GEOCHEMICAL REPORT

LAD MINERAL CLAIM GROUP
(Lad 3-12, 19-34, 45-62)

Mayo Mining District
Yukon Territory

Longitude : 132° 15' W.
Latitude : 62° 56' N.

N.T.S. 105-K-16

Work done during period
July 23- Sept. 13,1968

By

THOMAS J. ADAMSON

ATLAS EXPLORATIONS LIMITED

October 18, 1968

This report has been examined by the Geological Evaluation Unit. Approved as to technical worth by:

RESIDENT GEOLOGIST

Approved as to cost in the amount of: $ 94,74.00

RESIDENT MINING ENGINEER

Accepted as representation work under Section 53(4) Yukon Quartz Mining Act.

COMMISSIONER OF YUKON

LIST OF CLAIMS

Claim Numbers	Grant Numbers	Date Recorded
Lad 3-8	Y14068-Y14073	Oct. 11, 1967
Lad 9-12	Y14074-Y14077	Oct. 11, 1967
Lad 19-24	Y14136-Y14141	Nov. 3, 1967
Lad 25-32	Y14078-Y14085	Oct. 11, 1967
Lad 33-34	Y14086-Y14087	Oct. 11, 1967
Lad 45-48	Y14218-Y14221	Nov. 6, 1967
Lad 49-54	Y14142-Y14147	Nov. 3, 1967
Lad 55-62	Y14148-Y14155	Nov. 3, 1967

105-K-16

LAD MINERAL CLAIMS

20 19 53 54 56 55
22 21 51 52 58 57
24 23 49 50 60 59
11 12 26 25 47 48 62 61
9 10 28 27 45 46
7 8 30 29
5 4 32 31
3 4 34 33

GRID

1967 STAKED CLAIMS

MOUNT SELOUS 7138' ELEVATION 9 MILE

132° 14'

62° 56'

3500 4500 5500

scale 1"=1/2 mi

ATLAS EXPLORATIONS LIMITED

ROSS RIVER (Y.T.)

KEY MAP OF LAD MINERAL CLAIMS AND GRID

TABLE OF CONTENTS

LIST OF CLAIMS

KEY MAP

INTRODUCTION 1

LOCATION AND ACCESS 1

GEOLOGY 2

TOPOGRAPHY AND GROUND CONDITIONS 3

GEOCHEMISTRY 3

- Survey Method 3
- Geochemical Results and Interpretation - Soils 4
  - Lead 4
  - Copper 5
  - Zinc 6
- Geochemical Results and Interpretation - Silts 8

CONCLUSIONS AND RECOMMENDATIONS 8

Appendix I Summary of Costs

Appendix II Affidavit Supporting Summary of Costs

Appendix III List of Personnel

Appendix IV Geology Map (Grid, 1":400')

Appendix V Geochemical Values - Silts (1":400')

Appendix VI Geochemical Values - Soils (1":400')

Appendix VII Geochemical Contours - Copper (1":400')

Appendix VIII Geochemical Contours - Lead (1":400')

Appendix IX Geochemical Contours - Zinc (1":400')

TELEPHONE 685-4331

ATLAS EXPLORATIONS LIMITED
(N.P.L.)
330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

GEOCHEMICAL REPORT
LAD MINERAL CLAIM GROUP
(Lad 3-12, 19-34, 45-62)

INTRODUCTION

The Lad Group was staked in September and October, 1967, to cover the area of three Ag, Pb, Zn, Cu showings, a number of sulfide float occurrences, and high lead results from reconnaissance soil and gossan sampling.

To September 13, 1968, the work done on the group consisted of cutting a grid in the area of interest, over which geological mapping and prospecting, soil and silt sampling, magnetic and electromagnetic surveying were carried out.

An additional 164 claims were staked in the immediate vicinity during the 1968 field season.

LOCATION AND ACCESS

The Lad Group is located on the SE slope of Mt. Selous, in the north-central portion of claim sheet 105-K-16. Ross River, Y.T., the nearest settlement, is about 65 miles south of the claim group.

Access to the property can be made by float-equipped aircraft to "Van Lake", 8 miles east of the claims. Helicopter support is required from this lake to the property. Several helipads have been cut out on the property.

A camp was established on Clearwater Creek, in the northwestern portion of the claim group.

GEOLOGY

The Lad Group was geologically mapped on a scale of 1":400'.

The area is underlain mainly by quartzites, phyllites and limestones of Proterozoic age. Quartzite is by far the most abundant unit.

