Geology Rock and Soil Geochemical Survey
Wolf 1-18 Mineral Claims
Watson Lake Mining District
Mt. Vermilion Area, Yukon Territory
Lat. 61°20'N; Long. 131°29'W
NTS 105 G/6

Work Performed: July 25 - August 2, 1995

Prepared for

Atna Resources Ltd.

by

Paul Kallock
Consulting Geologist

December 22, 1995

SUMMARY

Previous exploration at the Wolf Claims has defined two types of stratiform sulfide mineralization: massive barite with sphalerite and galena, and massive pyrite and pyrrhotite with lesser chalcopyrite. Both types of mineralization occur in a Devonian-Mississippian sequence of intermediate to felsic flows, tuffs and breccias with interlayered mudstone.

During geological mapping and rock sampling in July and August 1995, northerly extensions to both types of mineralization were discovered. A barite horizon, appearing to be at least 2 m wide by 25 m long, and containing lenses of galena, was found 150 m northwest of previously discovered showings. Cobbles of weathered massive galena were also noted in the immediate area.

Higher in the stratigraphic horizon, float cobbles of massive pyrite and pyrrhotite with traces of bornite were found 500 m northwest of previously mapped sulfide horizons.

Encouraging results from the 1995 program warrant a program of geological mapping, hand trenching and geophysics to outline drill targets. Diamond drilling would be expected to follow, aimed at base and precious metal targets and a conductor delineated in the central claim area by the 1992 geophysical survey.

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PROPERTY, LOCATION, ACCESS

The Wolf property consists of eighteen mineral claims registered in the Watson Lake Mining District. The claims are optioned to Atna Resources Ltd. from YGC Resources Ltd.

Claim Name	Grant Numbers	Expiry Date
Wolf 1-18	YB16894-YB16911	30 March 2001

Location and claim maps are shown as Figures 1 and 2. The Wolf property lies 10 km southwest of the Hoole River and 90 km southeast of the village of Ross River, Yukon. The claims lie at Latitude 62°20' North, Longitude 131°20' West. Elevation ranges from 1,430 - 1,965 metres. Mt. Vermilion, in the north-central part of the claims is the highest point on the property.

Access to the claims is by helicopter from Ross River. In 1978 a dozer road was constructed to the property from the Robert Campbell Highway, 55 km to the northeast. Condition of the road is not known.

HISTORY

The property was first staked as the FH claims by Newmont in 1966 and later as the Joe claims in 1976. In 1977 and 1978 soil sampling, mapping and trenching were followed by diamond drilling of three holes totalling 525.6 m, one of which intersected 1.4 m of 5.6% Zn and 0.8 oz/ton silver. Amax conducted soil and rock geochemistry in the area in 1982. In 1990 the property was staked by Archer, Cathro and Associates Ltd. for YGC Resources Ltd. and a soil geochemical survey was carried out. In 1991 Cominco optioned the ground and subsequently carried out geological mapping, soil geochemical and geophysical surveys. The property was optioned to Atna Resources Ltd. from YGC Resources Ltd. in 1995. Rock geochemical sampling and reconnaissance geological mapping were carried out from July 25 - August 2, 1995, and are the subject of this report.

REGIONAL GEOLOGY

The Wolf Claims are located in the Pelly Mountains, southwest of the Tintina Fault, in an area underlain predominantly by early to middle Paleozoic clastic and volcanic rocks deposited near the western edge of the Selwyn Basin and Kechika Trough. The geologic setting is described by Gordey (1981) and MacRobbie (1992).

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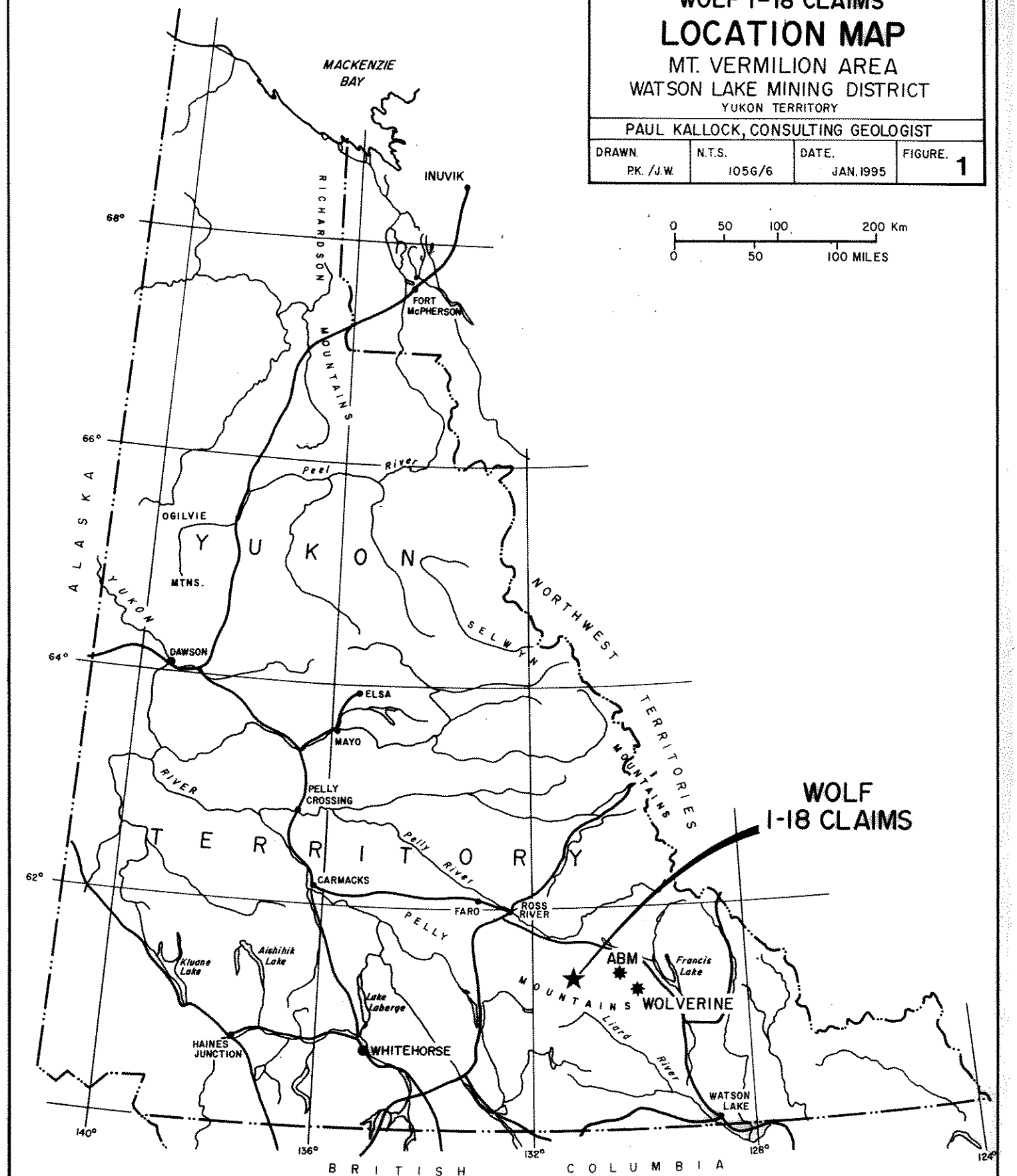
WOLF 1-18 CLAIMS

