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TEL: BUS. 987-5322
RES: 987-9520

WILLIAM M. SHARP, P.ENG.
CONSULTING GEOLOGICAL ENGINEER

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171 WEST ESPLANADE
NORTH VANCOUVER, B.C.

INTERIM GEOLOGICAL REPORT
ON THE
QUARTZ SILVER PROSPECT
LOCATED NEAR THE
NELSON RIVER, TERRACE AREA, B. C.
SKEENA MINING DIVISION

FOR
ATLANTIS MINES LTD. (N.P.L.)
Vancouver, B. C.

BY
W. M. Sharp, P. Eng.
Consulting Geological Engineer
North Vancouver, B. C.

September, 1969

WILLIAM M. SHARP, P.ENG.
CONSULTING GEOLOGICAL ENGINEER

171 WEST ESPLANADE
NORTH VANCOUVER, B.C.

September 23, 1969.

President & Directors,
Atlantis Mines Ltd. (N.P.L.),
210 - 535 Howe Street,
Vancouver 1, B. C.

Attention - Mr. F. J. Rexstrow, President

Gentlemen:


With this the undersigned transmits his INTERIM GEOLOGICAL REPORT, QUARTZ SILVER PROSPECT, NELSON RIVER, TERRACE, B. C. - resulting from field work accomplished during the period September 8 - 11, 1969 and supplementary data compiled and provided by Mr. R. H. Bates.

The writer also thanks Messrs. Bates and J. Apolczer for providing local transportation, guidance, and field assistance.

The writer requests that persons making use of this report for purposes of public information adhere to the formalities concerning extracts and general quotations.

Respectfully submitted,

WMS/LA


W. M. Sharp, P. Eng.

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DWG. 1 - (in pocket) PRELIMINARY GEOLOGY,
SOIL SAMPLING, AND
MINERALIZATION

