REPORT ON

GEOLOGY AND GRID SOIL GEOCHEMICAL SURVEY

OF THE

BRECCIA GRID, BLUE SHEEP PROPERTY

LIARD MINING DIVISION

NTS 104I/16

Lat.: 58° 46' N. Long.: 128° 19' W.

BY

Uwe Schmidt, P.Geo.

FOR

ATNA RESOURCES LTD.

November 8, 1996

TABLE OF CONTENTS

Appendices

List of Illustrations

SUMMARY

Atna Resources Ltd. explored the Blue Sheep property 160 km south of Watson Lake, Yukon during the period from July 1 to 21, 1996. The Blue Sheep property is underlain by metasedimentary rocks of Upper Cambrian to Lower Ordovician Kechika Group, Lower Cambrian Atan Group and unmapped felsic intrusive rocks of possible Cretaceous age.

The 1996 grid soil sampling and mapping program outlined 5 geochemically anomalous areas within a hydrothermally altered breccia zone. Mineralization found to date does not explain the distribution of geochemical anomalies.

A small follow up program, to examine the feasibility of hand trenching the high silver anomalies, is recommended.

The statistical analysis and interpretation of the geochemical soil survey and mapping are emphasized in this report.

1. INTRODUCTION

During the period from July 1 to 21, 1996, Atna Resources Ltd. intermittently explored the Blue Sheep property in the Turnagain River area of north-central British Columbia. The 1996 program evaluated the base metal mineralization associated with hydrothermal brecciation occurring within the Upper Cambrian to Lower Ordovician Kechika Group at the north end of Blue Sheep Lake. Exploration included a grid soil geochemical survey, prospecting and mapping.

Work was carried out by the writer and one field assistant from a fly camp located on the northwest shore of Blue Sheep Lake. A total of 82 soil samples were collected along 2.2 km of line. The writer was contracted by Atna Resources to carry out and supervise field work. Field assistant Ron Beauchamp was employed by Atna Resources.

2. PROPERTY, LOCATION AND ACCESS

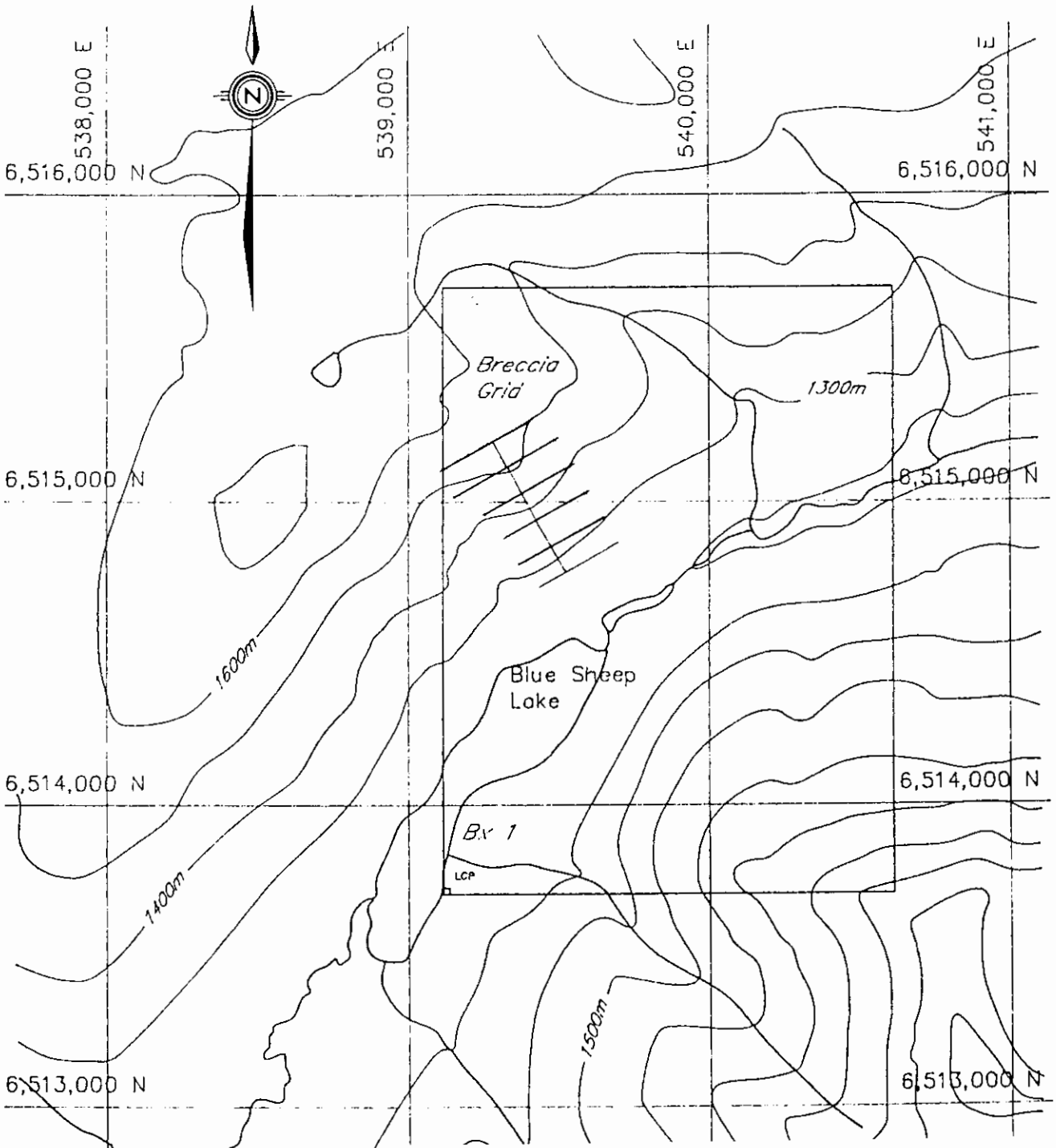
The Blue Sheep property consists of one 12 unit mineral claim covering an area of 300 hectares. The Bx 1 claim was staked in 1995 by Atna Resources to cover a known lead-zinc mineral occurrence which had previously received limited exploration. The property is located approximately 160 km, south of Watson Lake, Yukon and 110 km east of Dease Lake B.C. and is accessible from both locations by charter aircraft.