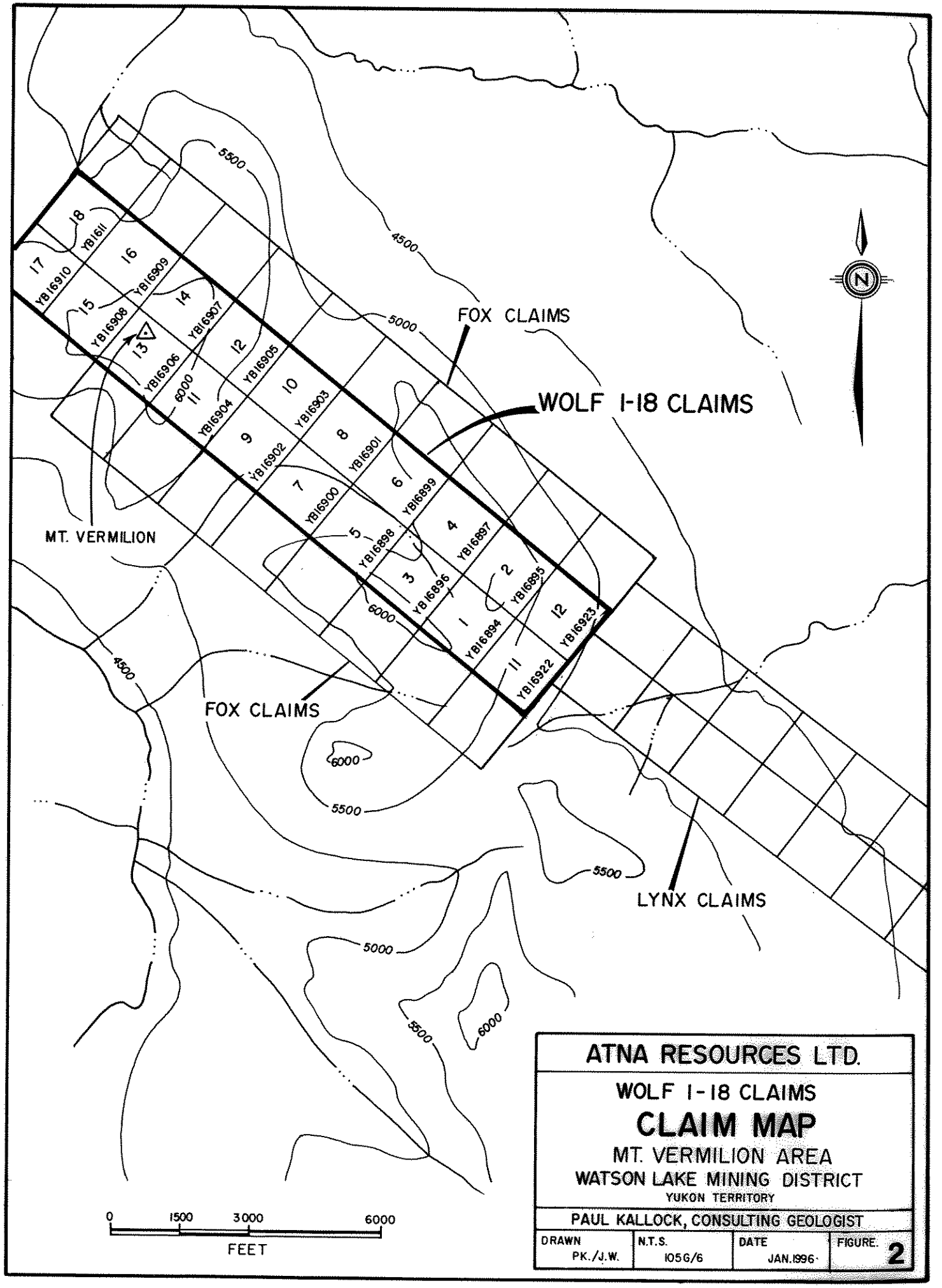
LOCATION MAP

MT. VERMILION AREA
WATSON LAKE MINING DISTRICT
YUKON TERRITORY

PAUL KALLOCK, CONSULTING GEOLOGIST

DRAWN.	N.T.S.	DATE.	FIGURE.
P.K. /J.W.	105G/6	JAN. 1995	1





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WOLF 1-18 CLAIMS

CLAIM MAP

MT. VERMILION AREA

WATSON LAKE MINING DISTRICT

YUKON TERRITORY

PAUL KALLOCK, CONSULTING GEOLOGIST

DRAWN	N.T.S.	DATE	FIGURE.
PK./J.W.	105G/6	JAN.1996	2

The area centres on the Silurian to Devonian Pelly-Cassiar Platform, a peninsular area of shallow water carbonate sedimentation (outboard of the main MacKenzie Platform) which developed unconformably above a thick accumulation of Cambrian to Ordovician volcanic and clastic rocks. Carbonates of this platform change laterally to basinal shale facies to both the northeast and southwest. Late Devonian to Mississippian rifting and subsidence of the carbonate shelf and basis resulted in the deposition of shale, siliceous greywacke, chert pebble conglomerate and locally developed centres of intermediate to felsic volcaniclastic volcanism. Overlying Carboniferous to Lower Triassic clastic sedimenary rocks reflect a return to stable marine shelf conditions.

PROPERTY GEOLOGY

Detailed geological mapping at the Wolf Claims has been carried out in the area around Mt. Vermilion by MacRobbie (1992). Stratigraphic sections were measured and the Devonian-Mississippian succession was subdivided into 12 subunits. Included in this report is a geology map (Figure 3) based upon MacRobbie's mapping with additions from 1995 mapping. Most of the outcrop detail around Mt. Vermilion is not shown and the stratigraphic column is abbreviated. Also shown on the geology map is the anomalous conductor axis generated by the 1992 electomagnetic geophysical survey by Holroyd (1993), and the location of three diamond drill holes cored in 1978 by Newmont.

Stratigraphy

The oldest rocks exposed on the Wolf Claims are Silurian to Devonian grey to buff weathering thin to thick-bedded silty and sandy dolomite, minor massive dolomite and dolomite breccias and minor thin-bedded black limestone. This unit forms a northwest-trending belt along the northeast margin of the claims. Near the southwest boundary of the claims, thrust faulting places these carbonates on top of younger volcanics.