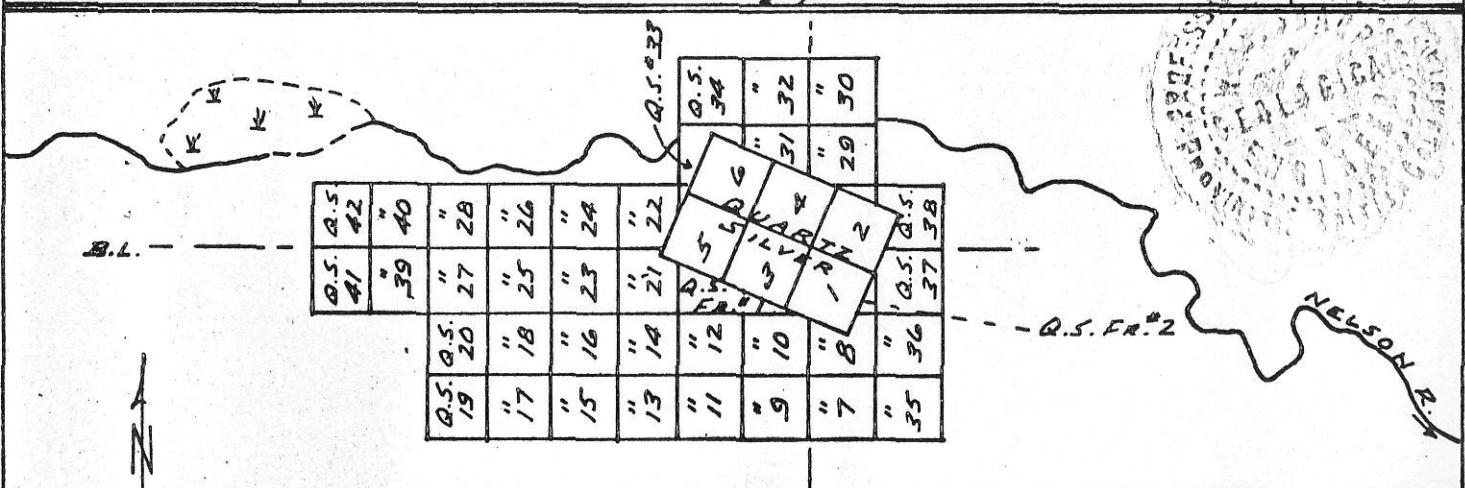
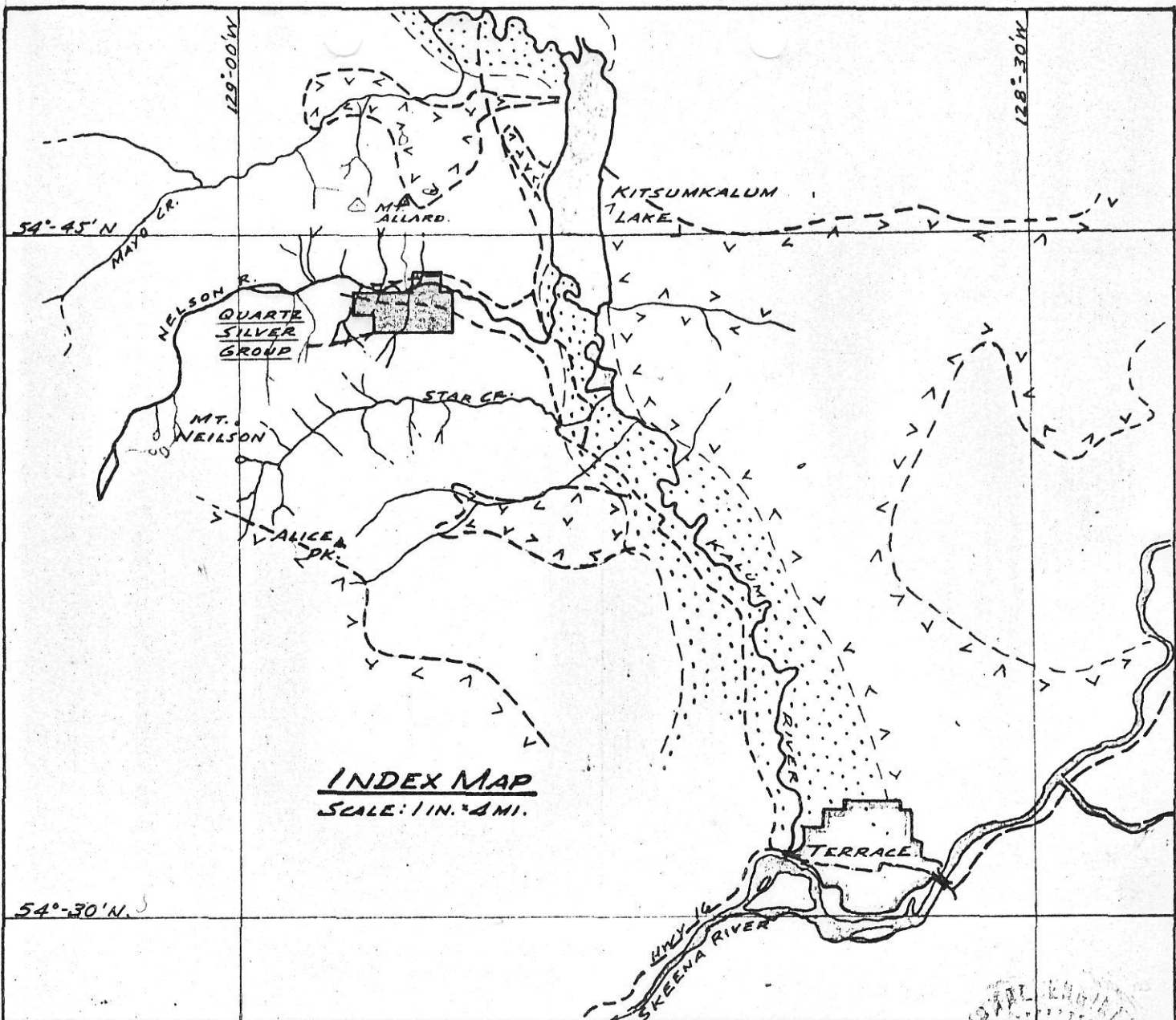


FIG. 1
CLAIMS & GENERAL GEOLOGY
QUARTZ SILVER PROSPECT
NELSON R., SKEENA MIN. DIV., B. L.
SCALES - AS NOTED I. DWN. SEPT., 1969.
GEOLOGICAL LEGEND

- COAST INTRUSIVES
- BOWSER SEDS. & OLDER VOLC'S.

W.M. SHARP, P. ENG.

SUMMARY & RECOMMENDATIONS:

The Quartz Silver property, situated to the south of Nelson River and 18 air-miles N.W. of Terrace, B.C., consists of one block of 44 located claims.