The claim is owned by Atna Resources and is located within the Liard Mining Division in NTS map area 104I/16. The coordinates of the approximate centre of the property are latitude 58° 46' N and longitude 128° 19' W.

Name	**Tenure Number**	**Expiry Date**
Bx 1	338875	August 13, 1996

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA U. SCHMIDT Nov 8, 96 GEOSCIENTIST

ATNA RESOURCES LTD.			
BLUE SHEEP PROPERTY LOCATION			
NORTHWEST GEOLOGICAL CONSULTING LTD.			
SCALE		DATE	FIG.
1:7,000,000		Nov. 96	1



Nov 8/96

ATNA RESOURCES LTD.			
BLUE SHEEP PROPERTY CLAIM LOCATION			
NORTHWEST GEOLOGICAL CONSULTING LTD			
SCALE	NTS	DATE	FIG.
1:20,000	104I/16	Nov. 96	2

3. PHYSIOGRAPHY

The property is located in rugged terrain along the eastern edge of the Stikine Ranges of the Cassiar Mountains. Blue Sheep Lake is situated at a divide between the Major Hart and Turnagain River systems. Elevations in the vicinity of the claim range from 1220 to 2100 metres. Work in 1996 was restricted to a steep south-facing slope, north of Blue Sheep Lake, with an elevation range of 1220 to 1600 metres.

Bedrock exposure in the area is variable, depending on slope and lithology. Although soil cover within the grid area is limited, bedrock is covered to a large extent by talus. Soil development is poor and consists primarily of talus fines mixed with organics.

Vegetation cover varies from dense mature coniferous forest in the valley of Blue Sheep Lake to alpine vegetation at the north end of the grid.

4. HISTORY

Previous claims in the area include the 24 Johnny claims, staked by C. J. Shandalla in 1971. These were explored by Caltor Syndicate in the same year. Work included grid magnetometer, EM 16 survey, prospecting and mapping on a Pb-Zn-Ag skarn showing located southeast of Blue Sheep Lake. The mineralization is associated with skarn development at a limestone felsic intrusive contact. The highest-grade lead mineralization of five samples from the showing assayed 14.6 opt Ag, 7.5 % Pb, 1.23% Cu and 0.26% Zn. The highest zinc mineralization assayed 4.32 % Zn, accompanied by 5.85 % Pb, 3.0opt Ag and 0.14% Cu. No further work was carried out and the claims were allowed to lapse.