Disconformably overlying the dolomites is a Devonian-Mississippian succession comprised of an orange to dark greenish grey weathering, heterogeneous, homoclinal sequence of intermediate to felsic, fine to coarse tuffs with a varying epiclastic component, massive subvolcanic sills/dykes, and minor thin to thick interbeds of carbonaceous mudstone/siltstone and chert, (MacRobbie, (1992). The following stratigraphic column gives a more detailed description of these rock units.

Stratigraphic Column

Upper Devonian - Mississippian

uDMi light to medium grey weathering, equigranular, fine-to coarse-grained (locally pegmatitic) diorite/syenite intrusive plug.

uDMv dark green grey to orange weathering, massive, intermediate to felsic volcanic flows and thick-bedded, fine to coarse tuffs with minor inter-bedded black mudstone and chert.

Hanging Wall

11 medium grey to brown weathering, laminated to thin-bedded, dark grey to black cherty mudstone with interbedded siltstone and minor chert, pebbly siltstone and fine chert pebble conglomerate (225 - 250 m thick). Numerous medium grey to orange weathering, amygdaloidal andesite dykes/sills intrude these units.

10 heterolithic unit comprised primarily of thick-bedded dark grey to black tuffaceous mudstone intercalated with light grey, dark green grey to brown weathering dacitic to rhyolitic lapilli tuff, lapilli-ash tuff and minor tuff breccia (90 - 120 m thick). Volcaniclastics are moderately to intensely Fe carbonate-altered.

9 predominantly dark green grey weathering, medium to dark green and maroon andesite/dacite, fine-grained and locally pillowed and feldspar porphyritic massive flows with diffuse lateral and vertical contacts into monolithic flow breccias and lapilli-ash tuffs; minor dark grey to black tuffaceous mudstone is present (110 - 160 m thick). Several thick, fine-grained and locally amygdaloidal andesite sill/dykes cut the strata.

8 medium dark green, strongly chlorite altered rhyolite, dacite and andesite flows/flow breccias and tuff developed northwest of Mt. Vermilion (5 - 50 m thick). This unit contains at least 3 horizons of po, py, sp, cpy, ± gn up to 3 m thick and 80 m in strike length.

7 light to medium brown grey weathering, thick, normally-graded fine to coarse dacite ash tuff to lapilli-ash tuff containing 5 - 10% mudstone fragments intercalated with thin-thick bedded, dark grey to black mudstones. Unit shows rapid lateral thickness and facies changes (5 - 100 m thick).

Rhyolite

6 light grey to yellow, white and rusty weathering, strongly altered and pyritic unit consisting of recessive rhyolitic lapilli-ash tuff and lapilli tuff separating intervals of resistant massive fine-grained, feldspar ± quartz porphyritic flows (60 - 150 m thick). Discontinous lenses of bedded barite with stratiform py, sp, gn are developed within this unit.

Footwall

5 medium to dark green brown weathering, fine-grained massive bedded andesite/dacite ash tuff to lapilli tuff and minor fine-grained flows (45 - 120 m thick). Units are generally monolithic and moderately to strongly Fe carbonate, pyrite and chlorite altered.

4 heterolithic unit comprised of medium to light grey green, medium-thick bedded, normally-graded dacite/andesite ash tuff to lapilli-ash tuff commonly containing 5 - 15% mudstone fragments, intercalated with thin-thick interbeds of dark grey to black tuffaceous and non-tuffaceous mudstones. (80 - 100 m thick).

3 dark grey to black non-tuffaceous and lesser tuffaceous mudstone and minor thin orange to brown weathering. Fe carbonate altered sandstone (70 - 80 m thick). Several thin andesite sills/dykes intrude the strata.

2 thick sequence of orange to brown weathering. Fe carbonate altered dacite ash tuff to lapilli tuff with several thin to thick vesicular andesite sill/dykes (80 - 100 m thick).

1 dark grey to black thin bedded calcareous non tuffaceous mudstones (20 - 50 m thick).

Upper Silurian - Devonian

uSDc grey, thick to massive bedded silty dolomite, dolomite breccia with minor thin bedded black limestone.

The lowermost 4 units of the Upper Devonian-Mississippian succession suggest deep water, fine clastic sedimentation with increasing distal intermediate volcanism upsection, reflected by an increasing tuffaceous component. Unit 4 consists of dominantly fine to coarse volcaniclastics, although epiclastic mudstone fragments and interbeds are present. The overlying unit (unit 5) comprises monolithic, fine to coarse, massive bedded intermediate tuffs and minor flows with no epliclastic component, reflecting strong, more proximal volcanism.

The overlying rhyolite (unit 6) is a distinctive unit, characterized by its light grey, yellow, white to rusty weathering and strongly pyritic and sericitic nature. The unit consists primarily of felsic fine ash to lapilli-ash tuffs with locally developed massive, fine-grained, feldspar quartz porphyritic flows, suggesting near vent volcanism. Rapid lateral/veritical facies and thickness changes are apparent. Pervasive k-spar/sericite/clay and carbonate alteration and pyritization are present throughout the felsic unit. The unit is thought to thicken in the trenched area in the central part of the claims and continue along strike to the southeast. Discontinuous, stratiform barite-sulfide lenses occur at or near the top of the rhyolite unit. A very distinctive but thin, light to medium grey, heterolithic felsic lapilli-ash tuff with dark green chloritic "welded" fragments occurs at the top of the rhyolite unit.

MacRobbie (1992) has subdivided the succession above the rhyolite unit (hanging wall succession) into 5 units (units 7-11). Intercalated mudstones and tuffs with mudstone fragments (similar to unit 4) of unit 7 represent a waning period of volcanism. This unit shows rapid thickness changes from <5m to 100 m to the northwest of Mt. Vermilion peak, possibly reflecting a paleotopographic low in this area. An overlying felsic to intermediate, massive flow, flow breccia and tuff unit (unit 8) also appears to be restricted to the area northwest of the peak. Unit 8 volcanics appear intermediate in composition, as they are dark grey green and of a generally massive texture; however, quartz crystals suggest the unit to be a strongly chlorite altered felsic volcanic. Hosted within unit 8 are three intervals up to 3.0 m thick, of stratabound, massive and brecciated pyrrhotite-pyrite-sphalerite-chalcopyrite +/- galena sulfide rock. The distinction between unit 8 and the overlying thick package of intermediate flows and tuffs (unit 9) is the presence of quartz crystals. Several of the amygdaloidal andesite sills/dykes may be feeders to flows in unit 9. The overlying two units reflect decreasing volcanism (unit 10) and a return to deep water, fine clastic deposition (unit 11).

An intrusive equigranular, fine to coarse-grained (locally pegmatitic) diorite/syenite plug is found 2.5 km southeast of Mt. Vermilion. Similar intrusives are found along the entire length of the volcanic belt and are thought to be subvolcanic equivalents of some of the extrusive units (MacRobbie, 1992).

