks, is generally less quartzose and takes on more of the composition of a syenodiorite. A specimen of this sort of rock obtained from a small body was studied under the microscope. It carries about equal amounts of orthoclase and plagioclase, but comparatively little quartz. Both green hornblende and brown biotite are present. One large phenocryst of.orthoclase contains smaller crystals of hornblende and plagioclase. The plagioclase shows albite pericline and Carlsblad twins and seems to be about oligoclase in composition. Vermicular intergrowths of quartz in orthoclase were observed. Both of these minerals show strain.
"The porphyritic granite is the principal member of the "Nelson" granite referred to by Brock in earlier explorations west of the Columbia River and is correlated with the granite in the vicinity of Nelson and northward into the Slocan district, this granite being the most conspicuous and lithologically most easily recognized member of the Nelson batholith complex.

## GRANITE-DIORITE COMPLEX

"This term has been applied to the large body of granitic rocks occupying the southwestern part of the Lightning Peak area; to a smaller body in the vicinity of the Waterloo No. 3 claim; and to innumerable occurrences intimately associated with the pre-batholithic formations and for the most part either too small, or too incompletely explosed, or too intricately associated with the older rocks to permit separate mapping.
"These rocks are mostly grey to greenish grey, medium to coarse-grained, equigranular and vary in mineral composition from diorite or quartz diorite to granite. Intermediate types of about the composition of granodiorite are the most abundant and are the chief components of those areas mapped. So far as could be observed, contacts between types of varying acidity are quite gradational. The more basic types are in general those associated most intimately with the older rocks and their variation from more normal composition is attributed to contact relations with these pre-batholithic formations. These relations are so intimate that, commonly, single outcrops of the older rocks a few square yards in extent are penetrated by intrusive material to the extent of 50 percent or more of the volume of the outcrop. Contacts may be sharply defined or may indicate gradations from granitic to older rocks, so that it may be difficult to decide whether the rock at a certain point is intrusive or not. Further from their contacts with the older rocks, the intrusives are more acid and more uniform in appearance and composition.
"Specimens for microscopic examination were obtained from three widely separate localities; one about a mile south of the Waterloo mine; another about a mile southwest of Lightning Peak; and the third from the Granite range west of the junction of Waterloo and Rendell creeks. These specimens are much the same in appearance and composition. Each carries abundant quartz which is more or less strained and fractured. In each, feldspar constitutes a somewhat greater proportion of the rock than the quartz and includes both orthoclase and plagioclase, the latter of which is the more plentiful, though not notably so, and is about oligoclase in composition. Both hornblende and biotite are present, but in minor proportions to the felsic constituents, and are partly altered to chlorite. Accessoary minerals include titanite, magnetite and apatite.
"A variety of somewhat different appearance outcrops on a hill $1 \frac{1}{2}$ miles about west-southwest of Lightning Peak. Below, approximately 250 feet from the summit of this hill on the eastern and northern slopes, the well-exposed rock is a massive, grey to slightly pinkish type carrying abundant dark green, chunky crystals of pyroxene and a smaller but conspicuous amount of fresh-looking biotite. The remaining 60 percent or so of the rock is chiefly feldspar of grey to slightly pinkish cast. Under the microscope the rock was found to be a quartz diorite composed largely of plagioclase occurring in lath-shaped crystals and about andesine in composition. Otherwise the rock carries scattered, comparatively large crystals of diallage, more abundant flakes of dark brown biotite, a little quartz, probably between 5 and 10 percent of orthoclase and accessary apatite.

## PINK GRANITE

"The third principal member of the batholithic rocks appears to underlie a large area on either side of the Galloping Mountain trail.
"The pink colour of this granite is due to the large proportion of pink feldspar present. Otherwise the rock carries abundant quartz, commonly somewhat smoky, and a small but variable percentage of dark minerals of which biotite is most conspicuous. In some places almost no dark minerals can be seen. Under the microscope specimens obtained from the main outcrop area southeast of Lightning Peak and from Rampalo Creek were found to be almost exactly alike and to have the composition of a very acid granite. The rock carries about equal amounts of quartz and feldspar. The former shows some strain. The feldspar is in part orthoclase and in part plagioclase of about the composition of albite-oligoclase. A very little biotite is present and is mostly altered to chlorite. Accessary minerals include quite a lot of titanite and magnetite. The pink granite is distinguished mineralogically from the other batholithic rocks by the more sodic character of its plagioclase feldspar and by the relatively small percentage of mafic minerals present.
"This granite is mostly quite massive and as such exhibits but little evidence of deformation. Locally, however, it is quite strongly sheared and fractured and the rock loses the fresh appearance which characterizes it in its more massive outcrops. A belt of sheared granite about 200 yards wide and striking northeasterly was observed in the granite area about a mile southeast of Lightning Peak near the contact with pre-batholithic rocks. What may be a continuation of this same sheared belt is represented by a similar width of the same type of granitic rock crossing Rampalo Creek about 2,000 feet from its mouth.
"A very similar pinkish granite was observed along the trail to Galloping mountain and also outcrops widely in the vicinity of this prominent hill.