A number of 'wedges' of Ordovician-Devonian rocks have been infolded (?) into the Proterozoic sequence. These rocks are graphitic shales, slates and cherts, chert pebble conglomerate and grey bedded chert.

The general regional attitude of the sediments is about 135^{o}, and dipping moderately to steeply to the NE or SW.

A small pluton of granitic orthoclase porphyry outcrops on the grid at about L80E, 28N. A narrow dyke (approx. 10 ft. wide) of quartz-orthoclase porphyry outcrops in Hugo Creek at 33E, 22S.

The contact of the Mt. Selous pluton is about 2 miles west of the Lad Group.

Within the grid area, five sulfide showings have been discovered. They are vein fracture zones and shear zone impregnations. Only one of the above showings, located at 51E, 24S, would seem to hold any economic potential. This mineralized shear zone (chalcopyrite, pyrite, galena and pyrrhotite) is exposed in the creek bed for about 30 ft, is from 2-5 ft. wide, and open on both ends. A representative grab sample assayed 49.68 oz. Ag, 15.3% Pb, 3.1% Zn, 4.40% Cu.

TOPOGRAPHY AND GROUND CONDITIONS

The Lad claims are on the north and western slope and top of a broad flat-topped mountain, and also on the southeast slope northwest of Clearwater Creek. Elevations in the group range from about 3500 ft. to 5500 ft. Slopes vary from moderate to steep, but are generally quite regular.

Clearwater Creek and its main tributary from the southeast (Hugo Creek, joining Clearwater Creek at 12E, 19S) have cut sharply defined valleys down to and into bedrock.

The "A" soil horizon is thin over most of the area except in small local swampy sections. A layer of volcanic ash is found just below the "A" horizon, or very near the top of the "B" horizon. All sampling was done from the top of the "B" horizon but below the ash layer.

Timber line is at about 5000 ft. elevation. Below timber line vegatation is moderately to very thick, consisting mainly of spruce, dwarf birch and mountain alder.

GEOCHEMISTRY

Survey Method

Soil samples were collected at 100 ft. stations on all grid lines. The same grid was used for the geophysical surveys. A total of about 2000 soil samples were collected.

Silt samples were taken from all major drainages and from minor drainages in areas of interest. An attempt was made to collect active silts from as close to the centre of the drainage as possible.

All samples were analyzed for Cu, Pb and zinc trace element content at a complete testing laboratory at Ross River, Y.T.

Each soil sample was dried in its kraft bag container, then screened to -80 mesh, weighed out to 0.5 grams, and digested in hot aqua regia. Samples were then diluted, clarified for 20 hours, then tested for copper, lead and zinc content by atomic absorption spectrophotometer analysis. The "AA" unit used was a Perkin Elmer Model 303. The accuracy of the instrument ideally is 1% of the amount of metal present.

Silt samples were treated in much the same way, the only difference being that sample digestion was in hot hydrochloric acid rather than in hot aqua regia.

The Geochemical results (expressed in PPM) of each sample were plotted on a single grid plan (1":400'). Separate geochemical contour maps were drawn for each of copper, lead and zinc.

GEOCHEMICAL RESULTS AND INTERPRETATION - SOILS

Lead

In the grid area the background for lead is about 30 ppm. Anything over 100 ppm is definitely anomalous.

Anomalous lead results are scattered over the entire grid area.

A large anomaly stretches from line 84 to 68E, 23N, with a peak value of 35,500 ppm lead. Another large zone on strike with the first is located between lines 36 to 64E. This zone has a maximum value of 700 ppm lead.

A narrow sinuous lead anomaly stretches from L8 to 32E, 35N with a peak value of 1950 ppm lead.

An anomaly trending northerly and with a maximum lead value of 500 ppm extends from L0, 21S to L8W, 8S.

Between L24E to 48E, 24S is found a large southeast trending strong anomaly.

A 3000 ft. long east-west trending zone has peaks at L46E, 34S (2875 ppm), L56E, 28S (1270 ppm) and L64E, 23S (300 ppm).

Centred at L60E, 52S is a large irregular anomalous lead zone.

Smaller, lower valued lead anomalies are located at:

L20E, 12S to L28E, 6S
L56E, 26N
L60E, 8S
L52E, 22S
L32E, 34S
L16E, 19S
L8W, 2N

Copper

Copper, in the grid area, has a background value of 30 ppm and a threshold value of about 50 ppm.

A large oval shaped copper anomaly is located in the western grid area between L16W and L16E, 0-21S.

A strong anomalous copper zone exists between L16E and 20E, 35N.