Structure

The Devonian-Mississippian succession strikes northwest and dips 55 - 74 southwest to 72 northeast in the Mt. Vermilion area. The strata appear continuous along strike; however, relatively minor northeast-trending cross-faults appear to locally offset the stratigraphy.

Striking subparallel to the southwest border of the claims is the Mt. Vermilion Thrust Fault, which places Upper Silurian to Devonian dolomites over the Devonian-Mississippian volcanic sequence.

Mineralization and Rock Geochemistry

In the late 1970's Newmont trenched in the central part of the Wolf Claims and exposed pyrite, sphalerite and galena occurring as disseminations and stratiforms layers within bedded barite associated with silicified and pyritized felsic tuffs. Trench chip samples included 4.2% Zn, 0.6% Pb and 0.38 oz/ton Ag.

Samples of barite float collected from the main trench area in 1995 contained up to 1.3% (13,398 ppm) lead, 2.2% (22,433 ppm) zinc and 0.59 oz/ton (20.4 ppm) silver.

One and a half km southeast of the main trench area near the southern end of the claim group, pyrite, sphalerite and galena occur with massive to weakly bedded barite within pyritic rhyolite of unit 6. Numerous talus cobbles of silicified grey to greenish yellow pyritic rhyolite with up to 20% sulfides are present along approximately 800 m of strike length of unit 6. During the 1995 programme, rock samples were collected along the upper margin of the talus slopes. All samples contained elevated values of lead, zinc, silver and barium. The highest values came from sample PK-08 which contained 1.4% (14,121 ppm) lead, 2.2% (22,109 ppm) zinc, 81.1 ppm silver and >10% barium. Mineralized rhyolite of unit 6 terminates at the south margin of the claims at the intrusive contact with medium to coarse-grained syenite/diroite.

At the opposite end of the property barite mineralization is present north of Mt. Vermilion. Sample PK-25, float from the northern dozer trenches, contained over 1.5% (15,949 ppm) lead and 1.5% (15,498 ppm) zinc. Massive barite in Sample PK-21 contained minor sulfides and may have originated near a black mudstone horizon in unit 7.

In the northwest corner of the property, massive barite with galena was discovered during the 1995 exploration programme. Poorly-exposed massive barite, which appears to be at least 2 m wide and 25 m long, occurs at approximately 1,585 m elevation near the base of steep cliffs. Within the barite are thin beds (?) or laminations of galena up to 1 cm thick. Float cobbles of massive galena up to 10 cm thick occur in rubble overlying the barite zone. These cobbles appear to be 60 - 70% galena with up to 25% gossanous limonite.

Sample PK-24, a grab sample of galena-bearing barite, contained 1.4% (14,755 ppm) lead, 2.7% (27,469 ppm) zinc, 4.66 oz/ton (159.9 ppm) silver, 0.23% (2,291 ppm) antimony, 120 ppb gold and >10% barium. Host rocks for the barite-galena mineralization trend Az 280°/65°SW and are silicified and limonitic intermediate volcanics (?) which appear to be on trend with MacRobbie's unit 4.

A second type of mineralization at the Wolf property occurs in the strong chlorite-altered felsic flows and tuffs of unit 8 as stratabound, massive and brecciated pyrrhotite, pyrite, sphalertie, chalcopyrite +/- galena sulfide rock. Cominco found three of these sulfide "horizons" (0.1 - 3.0 m thick, approximately 80 m in strike length) on the rugged northeast slope of Mt. Vermilion. Grab samples graded 2.8-10.9% Zn and trace to 0.2% lead and trace to 0.22% copper, MacRobbie (1992).

During 1995, three samples of float and outcrop were collected from these copper-bearing sulfide zones. The highest sample, PK-23, contained 0.3% (3,110 ppm) copper and 4.0% (39,520 ppm) zinc along with 15% pyrite/pyrrhotite. A possible extension of this mineralization was found 500 m to the northwest at sample site PK-17. At this location massive sulfide float forms a short boulder train in the upper parts of a talus slope. Dark, siliceous cobbles contain up to 80% pyrite/pyrrhotite with traces of bornite. Sample PK-17 contained 0.14% (1,422 ppm) copper and 0.28% (2,764 ppm) zinc.

Two hundred metres farther northwest along strike of the projected trend of the copper-bearing pyrite/pyrrhotite massive sulfides are large outcrops of semi-massive, fine-grained pyrite and pyrite breccia which occur within silicified rhyolite. Sample PK-14 and PK-15 were collected from this area. They did not contain appreciable base or precious metals.

Approximately 900 m south of Mt. Vermilion, 200 m west of the Wolf claim boundary, massive barite up to 0.2 m wide and adjacent chert beds are present in limestone and dolomite. One sample of massive barite with limonite/hematite (PK-02) contained 0.3% (3,430 ppm) zinc. These rocks are part of the older, Silurian-Devonian overthrust carbonate sequence.

CONCLUSIONS

Stratiform barite with variable amounts of galena and sphalerite is associated with light grey felsic volcanics which subcrop along the length of the Wolf Claims. At the southern end of the claims, trace to several percent combined lead and zinc are present in barite talus and sparse exposures for a length of 800 m. However, no significant concentration other than discontinuous, <10 cm long mineralized pods or lenses were seen. Previous exploration had delineated a large Pb-Zn soil anomaly in this area which many be partially attributed to downslope dispersion of talus fines and colluvium from the mineralized horizon. The lower slopes were not examined in 1995.

Barite, sphalerite and galena mineralization is also present in the central part of the claims where previous dozer trenching has been concentrated. Barite with up to 2.2% zinc and 1.3% lead was sampled in this area in 1995. Drilling in 1978 was designed to intersect the south-dipping target stratigraphy under the trenches but encountered no significant sulfides and may not have reached unit 6. The baritic sulfide-bearing felsic volcanics of unit 6 may dip quite steeply to the south in this area (MacRobbie, 1992). An electromagnetic geophysical survey conducted by Cominco in 1992 delineated a conductor in the area which Holroyd (1993) attributes to a small sulfide body.

At the north end of the claims, massive barite with galena was discovered in 1995. The size of the barite showing (approximately 2 m x 25m) and the grade of base and precious metal mineralization is encouraging. A grab sample of galena-bearing barite contained 1.4% (14,755 ppm) lead, 2.7% (27,469 ppm) zinc and 4.66 oz/ton (159.9 ppm) silver. The showing has not been trenched and is covered by talus to the north and east.

A second type of sulfide mineralization consisting of massive pyrite, pyrrhotite, and lesser chalcopyrite horizons within dark chloritic altered volcanics of unit 8 m long. Assays up to 10.9% zinc and 0.2% lead and copper were reported. One sample of similar sulfide mineralization was collected 500 m north of the stratiform horizons during the 1995 programme, indicating additional strike length may be possible.