## LIMESTONE

"A great deal of limestone was observed within an elongated elliptical area extending from the vicinity of the Lumpy workings, (about 3,000 feet north-northeast of Lightning Peak), northwesterly across the Waterloo property to the Granite range. The widest exposures occur in the vicinity of the Waterloo mine, on either side of which is a width of about 3,000 feet is about one-third underlain by limestone and the remainder largely by intrusive rocks. The widest single exposure of limestone occurs partly on and partly to the north of the Waterloo No. 3 claim and has a maximum observed width of between 500 and 600 feet. Cther conspicuous widths of limestone occur within the northern two-thirds of the Waterloo claim.
"A little limestone was also observed crossing the Granite range near the northern contact of the southern area of batholithic intrusives.
"The limestone is medium to coarsely crystalline. According to the amount and character of impurities it varies from dark grey to nearly white. In general it is quite massive and structureless, but in places is well bedded, bands of nearly pure crystalline limestone a fraction of an inch to several inches wide alternating with, generally narrower, darker, impure bands. In places the limestone has been altered to massive crystalline calcite. One occurrence of bunches of fibrous wollastonite was noted ill a limestone outcrop near its contact with diorite intrusives about half a mile south of the Waterloo claim.

## VOLCANIC ROCKS

"A large proportion of the pre-batholithic rocks are probably of volcanic origin. They include three general types:

1) greenish, fine-grained to dense rocks which are either massive or exhibit varying degrees of schistosity; 2) bedded rocks which vary from fine to coarsely fragmental, are commonly greenish or greyish green and, in general, carry conspicuous, dark green crystals of amphibole; and,
2) rocks much resembling quartzites, but which have a composition more like volcanic rocks."

## LOCAL GEOLOGY

"In the immediate vicinity of the Waterloo workings these two groups (Anarchist and Nelson Intrusions) are seen as a complex intermixing of hornfels, recrystallized white limestone (parly silicious) and grey granite with younger cirosscutting dykes of basalt and Lamprophyre". (Assessment Report No. 2330).
"The Waterloo vein follows a strong shear striking approximately east-west, and the vein is especially strong where the shear is hosted by limestone and especially well mineralized with sphalerite (zinc sulphide) when hosted by limestone-calcite breccia." Galena (lead sulphide) is very localized; silver minerals (native silver, ruby silver) are also localized and "appear to favour highly silicious zones." No limestone is found beyond 1,210 feet inward from the No. 4 portal; "up to within 40 of this point the vein is continuously present to some degree although variable in width and mineral content, but beyond the limit of the limestone there are only traces of calcite and sulphides of the vein type."

## CONCLUSIONS AND RECOMMENDATIONS

The Waterloo Mine property includes three main adits, No. 2, No. 4 and No. 5. Due to the evidence that the vein is narrow, $\pm 3$ feet in width and due to the lack of evidence that the vein increases in width downward, the potential of developing mineable tonnages is dependent upon finding more high-grade silver ore. Local portions of the developed vein assayed 190 to perhaps 500 ounces Ag per ton. The silver mineral occurs in several forms which includes ruby silver and argentite. With these conclusions in mind, a program of intense sampling is recommended for Phase I. To the best of the author's knowledge, the No. 4 adit is open and accessible. The No. 5 adit is reported to have a slide at the portal and some caving 150 feet in.

## PHASE I

| Sampling 500 samples - 50 days @ $\$ 300 /$ day | $\$ 15,000.00$ |
| :--- | ---: |
| Assaying 500 samples - @ $\$ 20 /$ sample | $10,000.00$ |
| Campsite - food, lodging and <br> transportation | $10,000.00$ |
| Map preparation and engineering <br> Underground short-hole drilling <br> 300 feet @ $\$ 30 /$ foot <br> (all inclusive) | $10,000.00$ |
| Contingency | $9,000.00$ |
| TOTAL PHASE I | $\boxed{6,000.00}$ |

The locations of the 500 samples will be dependent upon the location of mineralization at the time of sampling in the No. 4 adit
"Hot Spots" will be drilled parallel to the vein.

Dependent upon the results of Phase I then Phase II is recommended.

PHASE II
Phase II involves a program combination of drifting, diamond drilling and stope preparation.

It is difficult to put a value on this work to either prove or disprove the mine as financial considerations as well as the nature of the Waterloo Mine property are important. However, for simplicity sake a value for Phase II is assumed at $\$ 200,000$.

TOTAL PHASE II
$\$ 200,000.00$
TOTAL PHASE I AND PHASE II

Respectfully submitted,

Vancouver, B.C.
James S. Falconer, P. Eng.

(REVISED): July 5, 1988

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[^0]:    Name and Address of Agent

[^1]:    "Relief ranges from about 5,000 feet above sea level, in the lower valleys to 7,035 feet at the summit of Lightning Peak, the highest point in the area. Save, however, for the principal valleys which are deep and cut steeply below the general surface, this surface has more the characteristics of a plateau region than of an alpine district such as features much of Columbia mountains.
    "Lightning Peak area is mostly timbered, but largely as a result of its altitude, not heavily so and in general is readily traversed on foot in almost any direction. Meadow-like expanses are common and at the higher elevations (about 6,000 feet), the hill slopes are bare or but scantifly forested. Rock exposures are here best shown, though almost continuous outcrops were also noted at lower elevations along some of the smaller tributary streams. For the greater part, however, the underlying rocks are obscured by accumulations of glacial drift, soil and vegation, all of which have proved a handicap to surface prospecting.