In view of the fact that the local silver-lead-zinc copper mineralization was first exposed in 1968, and since only a relatively minor extent of preliminary exploration has been carried out to date, the property can be classified as an essentially raw prospect. To date some 1,800 lineal feet of bulldozer trenching, of which less than a quarter effectively exposes bedrock, has exposed six variably mineralized fracture structures at only one point on their separate trends.

Sulphide mineralization, in minor amounts, occurs within quartz veins and fracture stockworks in fine-grained, altered felsitic intrusives; locally it occurs as dispersed grains and blebs in the actual matrix of the rock. The major exposure resulting from the current extent of trenching is the East quartz-fracture zone - a 20-foot wide zone of fractured, altered, silicified felsite with lensy to dispersed lead-zinc sulphide mineralization. Sampling here returned 10 feet of Au, trace; Ag, 0.6 oz/ton, and a random chip across the better mineralized 3-foot interior section of the structure assayed Au, 0.02 oz/ton; Ag, 2.8 oz/ton; Cu, 0.37%; Pb, 6.27%; Zn, 1.06%. Recent geochemical soil-sampling indicates that the structure and mineralization extend some 600 feet on strike to the southeast.

Recent trenching at 400 feet to the west of, and up-slope of the East trench showings has uncovered large, angular float fragments of quartz-argillite, and quartz-felsite breccia with substantial galena mineralization. A grab sample of this material assayed Au, 0.005 oz/ton; Ag, 1.58 oz/ton; Cu, 0.02%; Pb, 5.26%; Zn - not assayed.

The relatively few bedrock exposures indicate that the property is in part underlain by a zone of N.E.-striking felsite dykes or prongs - presumably emanating from either the Mt. Neilson or Mt. Allard bodies of Coast Intrusives.

The writer's recommendations for further exploration (Stage I - continued) comprise:

1. Reconnaissance-to-detailed soil sampling (Cu, Pb, Zn) of the general claims area.
2. Trial magnetometer surveys for possible delineation of intrusive host rocks.

- 3. Bulldozer trenching of probable extensions of
 - (a) No. 1 - West zone,
 - (b) East quartz-fracture zone, and
 - (c) source of the mineralized breccia float found near sta. 31-L.
- 4. General provision for preliminary diamond drilling.

ESTIMATED COSTS:

| | | |
|--|--------------|-----------------|
| 1. (a) Grid preparation | | |
| 25 contour-miles @ \$100 | \$2,500 | |
| (b) Soil sampling, labour & laboratory | <u>3,500</u> | \$ 6,000 |
| 2. Estimate 10 miles @ 50' stations | | 500 |
| 3. Estimate 10 days, D7 ripper-'dozer | | 2,500 |
| 4. Provision, 2,000 l.f. @ \$10.00 | | 20,000 |
| Contingencies & overhead expense | | |
| @ 15%, approximately. | | <u>4,500</u> |
| | Total | <u>\$33,500</u> |

Respectfully submitted,

W. M. Sharp
W. M. Sharp, P. Eng.

INTRODUCTION:

The writer's most recent examination was accomplished, in conjunction with work on another property, via consecutive $\frac{1}{2}$, 1, and $\frac{1}{2}$ -day visits on September 8, 9, and 11, 1969. Geological field work comprised reconnaissance inspections, detailed geological mapping and sampling based on a Brunton traverse control provided by Mr. Bates, and detailed soil-sampling along the projected course of the easterly quartz-fracture zone.

The current report embodies the recent examination data, some results accruing from the writer's preliminary inspection of August 5, 1968, some data resulting from independent field work performed by Mr. Bates prior to the writer's recent visit, and property details originating from Mr. Bates.

The accompanying Figures 1 and 2, and Dwg. 1 supplement sections of the text dealing with claims, location and access, regional geology, and detailed geology, rock, and soil sampling.