In 1980 and 1981 Amax of Canada Limited staked five Sky claims totalling 67 units. An exploration program of soil, silt and rock geochemical sampling and mapping was carried

out in 1981, focussing on scheelite and molybdenite-bearing skarns located southeast of Blue Sheep Lake. The program outlined a 200 metre by 35 metre scheelite, molybdenite and powellite mineralized skarn zone developed in Atan Group carbonates intruded by a Cretaceous (?) quartz-feldspar porphyry stock. An average grade of 0.5 % WO3 plus MoS2 over 5m width was estimated for the skarn zone.

Amax also soil sampled the breccia zone north of Blue Sheep Lake where galena, sphalerite and pyrite mineralization was found in intensely altered "dolostone" fragments within the breccia. Highly anomalous Pb, Zn and Ag analyses were obtained in soils. It is this area which attracted Atna and resulted in the staking of the Bx 1 claim in 1995.

Atna Resources Ltd. explored the northeast corner of the Blue Sheep Property (Bx 1 claim) in 1996 by grid soil sampling, prospecting and mapping. Eighty-three grid soil samples were taken at a line spacing of 100 metres and sample interval of 25 metres. Thirteen rock samples were taken for whole rock geochemical analysis.

5. REGIONAL GEOLOGY

The geology of Cry Lake map area is divisible into six fault bounded terranes. The northeast corner of the map area, in the vicinity of the property, is underlain by the Ancestral North America Terrane which includes Late Proterozoic to Mississippian miogeoclinal sedimentary rocks intruded by Cretaceous granitic rocks. In the vicinity of Blue Sheep Lake, southerly dipping Lower Cambrian Atan Group carbonates and overlying Upper Cambrian to Lower Ordovician Kechika Group phyllites are intruded by an unmapped Cretaceous (?) quartz-feldspar porphyry stock.

6. PROPERTY GEOLOGY

The aim of this project was the evaluation of a hydrothermally altered breccia body at the north end of Blue Sheep Lake. This area was briefly described by Bentkowski and Hitchins in a 1981 assessment report. High soil geochemical analyses were reported for Pb, Zn and Ag along with a description of galena, sphalerite pyrite mineralization occurring in breccia fragments.

A soil geochemical grid established over the breccia zone provided the survey control for mapping. Although the grid area lies within an area of steep topography, outcrop is limited by recessive weathering bedrock and extensive talus cover.

The breccia body intrudes Upper Cambrian to Lower Ordovician Kechika Group phyllites and has a length of 330 metres and width of up to 140 metres. The long axis parallels the northwest strike of local lithologies which dip moderately northeastward. Locally, small scale, open folds were identified with horizontal fold axes trending northwest. Carbonate rocks of the underlying Rosella Formation of the Lower Cambrian Atan Group, crop out at lower elevations, south of the limits of mapping.

Contact relationships between the breccia and phyllite are poorly exposed because the breccia weathers recessively. The limits of the breccia zone are inferred by contact metamorphism in the host phyllite. Lithologies within the breccia zone were sub-divided into four mappable units, based on matrix colour, fragment lithology and alteration. Most of the breccia is intensely altered, ranging from a white, kaolinized varieties to pale green, chloritized (?) varieties. Fragments are generally small, and display a wide range of alteration and vary in texture from sub-angular to rounded. Fragments within polymictic breccias vary from unaltered to intensely altered. Phyllite fragments of the host Kechika Group show the least alteration. Carbonate-rich fragments are highly altered and difficult to interpret. Some fragments have a granular texture which could be interpreted as either

igneous or metasedimentary texture.

Four igneous units were mapped within the map area. Three of these units; aplite, feldspar-quartz porphyry and amygdaloidal, calcareous dykes, may be related. Narrow aplite dykes and sills occur within the phyllite. A white kaolinized amygdaloidal unit occurs as a dyke (?) within the hornfelsed phyllite near the western breccia contact. Kaolinized feldspar-quartz porphyry dykes cross-cut the breccia unit and Phyllite (?).

The fourth igneous map unit is a dark green, gabbroic lamprophyre which occurs as isolated outcrops within the breccia zone and as altered breccia fragments. Larger outcrops of this unit are pale orange brown on weathered surfaces and contain significant concentrations of iron carbonate. Altered fragments of the lamprophyre unit are dark red brown in colour and are mostly altered to carbonate. Some of these fragments are mineralized with galena, pyrite and sphalerite.