A small but high valued anomaly is centred at L80E, 23N.

An elongate southeast trending moderately valued zone extends from L0 to L24E, 22N.

A strong copper zone is found between L44E and L50E, 19S.

Other smaller, lower valued copper zones are centred at:

L8E, 12N
L8E, 31N
L32E, 28N
L88E, 3N
L96E, 30N
L64E, 22S
L60E, 34S
L58E, 24S
L44E, 30S
L32E, 10S
L24E, 30S
L24E, 39S
L8E, 42S
L8E, 29S

Zinc

A background value of 100 ppm and a threshold value of about 200 ppm were determined for zinc in the grid area.

At L80E, 23N is centred a 1200 ft. long high valued zinc anomaly.

In the western grid area, an anomaly with a peak value of 600 ppm zinc, extends from L0 to L7E, 3S.

In the same area, a large anomaly, also with a maximum value of 600 ppm runs from L6W, 16S to L5E, 8S.

A southeast trending zinc zone is found between L32E and L52E, 6S.

In the area L36 to 48E, 30-37S, is found a strong zinc anomaly with a peak value of 1200 ppm.

Other smaller zinc anomalies are located at:

L28E, 14S
L16E, 19S
L16E, 10N
L16E, 20N
L16E, 29N
L20E, 35N

Interpretation

Lead anomalies are found to coincide with zinc anomalies at the following locations:

L4W, 18S
L20, 24E, 36N
L16E, 10N
L80E, 23N
L46E, 34S
L64E, 23S
L42E, 22S
L16E, 19S
L3E, 3S
L16E, 10N
L20E, 35N

Lead anomalies are found to coincide with high copper results at the following locations:

L4W, 18S
L20E, 34N
L80E, 23N
L96E, 50N
L46E, 39S
L56E, 27S
L60E, 32S
L64E, 23S
L50E, 20S
L3E, 3S
L16E, 10N
L20E, 35N

High copper and zinc values coincide at:

L0, 12S
L16E, 20N.

No significance has been attributed to the coincidence,or lack of it, between copper, lead and zinc in the grid area.

In Hugo Creek, the known showings are located in geochemically anomalous zones. The large copper-lead-zinc anomaly centred at L80E, 23N coincides with a gossan in which some galena containing 30 oz./ton silver has been found.

Magnetic anomalies coincident with lead geochemical anomalies are located at:

L80E, 29S
L80E, 30-40N
L86E, 20N
L32E, 5N
L24E to L48E, 22S
L24E, 35N

The magnetics are thought to be related to intrusive activity and associated shear zones. Although we have little geological information because of overburden cover over much of the area, it is thought that the geochemical anomalies are reflecting vein-type sulphide mineralization in the above shear zones.

GEOCHEMICAL RESULTS AND INTERPRETATION - SILTS

Silt samples were taken from all major and many minor drainages in the grid area.

Generally, the results obtained from silt sampling reflected those obtained from soil sampling.

In no areas were anomalous silt results obtained from drainages that did not have within the drainage basin a corresponding soil anomaly.

However, not every creek draining an area of high soil values gave anomalous silt results. This is seen in places in the northeast grid area. The reasons for this irregular correspondence between anomalous soil results and silt results is not yet understood because of a lack of geological information, due to overburden cover, in the areas in question.

CONCLUSIONS AND RECOMMENDATIONS

The geochemical survey revealed a large number of interesting copper, lead and zinc anomalies.

It is thought that these anomalies are reflecting vein-type sulphide mineralization in shear zones. We are dealing with a well mineralized district. The structure and lithology of the area suggest attractive possibilities of defining substantial sections of economic grade.

A program of bulldozer trenching of geochemical anomalies and follow-up diamond drilling is planned for next season.

Respectfully submitted,

T. J. Adamson,
Geologist

October 18, 1968.

SUMMARY OF COSTS
GEOCHEMICAL SURVEYS - LAD MINERAL CLAIM GROUP
(Lad 3-12, 19-34, 45-62)

1. (a) Footage sampled on grid : 201,600 ft.
   (b) Soil samples taken : 1948
   (c) Silt samples taken : 80
   (d) Geochemical samplers : R. Etzel
   T. Brock
   M. Simpson
   J. Dick
   M. Acklack
   G. Johnny
   T. Charlie
   J. Olie
   O. Charlie
   (e) Cook : C. Marcoux

2. (a) Wages:

