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# APEX EXPLORATION & MINING CO. LTD., (N.P.L.)

306 MARTIN STREET --- PHONE 492-4004

PENTICTON, B.C.

October 12th, 1967.

#### PRESIDENT'S ANNUAL REPORT

Dear Shareholder:

Our Annual Meeting will be held at 8:00 P.M. on Monday, October 30th, 1967.

Incorporated in this written report to the shareholders will be your Engineer's Progress Report. His report is very favourable and certainly recommends that further exploration work is warranted.

You will also find the Financial Statement as prepared by the Company's auditors.

PROGRESS REPORT, Investigations
Apex Mineral Claim Holdings,
Osoyoos Mining Division, B. C.
(W.J. Weymark, P. Eng.)

" I am pleased to submit for your information, this progress report covering the results of the work completed in the exploration of the Apex Mountain and Anderson Mountain designated mineral claim groups, Osoyoos Mining Division, B. C. of your company during the October 1966-September 1967 period, together with our recommendations for future investigations.

1.0 General: Since commencement of field investigations of the Apex Mineral Claim holdings under our advisory capacity, the programme of works has consisted of field surveying and grid control establishment, access road construction and maintenance, geophysical surveys, geological mapping, diamond drilling (surface and underground), sampling and tests, data compilation and analyses. Details relating to the investigation of the Marble Claims potentialities are submitted in a separate report.

Reference is to Figures 1 and 2 for the general and specific, respectively, locations of the claims. An additional claim, Bounty Fraction, was staked during the period in order to cover fractional open ground area in the Apex Cirque. References are also made to the previous reports dated 1 November 1966, 1 May 1967 and progress reports of an interim nature for further background information.

During the period covered by this report, the involved expenditure on the works and related expenses amounted to the sums presented in the statement prepared by the Apex auditors.

2.0 Field Surveying and Grid Control: A survey control grid, on a 400-foot centre basis, see Figure 3, was established for reference purposes and a topographic control survey tieing the Geological Survey Bench Mark at Apex Lookout with elevation 7372 feet above sea level was completed by D. W. Davies & Associates, B.C.L.S. This control survey was extended to include the underground workings of the Apex Mine, see Figure 6. The control grid at the Anderson Mountain showings was previously established, see Figure 4.

Should investigations be extended to areas other than the presently shown mineral zones, then the field control surveys would have to be enlarged.

- 3.0 Access Roads and Maintenance: To date some ten miles of bull-dozer roads have been constructed and maintained on the Apex claim holdings. Some of these roads were maintained during the heavy snow periods of last fall and spring. Apart from continued maintenance, these roads are sufficient for carrying out any additional exploration of the presently known mineral zones.
- 4.0 Geophysical Surveys: During October-November 1966, a Geo-Mag geophysical survey was conducted by Geo-X Surveys Ltd., Vancouver, of the Nelson-Australian-Stormy-Bounty claims area in the Cirque. results of this survey are given in the submitted report dated 7 November 1966, and the Total Field measurements interpretation are given on Figure 10. As shown thereon, as well as Figure 3, several anomalous areas were located with significant ones shown near the Australian and Apex Mine mineral zone's. Subsurface drilling in the vicinity of these two anomalies has indicated relationships to intrusive bodies with sulphide mineralization appearing in the contact between the intrusive and the sediments. Reference is to the logs of the Aus series of drill holes and of Apex-15. Further investigation is warranted of these zones as well as additional surveys of the claims area not covered Undoubtedly, aerial type surveys would provide advantage, to date. initially.

Reference is to Figure 4 for the summary depicted results of the Geo-Chemical and Magnetometer surveys conducted by Wayland S. Reid, Consulting Geologist during May-July 1966 of the exposed mineralized zones on the Anderson Mountain claims. As noted thereon, several anomalous areas were indicated with those located near the Tim and North showings being the most prominent. Subsurface testing, albeit shallow, has confirmed the presence of copper-iron-gold-silver mineralization, reference is to the logs and assays given in Annex A, pages A-10 to A-20, inclusive. Additional geophysical surveys, possibly aerial, should be conducted in order to provide more detailed control of the shear-fault zone in which the Tim-North showings are located, see Figure 4.

5.0 <u>Geological Mapping</u>: During the fall of 1966, field geological mapping was carried out in the grid areas of the Apex and Anderson Mountain claims. Reference is to Figures 3 and 4 for details and to report dated 1 May 1967 for the results of the petrographic and lithological analyses. Because of the limitations imposed by over-burden cover and other difficulties, specific details of the underlying

formations have not been defined.