CLAIMS:

The property consists of 44 full, and fractional claims contained within a single block measuring approximately 1 mi. by 2-2/3 mi. Details are as follows:

| <u>Claims</u> | <u>Record Nos.</u> | <u>Ann. Date</u> | <u>Expiry Date</u> |
|---------------------------|----------------------------|------------------|--------------------|
| Quartz Silver 1-4, incl. | 32798-801 incl. | June 4, 1969 | June 4, 1970 |
| Quartz Silver 5&6 | 32945-6 | June 4, 1969 | June 4, 1970 |
| Quartz Silver 1 Fr. | 32473 | Nov. 6, 1969 | Nov. 6, 1969 |
| Quartz Silver 2 Fr. | 33517 | Nov. 12, 1969 | Nov. 12, 1969 |
| Quartz Silver 7-29, incl. | 33474-96, incl. | Nov. 6, 1969 | Nov. 6, 1969 |
| Quartz Silver 30 | 33479 (97 trans- posed) | Nov. 6, 1969 | Nov. 6, 1969 |
| Quartz Silver 31-42 incl. | 33498-509, incl. | Nov. 6, 1969 | Nov. 6, 1969 |

The foregoing were located by Messrs. J. Apolczer and R. H. Bates, both of Terrace, B. Through an assignment of a preliminary option Atlantis Mines Ltd. (N.P.L.) have acquired possession of the claim group - subject to making specified cash and stock payments and making stipulated expenditures on exploratory work.

LOCATION, ACCESS & GENERAL FEATURES:

The claim group centers about $\frac{1}{2}$ mile south of Nelson River at some 18 air-miles N.W. of Terrace, B.C. The current

main showings, occurring in recently excavated rock cuts on the local through-going branch logging road, lie near the 1,000-foot elevation. General trenching, with intermittent bedrock exposures, has been done to the 1,200-foot level only; the claims extend to about the 3,000 foot level.

The lower showings are reached via the Kalum Lake main logging road, and local branch road No. 33; these extend some 19 and 5 miles, consecutively, northward and westward of Provincial Highway 16 - this junction being about four miles west of Terrace.

Much of the claims area was logged off about ten years ago; consequently coarse logging slash, heavy brush, small trees, and scrub impede foot-access and ground-based exploration. Ground slopes are gentle to the north of the access road, and moderately steep southward of it.

HISTORY:

The local lead-zinc-copper mineralization, within altered intrusives and vein quartz, was first noted by J. Apolczer during construction of the branch logging road. With a rather recently acquired interest in prospecting, he staked the six original claims in June, 1968; subsequently, he accomplished a modest program of stripping and blast-trenching in the area of the aforementioned mineral occurrences. The resulting showings were brought to Mr. Bates' attention - at which time he acquired a 'prospecting interest' in the group. Following this he accomplished a modest program of 'heavy-metal' soil sampling and, during the fall of 1968, participated in extending the claim block to its present size.

Exploration thus far accomplished during 1969 consists of about 1,800 lineal feet of bulldozer trenching - with some 300 feet done across the original section of exposures, and the balance on an up-slope switchback pattern above these. The 1969 work has produced encouraging results by way of a wider delineation of the main road prospect zone, and the exposure of at least three additional significantly altered, and partly-mineralized fracture zones. To date all zones have been exposed at only one cross-section, or horizon, and none have been additionally investigated by diamond drilling or possibly-applicable geophysical methods.

GEOLOGY:

A - REGIONAL:

The Nelson River area is underlain by the regional Bowser Group rocks of Upper Jurassic and Lower Cretaceous (?)



PROPOSED 'DOZER STRIP-TRENCH

NO. 1 - WEST TRENCH

23



- PATCHES & BLEBS OF Zn-Pb SULPHIDES IN MATRIX OF ROCK

- BEDDED FELSIC TUFF.

- MASSIVE "

- PALE GREEN-GRAY TALCOSE ALTERATION.

- MSY. QZ. LOC. UNDER FAULT.

- OCC. GRAINS PBS IN GASH-VETS.

- QZ. STRINGER LOBE - STOCKWORK

- OCC. BLEBS PBS IN SCANT QZ. STW'X.






- WHITE TO GRAY - BLEACHED

- MSY. FRESH - GRAY FELSITE.

NO. 2 - EAST TRENCH

FIG. 2

LEGEND

-  FELSITE INTRUSIVE
-  FELSITIC (ARKOSIC) TUFF
-  ARGILLITE, WITH BEDDING ATTITUDE
-  FAULT; MINOR FRACTURE
-  QUARTZ VEIN 1
PB-ZN-Cu-SULPHIDES.