3 man days @$20,00, daily wage of R. Etzel	$ 60.00	
6 man days @$17,00, daily wage of T. Brock	$102.00	
4 man days @$18.00, daily wage of M. Simpson	$ 72.00	
13 man days @$20.00, daily wage of J. Dick	$260.00	
7 man days @$20.00, daily wage of M. Acklack	$140.00	
6 man days @$20.00, daily wage of G. Johnny	$120.00	
3 man days @$20.00, daily wage of T. Charlie	$ 60.00	
1 man day @$20.00, daily wage of J. Olie	$ 20.00	
1 man day @$20.00, daily wage of O. Charlie	$ 20.00	
9 man days @$20.00, daily wage of C. Marcoux	$180.00	$1,034.00

(b)	Helicopter Support:		
	8.0 hrs. @$127.00/hr.	1,016.00	
	Aviation gasoline - 17 gal. @$2.00/gal.	272.00	$ 1,288.00
(c)	Fixed-Wing Support		$ 127.00
(d)	Subsistence Cost:		
	53 man days @$8.00/man day		$ 424.00
(e)	Analysis Cost:		
	2028 geochemical samples @$2.50/sample processing cost		$ 5,070.00
(f)	Supplies & Misc. Equipment		$ 50.00
(g)	Travel from Vancouver:		
	3 man @$20.00/man		$ 60.00
(h)	Supervision cost:		
	53 man days @$1.20/man day		$ 64.00
(i)	Interpretation & Report Presentation:		
	Drafting:		
	2 man days @$19.00, daily wage of P. Vlasveld,	38.00	
	Interpretation & Report writing		
	2 man days @$23.00, daily wage of T. Adamson	46.00	
	Subsistence Cost:		
	4 man days @$8.00/day	32.00	
	Supervision Cost:		
	4 man days @$1.20/day	5.00	$ 121.00
(j)	Overhead - 15% of total		
	15% of $8,238.00		$ 1,236.00
TOTAL COST OF LAD GROUP GEOCHEMICAL SURVEY (3-12, 19-34, 45-62)			$ 9,474.00

Appendix II

TELEPHONE 685-4331

ATLAS EXPLORATIONS LIMITED
(N. P. L.)
330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, Thomas J. Adamson, Geologist, Atlas Explorations Limited, of Vancouver, British Columbia, do hereby state that, to the best of my knowledge and belief, the statement of costs presented in this report "Geochemical Report - Lad Mineral Claim Group" (Appendix I) is both correct and true.

Thomas J. Adamson

Thomas J. Adamson

Oct. 18, 1968

Date

Commissioner for Oaths in and
for the Yukon Territory

LIST OF PERSONNEL
LAD GROUP GEOCHEMICAL SURVEYS

T. Adamson	Geologist - Party Chief	Vancouver, B.C.
T. Brock	Student Assistant Geochem Sampler	Vancouver, B.C.
M. Simpson	Student Assistant Geochem Sampler	Vancouver, B.C.
R. Etzel	Geochem Sampler	Ross River, Y.T.
J. Dick	Geochem Sampler	Ross River, Y.T.
F. Charlie	Geochem Sampler	Ross River, Y.T.
T. Charlie	Geochem Sampler	Ross River, Y.T.
M. Acklack	Geochem Sampler	Ross River, Y.T.
J. Olie	Geochem Sampler	Ross River, Y.T.
G. Johnny	Geochem Sampler	Ross River, Y.T.

16W 8W 0 8E 16E 20E 24E 28E 32E 36E 40E 44E 48E 52E 56E 60E 64E 68E 72E 76E 80E 84E 88E 96E

50N 40N 30N 20N 10N BASE LINE 10S 20S 30S 40S 50S

HUGO CREEK

CLEARWATER CREEK

PYRITE

LIMESTONE RUBBLE

1a RUBBLE GOSSAN

LEGEND

CRETACEOUS	11	GRANITIC INTRUSIVES
ORDOVICIAN DEVONIAN	3f	GREY BEDDED CHERT
	3d	CHERT-BLACK SLATE PEBBLE CONGLOMERATE
	3a	GRAPHITIC SHALES, CHERT, GREYWACHE
PROTEROZOIC	1c	PHYLLITE, GREY TO BUFF
	1b	LIMESTONE
	1a	QUARTZITE, MICACEOUS QUARTZITE, QUARTZ - SERICITE SCHIST.

SYMBOLS

- CONTACTS
- OUTCROP LIMIT
- BEDDING ATTITUDE
- LINEATION
- ANTICLINAL FOLD
- FAULT OR SHEAR

ATLAS EXPLORATIONS LIMITED

ROSS RIVER (Y.T.)