RECOMMENDATIONS

Surface exploration consisting of geological mapping and rock geochemistry and hand trenching should be concentrated in the north part of the claims and directed toward both the massive barite, galena/sphalerite mineralization and northern extensions of pyrite, pyrrhotite, chalcopyrite stratiform sulfide horizons. Although the terrain is locally very steep, a geophysical survey including EM and magnetics should be attempted. Geophysical signature of pyrrhotite-pyrite-chalcopyrite-sphalerite sulfide mineralization is expected to be strong due to its length and width (up to 3 m x 80 m) and its magnetic signature. The newly discovered massive barite at the northwest corner of the property locally contains massive (up to 70%) galena, as evidenced by overlying float cobbles. This occurrence should exhibit a detectable geophysical response.

At lower elevations in the far south part of the claims, strong base metal soil anomalies obtained in previous exploration should be examined. Source area may not be entirely from barite, galena, sphalerite occurrences much higher up on the slopes.

If surface exploration and geophysics are successful in expanding known sulfide targets, diamond drilling should be undertaken. Furthermore, additional drilling may be warranted at the main trench area where DDH-78-1 failed to reach the target horizon. This area is coincident with small conductive body delineated in the 1992 geophysical survey.

STATEMENT OF EXPENDITURES - PHYSICAL WORK
WOLF 1-18 MINERAL CLAIMS

CANADA) In the matter of an evaluation program on the
) Wolf 1-18 Mineral Claims

I, Peter R. DeLancey, for Atna Resources Ltd., #900 - 409 Granville Street, Vancouver, British Columbia, do solemnly declare that a program consisting of geological mapping and geochemical survey work was carried out on the Wolf 1-18 Mineral Claims during the period of July 25, 1995 through August 2, 1995.

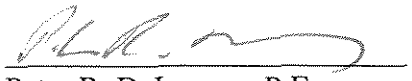
The following expenses were incurred during the course of this work and in the compilation and reporting of the results.

Geological, Rock and Soil Geochemical Survey
July 25, 1995 to August 2, 1995

PROFESSIONAL FEES AND WAGES :			
Paul Kallock, F.G.A.C.			
29031 Pioneer Hwy., Santon, WA, U.S.A.			
9 days @$350.00/day		$ 3,150.00	
William Kahlert, Field Assistant			
9 days @$150.00/day		1,350.00	$ 4,500.00
EXPENSES (expenses prorated) :			
Assays		756.89	
Drafting		630.00	
Equipment Rental			
Chain Saw			
10 days @$8.00/day	$ 80.00		
Field Equipment			
10 days @$25.00/day	250.00		
Generator			
10 days @$10.00/day	100.00		
Radio Telephone			
10 days @$10.00/day	100.00		
VHF Radios (3 units)			
10 days @$3.50/u-day	105.00	635.00	
Helicopters		1,890.00	
Printing & Reproduction		26.78	
Vehicle Rental			
10 days @$60.00/day		600.00	4,538.67
TOTAL			$ 9,038.67

Notes:

1. Wages are based on actual man days spent on the property
2. Helicopter charged are based on the actual hours flown.
3. Assay charges are based on actual numbers of samples from the property.
4. General expenses (all other costs) are prorated according to man days allocated to each property.



Peter R. DeLancey, P.Eng.
President
Atna Resources Ltd.
Date: December 23, 1995

GEOLOGIST'S CERTIFICATE

I, Paul Kallock, do state: that I am a Consulting Geologist residing at 29031 Pioneer Hwy., Stanwood, Washington, USA.

I further state that:

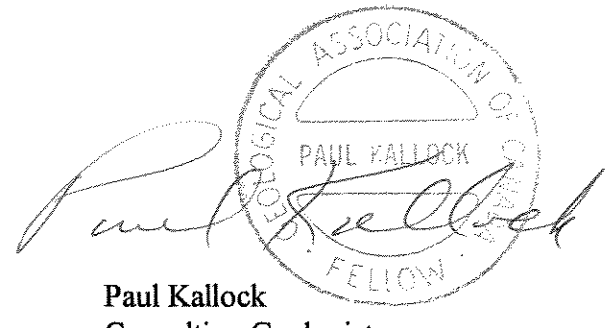
1. I have a Bachelor of Science degree in Geology from Washington State University. I am a Fellow of the Geological Association of Canada and a member of the American Institute of Mining Engineers.

2. I have engaged in mineral exploration since 1970, both for major mining and exploration companies and as an independent geologist.

3. I have authorized the report entitled Geology and Rock Geochemistry, Wolf 1-18 Mineral Claims, Yukon Territory. The report is based on my fieldwork carried out on the property and previously accumulated geologic date.

4. I have no direct or indirect interest in any manner in either the property or securities of Atna Resources Ltd. or its affiliates, nor do I anticipate to receive any such interest.

5. I consent to use this report in a prospectus or in a statement of material facts related to the raising of funds.



Vancouver, B.C.
December 23, 1995

Paul Kallock
Consulting Geologist

REFERENCES

Carne, R.C., 1991. Summary report on 1990 exploration, Wolf Claims, for YGC Resources Ltd.

Gordey, S.P., 1981. Stratigraphy, structure and tectonic evolution of southern Pelly Mountains in the Indigo Lake area, Yukon Territory: Canada Geol. Survey, Bull.318

Holroyd, R.W. 1993. 1992 Report on geophysical surveys, Wolf Property, Watson Lake M.D., Yukon, Cominco Ltd.

MacRobbie, P.A., 1992. Soil Geochemistry and Geological Mapping, 1991 Year End Report Fox-Wolf-Lynx Property, Report for Cominco Ltd.

Mortensen, J.K., 1982. Geological setting and tectonic significance of Mississippian felsic metavolcanic rocks in the Pelly Mountains, southeastern Yukon Territory: Can. J. Earth Sci., vol. 19, p.8-22.

APPENDIX A

ROCK SAMPLE DESCRIPTIONS
Wolf Claims, Mt. Vermilion, Yukon

PK-Wolf-95-01 0+25W, 3+00S * North ridge of Mt. Vermilion

0.1 m chip sample; 20% very fine grained pyrite in siliceous rhyolite; strong brown and yellow surficial iron oxide.

PK-Wolf-95-02 from overthrust carbonate section south of Mt. Vermilion

Massive white to light orange barite bed 20 cm thick with 4 cm limonite, hematite gossan selvedges; hosted in limestone and dolomite, 25 metres from a chert horizon (fine grained quartzite?).

PK-Wolf-95-03 5+75S, 11+87E

Chips from four large float (rubble in-place) boulders of grey siliceous pyritic breccia with rounded clasts (pebbles?) of rhyolite and black shale in a dark very fine grained pyritic matrix; 20% sulfides.

PK-Wolf-95-04 10+00S, 12+75E

Massive barite with 5% pyrite blebs and pods, generally strongly oxidized; from overthrust carbonate section near creek; talus float.

PK-Wolf-95-05 4+75S, 25+00E

Grab sample from dozer cut, massive bedded barite with galena and sphalerite laminate to 3%; 5% pyrite; occurs adjacent to pyritic rhyolite breccia with 20% pyrite.