**MAIN ROAD SHOWINGS
QUARTZ-SILVER GROUP
ATLANTIS MINES LTD (NPL)
SCALE: 1"=40' SEPT., 1969**

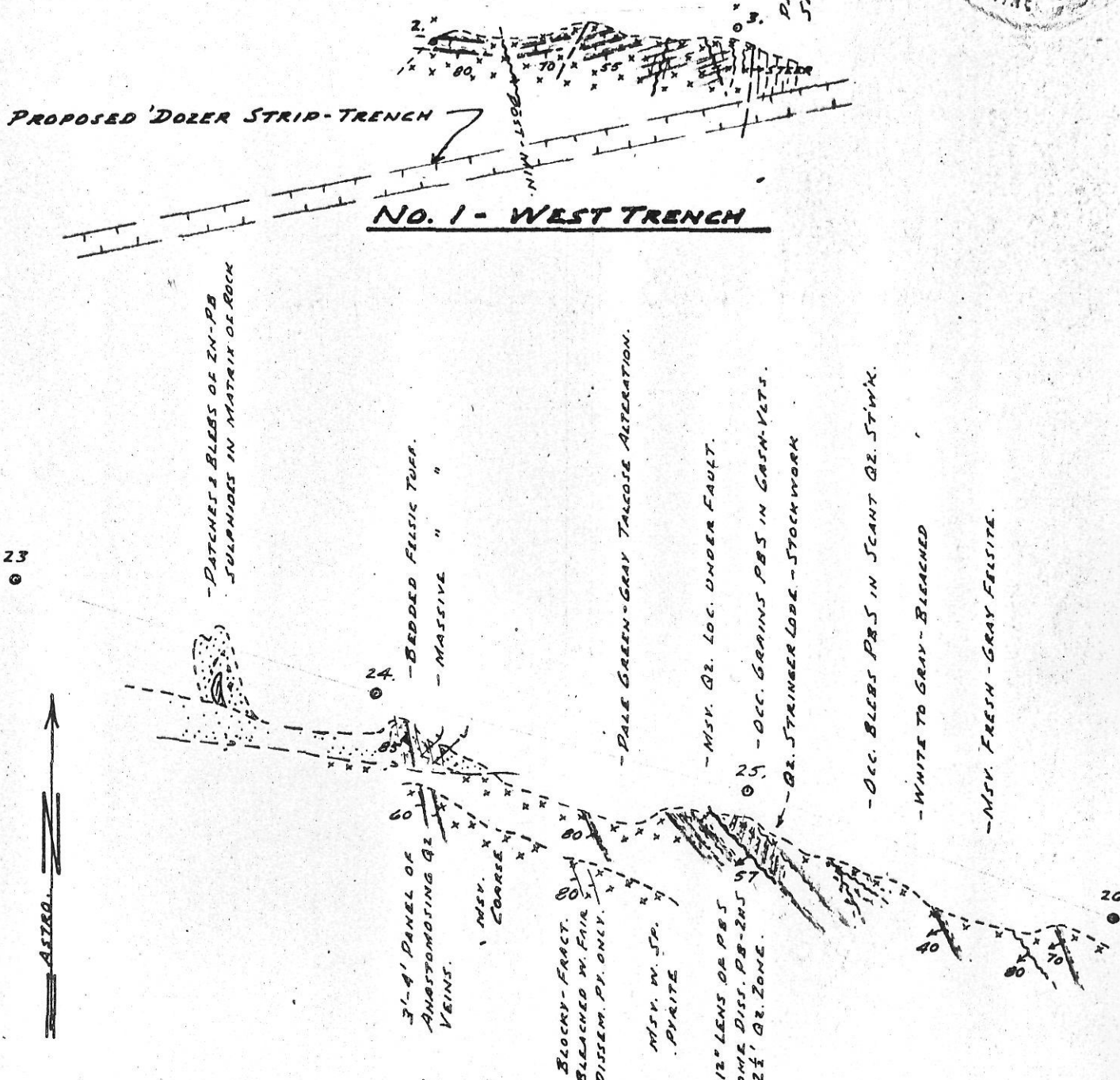
W.M. SHARP - P. ENG.

BLEACHED SILIC. W. SPARKS
DISSEM. PY & SPARKS TETR. (?)
FREQ. E-W QZ. VETS & STW'X.

3-4 VEINS W. 1" COMB
QZ. & MINOR TETRAN - PY.

5-6 SMALL QZ. VEINS
W. OXIDIZED SULPHIDES.

PALE GREEN-GRAY (ARKOSIC)
SHALY ARGILLITE.



age. Within the claims area the principal lithologic units comprise black-shaly to greenish-gray arkose, siltstone, and felsic tuff. The general section appears to have been rather strongly folded, with the general bedding plane striking N.E. and dipping S.W.