Most of the breccia varieties show no clear igneous textures but alteration of the breccia and hornfelsing of host rocks indicates that the breccia zone is primarily an igneous intrusive event. Previously reported lead-zinc-silver mineralization associate with feldspar-quartz porphyry intrusions south of Blue Sheep Lake, suggests that the breccia zone is associated with a felsic intrusion of possible Cretaceous age.

Mineralization

Mineralization found in the map area was restricted to galena, pyrite and sphalerite replacement of carbonate altered lamprophyre dykes. This style of mineralization was primarily found as talus fragments but also occurs as fragments within the breccia and in one location as a narrow discontinuous dyke within the breccia. The unit is distinctive when found in talus and approximately 10 % of the fragments are mineralized. Larger outcrops of unaltered to weakly carbonate altered varieties of this unit are not mineralized.

7. GEOCHEMISTRY

Grid soil sampling was carried out over a 20 hectare area in the northwest corner of the property. A total of 82 soil samples were collected during the 1996 program at a line spacing of 100 metres and sample interval of 25 metres. An additional 13 rock samples were collected for whole rock analyses.

Sample lines are marked with orange flagging tape and were established by slope-corrected compass and "hip-chain" surveys. Grid stations are identified by blue and orange flagging tape with grid coordinates and sample numbers marked on "Tivek" tags. Samples of B horizon soils were collected when possible, but because of poor soil development most samples consist of talus fines which in some areas are mixed with organics. Sample depths ranged from 20 to 40 cm.

Samples were analyzed by Acme Analytical Laboratories Ltd. of Vancouver, employing a standard 30 element Inductively Coupled Argon Plasma (ICP) package with gold analyzed by acid leach/AA from a 10 g sample. Certificates of analyses are appended to this report (Appendix A).

STATISTICAL METHOD

Analytical data were analyzed statistically using Probplot, a computer program designed to optimally fit multiple normal distributions to exploration geochemical data on probability plots (Stanley 1987). A statistical analysis of Cu, Pb, Zn, Ag, As and Au analytical data was carried out with the aid of histograms and cumulative probability plots generated by Probplot. During data analyses the data set was reduced by eliminating analyses which are at the analytical detection limit. Trial graph plots were modified by eliminating isolated high values until the best resolution of sub-populations in the data was obtained. The

degree of data truncation varies with each element. Sub-population boundaries were visually estimated and modified until theoretical mixed population curves closely matched the real data points. Anomaly thresholds for each sub-population were then calculated by the Probplot program. Threshold values were chosen for each element by examining how the statistical parameters for each sub-population could be used to distinguish the sub-populations from each other. The statistical parameters that best represented these sub-population boundaries were assigned to up to six symbol classes for plotting. In most cases fewer than six symbol classes were used and the mean value, plus and minus two standard deviations of the highest sub-populations produced the best anomaly definition. Lower sub-populations were often eliminated because they represent background metal concentrations. Summary statistics, histograms, and probability plots produced by Probplot, are appended to this report (Appendix B).

Trial plots were generated within Autocad and final thresholds were selected by a visual assessment of anomaly definition and contrast with background values. Lower sub-population thresholds are often ignored on symbol plots because they represent background concentrations. The final plots classify the analytical data for each element into ranges of increasing concentration which are assigned symbols of increasing size. In all cases, log probability plots were used to determine thresholds. Analyses and anomaly interpretation for Cu, Pb, Zn, Ag, As, Au and soil sample locations are plotted at 1: 4000 scale on Fig. 4 to 10.

DISCUSSION OF RESULTS

Copper (Fig.4)

Copper concentrations range from 7 to 298 ppm. The data were truncated above 120 ppm before calculating thresholds but only one sample lies above this threshold. The log probability plot of the data was divided into three sub populations, with population breaks

selected at 35% and 90% of the data. An anomalous threshold of 63 ppm was selected, representing the mean plus two standard deviations of population 2. Symbol boundaries were chosen at 63, 81 and 100 ppm Cu. The highest threshold corresponds to the mean plus 2 standard deviations of population 3 and an intermediate threshold of 81 ppm is the mean of population 3.

Scaled symbol plots of the data at 1:4000 scale (Fig.4) outline isolated anomalous concentrations crossing the grid in a northwesterly direction.