PK-Wolf-95-06 4+75S, 26+00E

Grab sample of float-talus rubblecrop (near source) of rhyolite tuff with yellow tan iron oxide; traces to 0.5% galena, 5 - 15% pyrite.

PK-Wolf-95-07 4+75S, 27+00E

Rhyolite tuff with traces of galena, moderate flow foliation, 3 - 5% pyrite.

PK-Wolf-95-08 4+75S, 26+25E

Grab of float/talus of massive banded barite with 5% sphalerite, trace of galena, 5% pyrite.

PK-Wolf-95-09 4+75S, 28+25E

20% pyrite as disseminations and weak laminations in grey rhyolite tuff; moderate to strongly silicified; several large boulders in talus cluster.

PK-Wolf-95-10 4+75S, 28+50E

Blocky fractured rhyolite, minor cloudy white feldspar (?) phenocrysts; 1 - 2% sphalerite, 1% pyrite, trace galena; talus float.

PK-Wolf-95-11 4+75S, 30+00E

Grab of talus boulders of yellow green fragmental rhyolite tuff with large angular to rounded chlorite fragments; well foliated; 5% pyrite, 0.5% sphalerite, trace galena; could be upper unit 6 welded chlorite tuff.

PK-Wolf-95-12 4+75S, 31+00E

Float talus; very fine grained laminated barite; rusty layers, trace sphalerite, galena; near syenite contact.

PK-Wolf-95-13 4+75S, 23+00E

Grey siliceous rhyolite; 1-2% sphalerite, 3-5% pyrite; sphalerite often forming rims around pyrite; trace galena; near saddle near dozer road.

PK-Wolf-95-14 West corner of Wolf 18

Massive pyrite breccia; angular fragments of very find grained pyrite in a black shaley (?) matrix or a siliceous rhyolitic matrix; from a breccia zone 2 m thick within a 10-15 m rhyolitic section.

PK-Wolf-95-15 North corner of Wolf 17

20 m up stream (south of PK-14), closer to hanging wall of rhyolite; massive very fine grained pyrite - 50%, in a rhyolite tuff with minor white feldspart ghosts and occasional pale green clasts.

PK-Wolf-95-16	South corner Wolf 18
	Chips of outcrop of dark siliceous rhyolite with strong hematite and limonite and 5% disseminated pyrite, moderately leached, may have had 15 - 20% sulfides.
PK-Wolf-95-17	South corner Wolf 18
	Massive pyrite and pyrrhotite with traces bornite; 80% sulfides in dark siliceous host as float boulders, 10 m from #16.
PK-Wolf-95-18	East-central Wolf 18
	Grab sample from outcrop; rhyolite with 30% pyrite, 5% soft white barite (?).
PK-Wolf-95-19	2+00E, 3+00S
	float in creek near upper part of unit 6; rhyolite tuff with 20% pyrite.
PK-Wolf-95-20	East-central Wolf 16
	Elev. 1,775 m; chips of 4 talus cobbles of massive pyrite, pyrrhotite with traces of sphalerite and chalcopyrite; hosted in grey dacite (?).
PK-Wolf-95-21	East-central Wolf 16
	Elev. 1,790 m; massive white barite, not well bedded, trace malachite, trace sphalerite; sample of rubber near outcrop, overlain by black shale.
PK-Wolf-95-22	East-central Wolf 16
	Elev. 1,855 m; 30 - 40% pyrite/pyrrhotite with 1% chalcopyrite, 1 - 2% sphalerite; from outcrop of 2 m wide sulfide horizon hosted in dacite (?).
PK-Wolf-95-23	East-central Wolf 16
	Elev. 1,775 m; talus float cobbles from drainage west of # 22; 15% pyrite/pyrrhotite, 5 - 10% sphalerite; trace chalcopyrite.

PK-Wolf-95-24	Centre of Wolf 18
	Elev. 1,585 m; outcrop of massive barite with numerous thin seams of galena; largest massive galen bed (?) is +10 cm thick as evidenced by in-place boulders showing 25% limonite gossan; 60 - 70% galena and 5 - 15% barite; grab sample includes massive barite and galena.
PK-Wolf-95-25	3+00E, 3+00S
	Float cobbles of massive barite with 10 - 15% sphalerite, other barite cobbles in area are laminated but have less sulfides.
PK-Wolf-95-26	9+00E, 4+00S
	Float boulder of massive barite with 2 - 3% pyrite, 5% sphalerite; 60 m northeast of main trenches.
PK-Wolf-95-27	Main trench area
	Float boulder of massive barite with 5% pyrite, 0.5% galena, 0.5% sphalerite and traces chalcopyrite.

*grid locations refer to 1992 geophysical survey grid established by Cominco

APPENDIX B

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT WOLF File # 95-2757

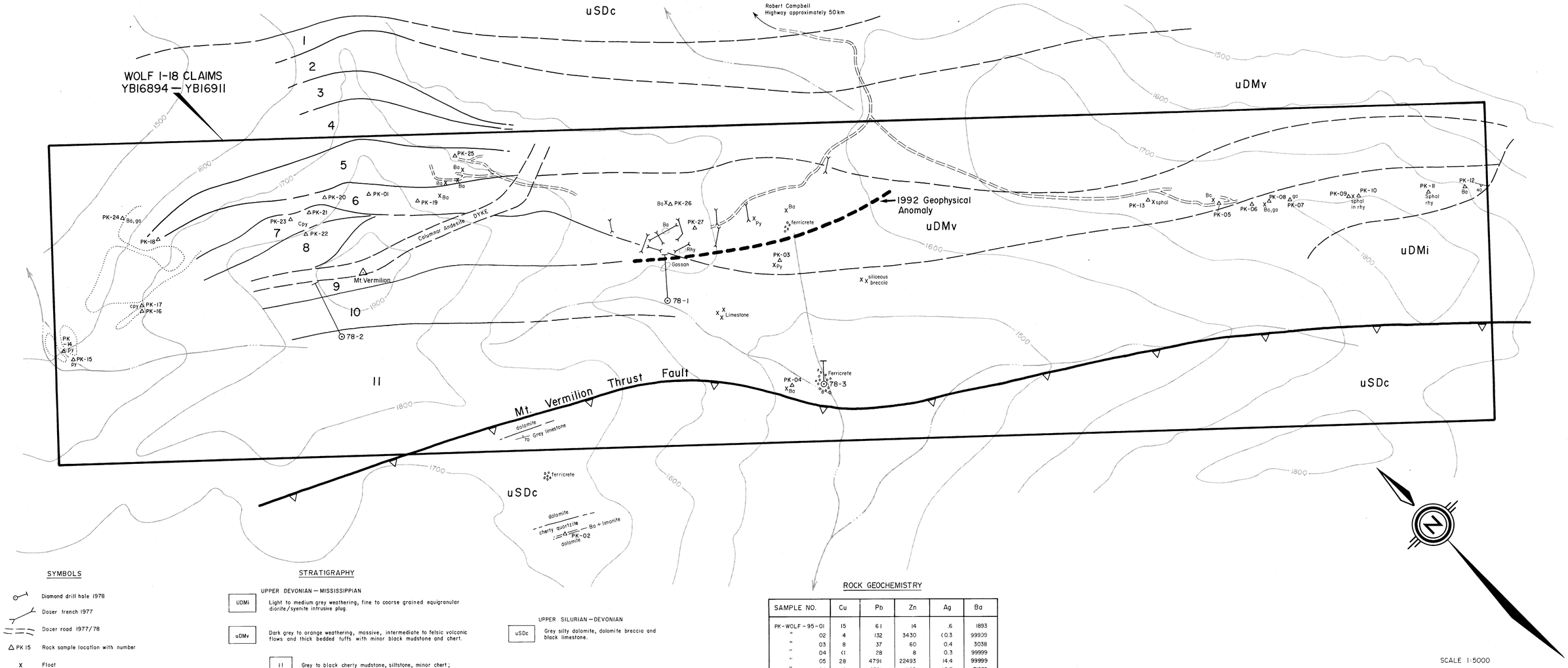
900 - 409 Granville St., Vancouver BC V6C 1T2