HESS REGION

LAD MINERAL CLAIM GROUP

GRID GEOLOGY

(OUTCROP MAP)

GEOLOGY BY: T. ADAMSON

DRAWN BY: P.J.F. VLASVELD
DATE: OCTOBER 18/58

400 0 400 800 feet

16W 8W 0 8E 16E 20E 24E 28E 32E 36E 40E 44E 48E 52E 56E 60E 64E 68E 72E 76E 80E 84 88E 92E 96E

50N
40N
30N
20N
10N
BASE LINE
10S
20S
30S
40S
50S

CLEARWATER CREEK
HUGO CREEK
4000'
4500
5000

ATLAS EXPLORATIONS LIMITED

ROSS RIVER (Y.T.)

HESS REGION

LAD MINERAL CLAIM GROUP

GEOCHEMICAL RESULTS BY ATOMIC ABSORPTION COPPER, LEAD AND ZINC, SPECTROPHOTOMETER ANALYSIS

SILT SAMPLE VALUES

PARTY CHIEF : T. ADAMSON
SILT SAMPLERS:
T. BROCK
R. ETZEL

DRAWN BY: P.J.F. VLASVELD
DATE : OCTOBER 18/68

400 0 400 900 feet

16W 8W 0 8E 16E 20E 24E 28E 32E 34E 36E 40E 42E 44E 46E 48E 50E 52E 54E 56E 58E 60E 64E 68E 72E 76E 80E 84E 88E 96E

50 N
40 N
30 N
20 N
10 N
BASE LINE
10 S
20 S
30 S
40 S
50 S

HUGO CREEK
CREEK
CREEK

ATLAS EXPLORATIONS LIMITED

ROSS RIVER (Y.T.)

HESS REGION

LAD MINERAL CLAIM GROUP

GEOCHEMICAL RESULTS BY ATOMIC ABSORPTION COPPER, LEAD, AND ZINC, SPECTROPHOTOMETER ANALYSIS.

PARTY CHIEF. T. ADAMSON

DRAWN BY. P.J.F VLASVELD
DATE : SEPTEMBER '68

400 0 400 800 feet

16W 8W 0 8E 16E 20E 24E 28E 32E 36E 40E 44E 48E 52E 56E 60E 64E 68E 72E 76E 80E 84E 88E 92E 96E

50N
40N
30N
20N
10N
BASE LINE
10S
20S
30S
40S
50S

CREEK
HUGO CREEK
CLEAR WATER

ATLAS EXPLORATIONS LIMITED

ROSS RIVER (Y.T.)

HESS REGION

LAD MINERAL CLAIM GROUP

GEOCHEMICAL SOIL SAMPLE SURVEY
COPPER CONTOURS

PARTY CHIEF : T. ADAMSON

DRAWN BY : P.J.F. VLASVELD
DATE : OCTOBER 18/68

400 0 400 800 feet

16W 8W 0 8E 16E 20E 24E 28E 32E 36E 40E 44E 48E 52E 56E 60E 64E 68E 72E 76E 80E 84E 88E 92E 96E

50N
40N
30N
20N
10N
BL
10S
20S
30S
40S
50S

1950 ppm.
95500 ppm.
5815 ppm.
1000 ppm.
2875 ppm.

HUGO CREEK
CLEAR WATER CREEK

ATLAS EXPLORATIONS LIMITED

ROSS RIVER (Y.T.)

HESS REGION

LAD MINERAL CLAIM GROUP

GEOCHEMICAL SOIL SAMPLE SURVEY

LEAD CONTOURS

PARTY CHIEF: T ADAMSON

DRAWN BY: P.J.F.VLASVELD
DATE: OCTOBER 17/68

400 0 400 800 feet

16W 8W 0 8E 16E 20E 24E 28E 32E 36E 40E 44E 48E 52E 56E 60E 64E 68E 72E 76E 80E 84E 88E 92E 96E

50N
40N
30N
20N
10N
BASE LINE
10S
20S
30S
40S
50S

CREEK
CLEARWATER
HUGO CREEK

1600 ppm
1700 ppms

ATLAS EXPLORATIONS LIMITED
ROSS RIVER (Y.T.)

HESS REGION
LAD MINERAL CLAIM GROUP

GEOCHEMICAL SOIL SAMPLE SURVEY
ZINC CONTOURS

PARTY CHIEF: T. ADAMSON
DRAWN BY: P.J.F.VLASVELD
DATE: OCTOBER 17/68

400 0 400 800 feet