Lead (Fig. 5)

A total of 80 analyses within the truncated range from 14 to 2802 ppm Pb were included in the data analysis. No analyses are below the detection limit of 4 ppm and one is above the maximum value of 3500 ppm. The data were sub-divided into 4 lognormal populations with population boundaries selected at 15%, 40% and 95% of the data. A concentration of 291 ppm Pb was chosen as the anomalous threshold. Scaled symbols were assigned thresholds of 291, 538, 1350 and 1957 ppm Pb, representing the mean plus two standard deviations of population 2, the mean of population 3, the mean plus two standard deviations of population 3 and the mean of population 4, respectively.

Anomalous lead concentrations trend northwesterly across the grid, terminating on line 50+00 N but extending south, 400 metres, to line 54+00 N.

Zinc (Fig. 6)

The zinc analytical data ranges from 78 to 4959 ppm. Seventy-nine analyses were included in a data set which was truncated at 2500 ppm. This excluded 3 samples from the data analysis. The data were divided into 3 sub-populations with boundaries selected at 7% and 80%. An anomaly threshold of 485 was selected. Scaled anomaly symbols were assigned thresholds of 485, 1398 and 2355 ppm. These thresholds correspond to the mean of

population 2, the mean plus 2 standard deviations of population 2, and the mean plus two standard deviations of population 3, respectively.

Scaled symbol plots of zinc concentrations outline an area similar to the lead plots, with the anomaly ending at line 50+00 N and extending southward to line 45+00 N.

Silver (Fig.7)

Silver concentrations range from a detection limit of 0.3 ppm to 23.1 ppm. The data were truncated at the detection limit and above 7.0 ppm before calculating thresholds. Sixty-five analyses lie within this range. The log probability plot of the data was divided into four sub populations, with population breaks selected at 25%, 55% and 95% of the data. An anomalous threshold of 0.8 ppm was selected and symbol boundaries were chosen at 0.8, 3.6 and 6.7 ppm Ag. This corresponds to the mean minus two standard deviations of population 3, the mean minus two standard deviations of population 4 and the mean plus two standard deviations of population 4 respectively.

Scaled symbol plots of the data at 1:4000 scale (Fig.7) outline anomaly trends similar to Pb and Zn with the highest analyses showing a westward displacement compared to Pb and Zn.

Arsenic (Fig. 8)

The arsenic analytical data ranges from 6 ppm to 2649 ppm. Eighty analyses were included in a data set which was truncated at 1000 ppm. Two samples exceeded this threshold and were excluded from the data analysis. The data were divided into 3 sub-populations with population boundaries at 55% and 80%. An anomaly threshold of 68 was selected. Scaled anomaly symbols were assigned thresholds of 68, 160 and 650 ppm. These thresholds correspond to the mean minus 2 standard deviations of population 2, the mean minus 2 standard deviations of population 3, and the mean plus two standard deviations of

population 3, respectively.