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppm	Au* ppb	Ba* ppm
PK-WOLF-95-01	48	15	61	14	.6	26	3	101	3.41	32	<5	<2	8	26	.2	2	<2	4	.05	.026	41	4	.02	9	<.01	3	.40	<.01	.36	2	<5	<1	2	1893
PK-WOLF-95-02	2	4	132	3430	<.3	3	<1	232	16.24	54	<5	<2	2	43	7.0	3	9	3	.33	.010	2	3	.11	354	<.01	<3	.11	<.01	.02	<2	<5	1	<1	99999
PK-WOLF-95-03	6	8	37	60	.4	3	1	53	2.36	13	<5	<2	4	11	.2	<2	<2	1	.04	.018	32	6	.03	14	<.01	<3	.27	.04	.25	2	<5	<1	1	3038
PK-WOLF-95-04	1	<1	28	8	.3	2	<1	35	4.50	21	<5	<2	<2	111	.3	<2	<2	1	<.01	.001	<1	1	.01	<1	<.01	<3	.01	<.01	.01	<2	<5	1	<1	99999
PK-WOLF-95-05	2	28	4791	22493	14.4	2	<1	661	2.63	18	<5	<2	<2	55	114.8	22	<2	1	2.12	.001	<1	<1	.89	3	<.01	<3	.07	<.01	<.01	<2	<5	2	3	99999
PK-WOLF-95-06	12	19	9391	1165	15.7	2	<1	22	1.41	12	<5	<2	3	57	21.7	3	<2	1	.03	.002	19	5	.02	17	<.01	4	.28	.01	.32	<2	<5	6	4	71932
PK-WOLF-95-07	8	129	10215	3031	23.6	3	1	46	2.10	14	<5	<2	8	32	43.6	5	<2	<1	.01	.006	65	3	.03	5	<.01	7	.43	<.01	.37	<2	<5	6	<1	13554
PK-WOLF-95-08	6	117	14121	22109	81.1	2	<1	13	.71	19	<5	<2	<2	65	141.8	113	<2	<1	.20	.001	3	<1	.01	14	<.01	8	.03	<.01	.02	<2	<5	4	11	99999
PK-WOLF-95-09	6	10	1229	950	6.6	1	1	1133	4.19	30	<5	<2	10	8	7.6	3	<2	<1	.02	.013	23	1	.04	8	<.01	3	.40	<.01	.31	<2	<5	<1	1	6754
PK-WOLF-95-10	5	651	4735	3972	8.4	3	<1	68	1.27	53	<5	<2	6	8	24.2	10	<2	<1	.01	.004	47	5	.01	14	<.01	4	.20	<.01	.31	<2	<5	1	3	10288
RE PK-WOLF-95-10	5	691	4906	4145	8.8	3	1	61	1.32	54	<5	<2	6	9	25.7	11	<2	<1	.01	.004	49	5	.01	18	<.01	<3	.21	.01	.32	<2	<5	1	2	10262
RRE PK-WOLF-95-10	6	684	4913	4135	8.7	3	1	72	1.31	56	<5	<2	6	8	25.6	9	<2	<1	.01	.003	47	5	.01	11	<.01	<3	.20	.01	.32	<2	<5	1	3	10294
PK-WOLF-95-11	9	211	934	1022	6.9	2	1	70	1.67	46	<5	<2	17	17	12.2	12	<2	1	.04	.017	106	3	.03	14	<.01	6	.38	<.01	.36	2	<5	1	3	9975
PK-WOLF-95-12	2	24	14006	183	45.1	<1	<1	13	.60	13	<5	<2	<2	109	2.3	24	<2	<1	<.01	.001	6	1	<.01	59	<.01	<3	.02	<.01	.01	<2	<5	2	21	99999
PK-WOLF-95-13	10	34	913	1888	5.5	4	<1	35	2.10	64	<5	<2	14	7	9.9	7	<2	<1	<.01	.006	84	5	.01	10	.01	<3	.34	.01	.27	<2	<5	2	2	2723
PK-WOLF-95-14	13	6	78	38	.6	1	<1	53	7.25	21	<5	<2	7	14	<.2	<2	<2	<1	.01	.004	33	2	.01	5	<.01	<3	.27	<.01	.24	<2	<5	<1	<1	2526
PK-WOLF-95-15	20	4	203	8	.9	1	<1	37	10.02	27	<5	<2	6	11	<.2	2	<2	<1	.03	.004	29	3	.02	<1	<.01	<3	.36	<.01	.28	<2	7	1	<1	6552
PK-WOLF-95-16	3	7	52	42	.3	2	<1	32	4.11	26	<5	<2	9	31	<.2	<2	<2	<1	<.01	.028	40	4	.02	33	<.01	3	.26	<.01	.49	2	<5	<1	1	2112
PK-WOLF-95-17	2	1422	18	2764	.4	<1	54	758	34.43	13	<5	<2	4	3	9.8	<2	13	<1	.26	<.001	3	<1	.46	1	<.01	<3	.51	<.01	.03	<2	<5	<1	4	148
PK-WOLF-95-18	18	13	37	13	1.2	6	2	32	3.37	12	6	<2	6	9	<.2	2	<2	1	.01	.006	21	5	.01	7	<.01	<3	.34	.01	.30	2	<5	2	<1	3212
PK-WOLF-95-19	9	11	97	19	1.3	15	5	57	4.26	17	<5	<2	5	17	.2	3	<2	4	.16	.041	17	6	.06	8	<.01	<3	.36	<.01	.23	2	<5	<1	2	1305
PK-WOLF-95-20	1	365	1137	7054	2.8	17	18	1639	29.17	15	<5	<2	3	36	20.8	2	11	<1	2.85	.001	7	1	2.32	4	<.01	<3	.20	<.01	.02	<2	<5	<1	1	89
PK-WOLF-95-21	3	105	15	50	.3	2	2	114	.55	12	5	<2	<2	221	.2	20	<2	<1	2.76	.001	3	<1	.14	44	<.01	<3	.02	<.01	.01	<2	<5	<1	<1	99999
PK-WOLF-95-22	<1	507	26	1490	.4	2	27	1920	20.25	15	<5	<2	2	36	6.3	<2	13	<1	6.31	.002	12	1	3.27	4	<.01	<3	.08	.01	.02	<2	<5	<1	<1	1727
RE PK-WOLF-95-22	<1	501	33	1469	.4	<1	28	1901	21.64	15	6	<2	2	32	5.8	<2	29	<1	6.09	.002	12	1	3.26	3	<.01	<3	.09	.01	.02	<2	<5	<1	1	1723
RRE PK-WOLF-95-22	1	461	33	1427	.3	<1	27	1818	20.37	15	<5	<2	2	30	6.4	<2	31	<1	5.79	.002	11	<1	3.13	<1	<.01	<3	.08	.01	.02	<2	<5	<1	1	2710
PK-WOLF-95-23	1	3110	31	39520	.8	8	13	2386	15.75	6	<5	<2	2	50	123.3	<2	22	<1	3.67	.001	5	3	2.19	<1	<.01	<3	.37	<.01	.07	<2	<5	<1	<1	8409
PK-WOLF-95-24	5	662	14755	27469	159.9	<1	<1	39	4.33	37	<5	<2	2	59	201.6	2291	7	1	1.59	.002	14	1	.04	2	<.01	400	.08	.08	.04	<2	14	5	120	99999
PK-WOLF-95-25	2	44	15949	15498	43.1	1	<1	325	1.21	7	<5	<2	<2	49	89.0	89	<2	<1	1.30	.001	2	<1	.61	23	<.01	<3	.03	<.01	<.01	<2	<5	2	3	99999
PK-WOLF-95-26	1	84	11670	16013	19.1	1	<1	11	.90	6	5	<2	<2	67	83.9	24	<2	<1	1.02	.001	1	1	.01	13	<.01	224	.04	.04	.02	<2	<5	1	7	99999
PK-WOLF-95-27	2	97	13398	22433	20.4	1	<1	8	1.48	8	11	<2	<2	67	147.8	23	<2	<1	.02	.002	1	1	<.01	8	<.01	4	.01	.01	<.01	4	<5	1	7	99999
STANDARD C/AU-R/S	18	55	35	120	6.5	63	31	1075	3.68	42	19	5	35	49	17.1	17	20	65	.48	.089	43	58	.89	178	.08	23	1.74	.05	.15	10	<5	2	480	2065