Major bodies of Coast Intrusive granitic rocks lie within 4 and 6 miles to the east and southwest, respectively, of the claim group. G.S.C. map 1136A indicates a $2\frac{1}{2}$ x 5 mile stock lying at less than 2 miles north of the Quartz Silver lower showings; the writer is presently disposed to relate the numerous felsitic dykes within the claim group to this, as much as to Mt. Neilson body to the southwest.

A stereo examination of the air photo-pair relevant to the claim group, and covering the area between Mayo Creek and Mt. Neilson, revealed little evidence of fracturing or other geological features within the section south of the Nelson River. They do, however, clearly indicate a broad zone of E.N.E.-trending fractures within the southerly slopes and summit area of Mt. Allard. This trend corresponds fairly closely with geological-mineral trends apparent within a group of Ag-Pb-Zn and Cu-Mo prospects situated north of Kalum Lake. Consequently, some reconnaissance exploration of at least the lower southerly slopes of Mt. Allard is indicated.

B - PROPERTY:

The local Ag-Pb-Zn-Cu sulphide mineralization occurs, somewhat sparsely, within quartz vein-fracture stockworks within relatively fine-grained felsitic dykes; it also occurs as disseminated blebs and grains within the general matrix of these dykes - particularly where these exhibit a characteristic greenish-gray talcose alteration. Pyrite, in generally minor to locally appreciable amounts, occurs in both quartz-vein stockworks and the altered, more-or-less fractured matrix of the dykes; it also occurs - but apparently unaccompanied by Pb-Zn-Cu sulphides - within sheared, brecciated, and silicified zones traversing sections of black shaly argillite.

No. 1 West trench exposes bleached-silicified felsite containing minor disseminated and veining pyrite and tetrahedrite. The fairly numerous mineralized fractures and quartz veinlets generally strike E.N.E. and dip steeply southward. Bulldozer trenching of the up-hill extension of the felsite dyke is proposed; a N-S trend is suggested by its easterly contact with argillite.

No. 2-East trench exposes sections of felsic tuff and intrusive felsite - both rock types exhibiting a marked soft talcose alteration. Minor to appreciable amounts of disseminated pyrite occur mainly in altered felsite - locally accompanied by

blebs and grains of sphalerite and galena. The more significant Pb-Zn sulphide mineralization occurs within a general 20 foot width of sheared, brecciated, to open-fractured bleached-siliceous felsite; massive quartz is closely restricted to the footwall of the main shear. Locally a 6 - 12 inch lens of quartz and galena occurs closely over the shear; however, a significant proportion of the mineralization occurs within small gash fractures acutely intersecting the shear and within open fracture stockworks more distant from it.

A random chip (grab) sample of pyritized fractured felsite occurring at the S.W. margin of the above zone assayed Au, trace; Ag, 0.6 oz/ton. A similar grab sample of mineralized quartz and veined felsite adjacent to the central shear assayed Au, 0.02 oz/ton; Ag, 2.8 oz/ton; Cu, 0.37%; Pb, 6.27%; Zn, 1.06%.

The 31-B 'dozer cut exposes a section of bleached-silicified fractured felsite and adjoining argillites; the sparsely disseminated pyrite was not sampled.

The cut at 31 H exposes a minor section of siliceous brecciated felsite containing only sparsely disseminated pyrite; the exposure was not sampled.

The cut-bank between 31 I - J exposes a N.E.-striking panel of massive blocky to shaly black argillites. This is cut by a 10 foot fracture zone striking N.N.W., and which is generally veined, silicified and variably pyritized. Two samples taken across the full width and the centrally brecciated part of the zone assayed:

10.0 ft. □ Au, 0.005; Ag, trace
1.0 ft. □ Au, trace; Ag, 0.02 oz/ton

On the basis of the negligible Au-Ag content of the above pair of samples the writer tentatively infers that the local argillite generally comprise unfavourable host rocks. However, trenching some 200 feet west of this exposed large angular float fragments of quartz-felsite, and quartz-argillite breccia - well mineralized with galena. A grab sample of this assayed:

Au, 0.005 oz/ton; Ag, 1.58 oz/ton;
Cu, 0.02%; Pb, 5.26%

The angular character of the float suggests that it derives from an as yet-unexposed bedrock vein or lode in this general locality. This discovery, within a heavily overburdened part of the steep hill slope, fully warrants additional bulldozer exploration.