A review of the geological characteristics of the Apex-Anderson Mountain claims area was conducted with N. D. McKecknie, Geologist of the Department of Mines and Petroleum Resources of British Columbia following his several day examination of the showings and In this review certain considerations were developed relating to the possibility that similar geological and mineralogical features obtain in the Apex Mountain area, although perhaps deep-seated, as at the Nickel Plate Mine, where gold-silver-copper ore was found to occur in the metamorphosed limestone formation associated with basic intrusive stocks, dykes and sills. Reference is to Memoir 243, Geological Survey of Canada, entitled "Geology and Mineral Deposits of the Princeton Map-Area, British Columbia" by H.M.S. Rice, 1947. As a prior initial approach to the investigation of this geological possibility, the B. C. Department of Mines assisted in the Thesis Study of H. E. O. Neugebauer during 1964, which was undertaken to examine the lithology and structure of the rocks of Apex Mountain and adjacent area and to determine how they relate to the Triassic Nicola Group, exposed immediately to the west. For details of the findings, reference is made to Neugebauer's Thesis dated March 1965.

In the Apex Mountain area, the geological formations involve basic diorite instrusives centering between the 400-600 West grid lines with limestang-argillite sedimentary complexes on each side succeeded on the east by another basic intrusive. The McNulty, Australian, Apex, Nelson and small mineralized zones appear to be related to the contacts or marginal edges of the intrusives and the sediments. Prominent sulphide mineralization is pyrrhotite, magnetite and arsancpyrite with chalcopyrite and other secondary copper minerals present. Interrelated with these minerals are gold and silver associations. Structurally, continuity of the mineral zones explored to date is complicated dur to the expressed vertical and horizontal fault complexes. Extensive geological investigation is required in order to determine the extent and nature of these physical controls.

In the Anderson Mountain map area, Figure 4, the review with N. D. McKecknia involved the possible relationship between the wide shear-fadlt zone striking North-South displacing intersected copper-iron mineral bearing zones with an east-west orientation. This feature is expressed by the geo-chemical- magnetometer anomalies, see Figure 4. The geological formations underlying this area are mainly volcanic and intercalated bands of chert. Due to the overburden cover and intense fractured nature of the rocks in this zone with attendant effect on drill core recovery, only limited data has been procured to date. Consequently, considerable and difficult investigation will be required in order to determine the geological features, both lithologically and structurally, underlying this area. Undoubtedly an aerial geophysical survey might provide the most convenient means of assessing the controlling features.

6.0 Diamond Drilling: During the period covered by this report, 2882 feet of diamond drilling were completed, - 956 feet of underground drilling in the Apex Mine, 312 feet of surface drilling on the North and Tim Showings, Anderson Mountain, 1124 feet on the Australian showing, 72 feet at the Nelson Shaft and 419 feet on the Apex-Nelson vein structure extension. A total of 26 holes were drilled. Because of drilling difficulties only short holes could be completed on the Anderson Mountain

locations and the Apex Mine underground drilling programme could not be completed as scheduled due to difficulties in drilling through the fault zones. On completion of Apex - 1S, the programme of drilling was stopped.

# 7.0 Results of the Investigation:

The following results were obtained from the investigation carried out to date.

a. Anderson Mountain Claim Group:

Tim Showing: As shown on Figure 4, this copper-iron-goldsilver mineral containing zone is located at the southern section of the presently investigated shear-fault zone and involves a width of over 400 feet and a length of 200 feet along the strike of the shear-Old workings consist of trenches and an adit-drift which fault zone. is presently inaccessible due to water and poor ground conditions. Three X-Ray drill holes were drilled in the locations shown on the map and recorded in the logs, Annex A, pages A-18-20 inclusive. these holes were short and had to be stopped because of drilling difficulties. 'Assays of the cores ranged from 0.09 to 0.65% copper, 30 to 45% iron, trace to 0.30 ounces of silver and trace to 0.01 ounces of gold per ton. Further exploration of the possibilities of this showing is warranted and should include geophysical-geological surveys, diamond drilling of a large size or alternatively percussion sampling drilling, sampling and tests.

North Showing: This zone is located some 2000 feet to the North of the Tim Showing and is in the same shear-fault zone. The exposed width varies to 400 feet and the length about 400 feet. Old workings consist of a short adit, a longer adit-drift complex, several trenches and surface stripping. There are several heavily sulphide mineralized sections within the shear-fault zone with a north-south bearing, however, it is considered that these are displaced sections of the major east-west oriented mineral zones, reference is to Figure 4. Four X-Ray sized holes ranging in length from twenty to forty-three feet were drilled in the locations shown on Figure 4 and recorded in the logs included in Annex A - pages A-10 to A-13 inclusive. Assays of the cores ranged from 6.02 to 1.21% copper, 9 to 51% iron, trace to 1.05 ounces of silver, and trace to 0.02 ounces of gold per ton.