Standard is STANDARD C/AU-R/SO-15.

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.
BA* .2 GM SAMPLE FUSED WITH 1.2 GM LIBO2, ANALYSIS BY ICP. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 8 1995 DATE REPORT MAILED: Aug 16/95 SIGNED BY. C. D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS



SCALE 1:5000

0 50 100 200

METRES

SYMBOLS

- Diamond drill hole 1978
- Dozer trench 1977
- Dozer road 1977/78
- △ PK 15 — Rock sample location with number
- X — Float
- Area of outcrop
- Geological contact, major, minor
- 40 — Foliation attitude
- 1992 Geophysical Anomaly
- Fault
- Ferricrete
- Ga. — Galena
- Ba. — Barite
- Cpy. — Chalcopyrite
- Py. — Pyrite
- Sphal. — Sphalerite
- Rhy. — Rhyolite

STRATIGRAPHY

UPPER DEVONIAN — MISSISSIPPIAN

UDMi — Light to medium grey weathering, fine to coarse grained equigranular diorite/syenite intrusive plug.

uDMv — Dark grey to orange weathering, massive, intermediate to felsic volcanic flows and thick bedded tuffs with minor black mudstone and chert.

- **11** — Grey to black cherty mudstone, siltstone, minor chert; numerous andesite dykes/sills.
- **10** — Tuffaceous mudstone with intercalated dacitic to rhyolitic lapilli tuff.
- **9** — Dark fine grained andesite/dacite, flows, pillows and breccias; minor black mudstone.
- **8** — Chloritic altered rhyolite, dacite 3 sulphide horizons up to 3m. thick.
- **7** — Dactite ash tuff with mudstone fragments and beds.
- **6** — Light grey to yellow pyritic rhyolitic tuff and feldspar ± quartz porphyritic flows; discontinuous lenses of sulphide bearing barite.
- **5** — Massive bedded andesite/dacite tuff and flows.
- **4** — Graded dacite/andesite tuff with mudstone fragments and beds.
- **3** — Mudstone and iron carbonate altered sandstone.
- **2** — Orange, iron carbonate altered dacite tuff.
- **1** — Dark, thin bedded calcareous mudstone.

UPPER SILURIAN — DEVONIAN

uSDc — Grey silty dolomite, dolomite breccia and black limestone.

ROCK GEOCHEMISTRY

SAMPLE NO.	Cu	Pb	Zn	Ag	Ba
PK-WOLF-95-01	15	61	14	.6	1893
" 02	4	132	3430	<0.3	99999
" 03	8	37	60	0.4	3038
" 04	<1	28	8	0.3	99999
" 05	28	4791	22493	14.4	99999
" 06	19	9391	1165	15.7	71932
" 07	129	10215	3031	23.6	13554
" 08	117	14121	22109	81.1	99999
" 09	10	1229	950	6.6	6754
" 10	651	4735	3972	8.4	10288
" 11	211	934	1022	6.9	9975
" 12	24	14006	183	45.1	99999
" 13	34	913	1888	5.5	2723
" 14	6	78	38	0.6	2526
" 15	4	203	8	0.9	6552
" 16	7	52	42	0.3	2112
" 17	1422	18	2764	0.4	148
" 18	13	37	13	1.2	3212
" 19	11	97	19	1.3	1305
" 20	365	1137	7054	2.8	83
" 21	105	15	50	0.3	99999
" 22	507	26	1490	0.4	1727
" 23	3110	31	39520	0.8	8409
" 24	662	14755	27469	159.9	99999
" 25	44	15949	15498	43.1	99999
" 26	84	11670	16013	19.1	99999
" 27	97	13398	22433	20.4	99999

NB : GEOLOGY ADAPTED FROM P. MACROBBIE, COMINCO (1990)

093452

ATNA RESOURCES LTD.

WOLF CLAIMS

ROCK GEOCHEMISTY AND GEOLOGY

MT. VERMILION AREA
YUKON TERRITORY

DWG 1

PAUL KALLOCK, CONSULTING GEOLOGIST

DRAWN	N.T.S.	DATE	FIGURE
P.K./J.W.	105 G/6	DEC. 1995	3