GEOCHEMICAL SOIL SAMPLING:

To date a rather minor amount of soil sampling - relative to the indicated spread of mineralization - has been accomplished. This consists of 300 and 500 foot E-W lines at about 400 and 1,000 feet, respectively, south of the easterly road showings, and the current 800 foot line bearing southeasterly through sta. 31D. The total coverage is as yet insufficient for the intended purpose of locating and delineating the various possible concealed zones of bed-rock mineralization.

From the office compilation of the current field mapping and plan-projection of the mineralized East quartz-fracture zone, it appears that the S.E. soil sample line is, for the greater part of its length, situated a few feet too far up-slope to effectively test corresponding extensions of the structure. Nevertheless the geochemical data from this line, taken in conjunction with point-results near stas. 27, 28, and 31A tentatively indicate a S.E. extension of the East zone mineralization. On the basis of these local indications it appears that more comprehensive soil-sampling of the area should return positive indications of bedrock mineralization.

Respectfully submitted,


W. M. Sharp
W. M. Sharp, P. Eng.



C E R T I F I C A T E

I, William M. Sharp, with business and residential addresses in North Vancouver, British Columbia, DO
HEREBY CERTIFY THAT:

1. I am a graduate of the University of British Columbia with B.A.Sc. (1945) and M.A.Sc. (1950) degrees in Geological Engineering.
2. I am a registered Professional Engineer in the Province of British Columbia.
3. I have practiced my profession since 1946.
4. I personally examined the Quartz Silver property and available reference data prior to preparing this report of date September 23, 1969.
5. I have no interest, direct or indirect, in the properties or securities of Atlantis Mines Ltd. (N.P.L.), nor do I expect to acquire any such interest.
6. I inspected such claim locations as I encountered during my September 8 - 11, 1969 examination and believe these have been made as stipulated by the B. C. Mineral Act.



W. M. Sharp, P. Eng.

September 23, 1969
Vancouver, Canada



GEOCHEMICAL LAB REPORT

No. 20-83

Extraction..... Hot Aqua Regia

From..... Atlantis Mines, Ltd. (NPL)