Additionally, four AXT sized holes were drilled in the same locations in an attempt to procure better results of penetration but without success due to the difficult drilling conditions and consequently the programme had to be abandoned. The results of the sampling of the cores are shown on Figure 4 and with the logs recorded in Annex A - pages A-14 to A-17 inclusive. The results of surface sampling are given on Figure 4.

Because of the favourable geological-mineralogical features of presently exposed zones, additional investigation is warranted and should include geophysical-geological surveys, drilling, diamond or percussion, sampling and tests.

b. Apex Mountain Claim Group: The following results were obtained from the programme investigating the Australian, McNulty, Apex Mine, Nelson Shaft and extension designated mineral zones. The programme did not include other possibilities indicated because of time and other limitations.

The Australian: Reference is made to Figure 3 for the location of this copper-iron-silver-gold mineral containing zone. Old workings consist of an adit-drift, several trenches and stripping. This zone occurs along the east contact between the basic diorite intrusive and the limestone-argillite sediments. Exposed widths vary from a few feet to over 100. Mineralization consists of pyrrhotite, arsenopyrite, chalcopyrite and other primary and secondary metallics. Three X Ray sized holes were drilled followed by three AXT sized holes to probe possibilities at depth. As shown on Figure 3 and recorded in the logs given in Annex A, pages A-l to A-6 inclusive, extension to depth of surface assays, ranging to 1.10% copper, was not obtained in the sections investigated. Recognition, however, has to be given to the overall geological structural controls obtaining in this area, viz the contact between the diorite intrusive and the sediments as well as the presence of copper-iron-silver-gold mineralization, relative to the background experience in the Hedley area. Further investigation is warranted.

McNulty Showing: This showing and workings are located to the west of the Australian, see Figure 3, and consists of a mineralized sulphide zone on the west side of the diorite intrusive. Previous workings consist of an adit, drift and open stope. Samplings of vein remnants has yielded assays of 0.4 ounces of gold and 1.33% copper. No drilling has been undertaken by Apex to investigate the possibilities of this mineralized zone.

Apex Mine: Reference is to previous reports relating to this mine working. During the Apex programme of investigation 956 feet of underground AXT drillings were completed as well as sampling of mineralized zones. Reference is to Figures 3, 6 and the logs in Report dated 1 May 1967. As noted thereon, no commercial ore sections were intersected in the area explored.

Nelson Shaft Vein and Extension: This shaft and related underground workings were sunk by previous operators on the Apex vein structure which in this area strikes North-South and dips 45 to 50 degrees to the east and varies in width from a foot to six feet in faulted sections. This vein structure occurs in a limestone-argillite complex and is mineralized with pyrrhotite, arsenopyrite, chalcopyrite and other secondary metallics. Surface sampling has yielded assays ranging from 0.02 to 2.30 ounces of gold, 0.4 to 1.50 ounces of silver and 0.02 to 2.42% copper. Two X Ray holes were started, Nelson 1 and 2, but owing to difficulties had to be abandoned. Underground drilling was not possible owing to the dangerous conditions of the shaft timhering. surface drill hole, Apex-1S located about 400 feet to the south, intersected the extension of the vein structure and contained visible chalco-Assays yielded 0.1 ounces of gold, 0.1 ounces of silver and pyrite. 0.30% copper. In the footage depth 390-419, a basic intrusive (basaltic or fine grained diorite) was intersected to which the Geo-Mag surface anomaly might bear relationship. Geologically and mineralogically, the Nelson Shaft-Apex Vein extension structure appears to bear similarity with the favourable ore bearing formations in the Hedley area. On the basis of the preliminary results obtained from the investigation completed to date on this zone, additional exploration is justifiable in order to assess commercial potentialities. Reference is to Figure 3, 7, 10 and the logs recorded in Annex A - pages A-7 to A-9 inclusive.

In order to assess in detail, in particular, the commercial copper-iron-gold-silver mineral potentialities of the Anderson Tim and North showings and the Apex Mountain McNulty and Nelson-Apex vein structures and in general, poseibilities which may be latent in other areas of the Apex mineral claim holdings, it is considered that further exploration and investigation is justifiable. The following programme of works is recommended.

# a. Anderson Mountain Claims:

- i. An aerial magnetometer survey of the shear-fault zone.
- ii. Detailed geological mapping.
- iii. Percussion type drilling-sampling.
  - iv. Related ground surveys, sampling and tests.

# h. Apex Mountain Claims:

- i. Aerial geophysical surveys of the cirque and adjacent areas.
- ii. Detailed geological mapping.
- iii. Diamond drilling, particularly of the Nelson-McNulty mineralized zone structures.

### c. General:

In addition to the whove listed technical surveys and tests, expenditures will be required to such support activities as road maintenance, supervision and administration and related services. "

Respectfully submitted,

NORMAN E. GIDDY

President

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