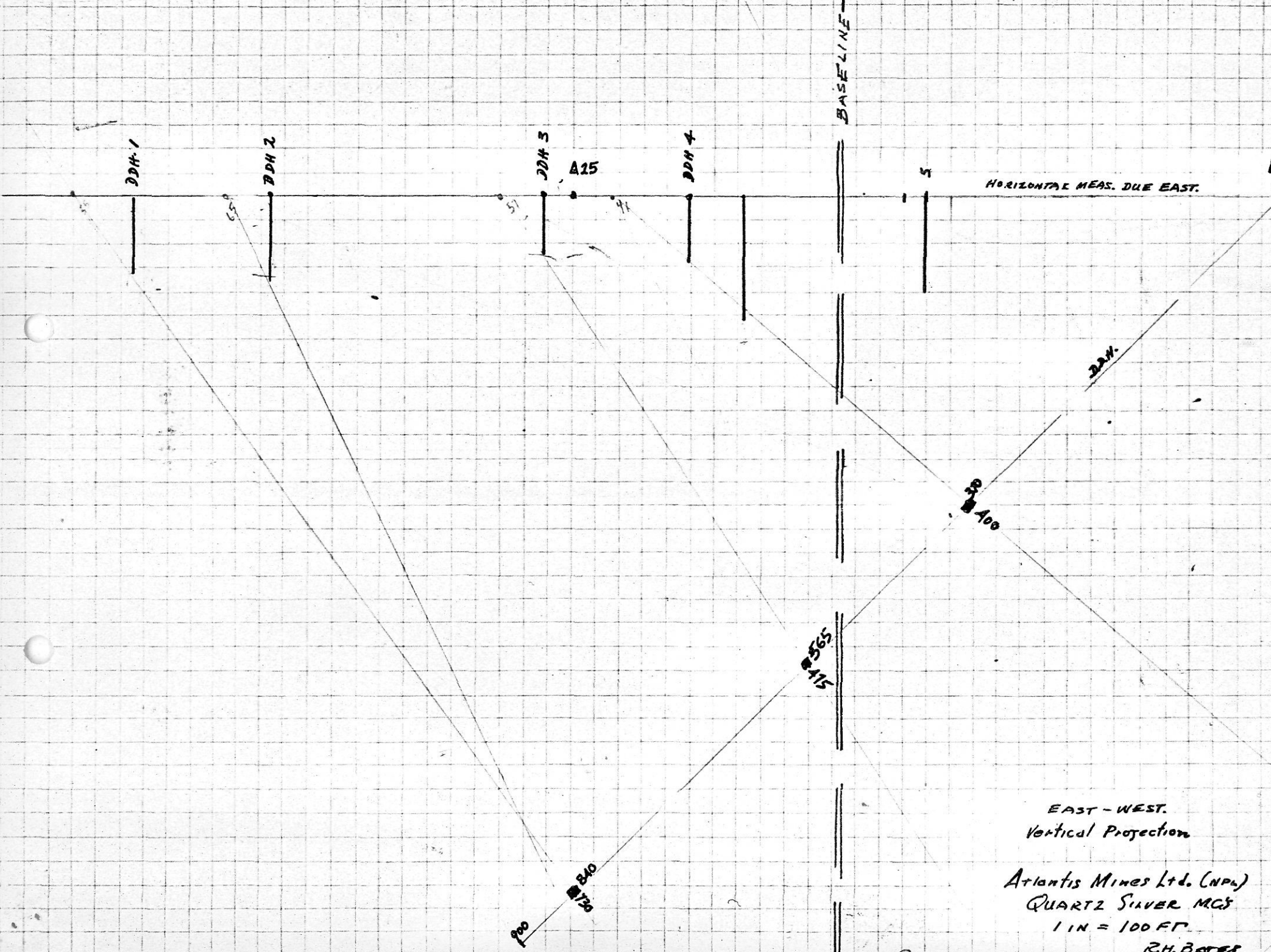
Method..... Atomic Absorption

Date..... April 16, 1970

Fraction Used..... -80 mesh (Rock Prep)

Analyst..... J.Y.

| SAMPLE NO. | | | | Cu ppm | Pb ppm | Zn ppm | Ag ppm | | REMARKS |
|------------|------|-------|----|-----------|-----------|-----------|-----------|--|-------------------|
| QSI | .5 | 3 | FT | 890 | 51 | 452 | 1.4 | | ND - NOT DETECTED |
| | 13.8 | 25.6 | | 142 | 46 | 300 | 1.2 | | |
| | 25.6 | 34.2 | | 158 | 28 | 140 | 1.2 | | |
| | 34.2 | 45.0 | | 193 | 31 | 108 | 0.8 | | |
| | 45.0 | 50.0 | | 202 | 35 | 100 | 1.2 | | |
| | 50.0 | 55.0 | | 148 | 19 | 80 | 0.6 | | |
| | 55.0 | 60.0 | | 500 | 82 | 225 | 2.1 | | |
| | 60.0 | 70.0 | | 415 | 42 | 202 | 1.2 | | |
| QS2 | 0 | 10.0 | | 159 | 50 | 122 | 1.0 | | |
| | 10.0 | 20.0 | | 170 | 118 | 250 | 1.0 | | |
| | 20.0 | 25.7 | | 1800 | 17500 | 30600 | 20.0 | | |
| | 25.7 | 30.0 | | 430 | 710 | 2600 | 2.4 | | |
| | 30.0 | 35.0 | | 226 | 202 | 580 | 1.1 | | |
| | 35.0 | 40.0 | | 228 | 211 | 600 | 1.0 | | |
| | 40.0 | 45.0 | | 260 | 93 | 478 | 0.8 | | |
| | 45.0 | 50.0 | | 228 | 102 | 340 | 1.2 | | |
| | 50.0 | 55.0 | | 210 | 48 | 160 | 1.6 | | |
| | 55.0 | 61.0 | | 218 | 35 | 138 | 0.8 | | |
| | 61.0 | 70.4 | | 168 | 103 | 170 | 0.8 | | |
| | 70.0 | 75.0 | | 108 | 56 | 202 | 1.0 | | |
| | 75.0 | 80.0 | | 139 | 33 | 108 | 0.8 | | |
| | 80.0 | 85.0 | | 150 | 380 | 340 | 1.3 | | |
| | 85.0 | 90.0 | | 155 | 198 | 210 | 1.1 | | |
| | 90.0 | 95.0 | | 170 | 118 | 295 | 1.3 | | |
| | 95.0 | 100.0 | | 103 | 101 | 240 | 1.1 | | |



EAST - WEST.
Vertical Projection

Atlantis Mines Ltd. (NPL)
QUARTZ SILVER MG'S
1 IN = 100 FT.

Proposed DDH's
R.H. BATES