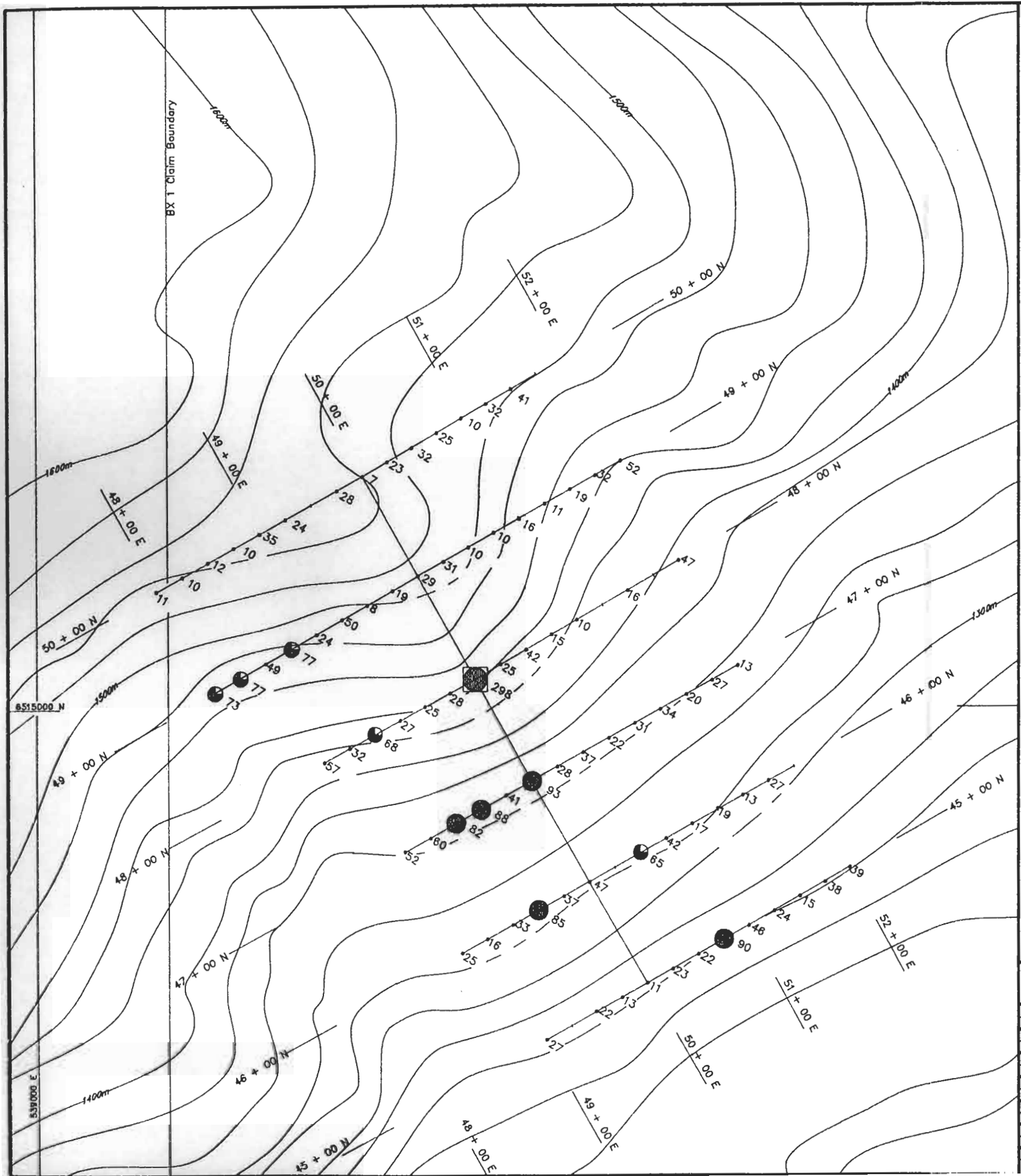
Scaled symbol plots of arsenic concentrations outline a broader anomaly in the centre of the grid and an isolated anomaly at the south end of the grid along line 45+00N.

Gold (Fig. 9)

Gold concentrations range from a detection limit of 1 ppb to 279 ppb. The data were truncated at the detection limit and above 50 ppb before calculating thresholds. Seventy-three samples were included in the data analysis, excluding six samples below the detection limit and three above the upper limit. The log probability plot of the data was divided into three sub populations, with population breaks selected at 75% and 96% of the data. An anomalous threshold of 4 ppm was selected and symbol boundaries were chosen at 4, 12 and 35 ppb Au. This corresponds to the mean minus two standard deviations of population 2, the mean minus two standard deviations of population 3 and the mean plus two standard deviations of population 3 respectively.

Scaled symbol plots of the data at 1:4000 scale (Fig.9) outline anomaly trends similar to As but there is also an overlap with the other 5 elements previously discussed.

Correlation coefficients were calculated for the above six elements and all had positive correlation coefficients with the other elements. The highest coefficients are those among Cu, Pb, Zn and Ag. Strong correlations are also evident among Ag, As and Au. This is evident when anomaly maps are overlain. The combination of all anomaly maps defines 5 metal source areas within the grid. These are centred at the following grid stations: 49+00N - 49+25E, 48+00N - 50+00E, 47+00N - 49+50E, 47+00N - 51+25E, 45+00N - 50+75E.



CU Values in ppm

<1 –	63
64 –	81
82 –	100
101 >>>>>>>	

ATNA RESOURCES LTD.

Work By	U.S.
Date Drafted	11-04-96
Drafted By	U.S.
Date Revised	11-04-96
Revised By	U.S.
N.T.S. Number	104 I/16
File Name	BLUCUFIN

Blue Sheep Property

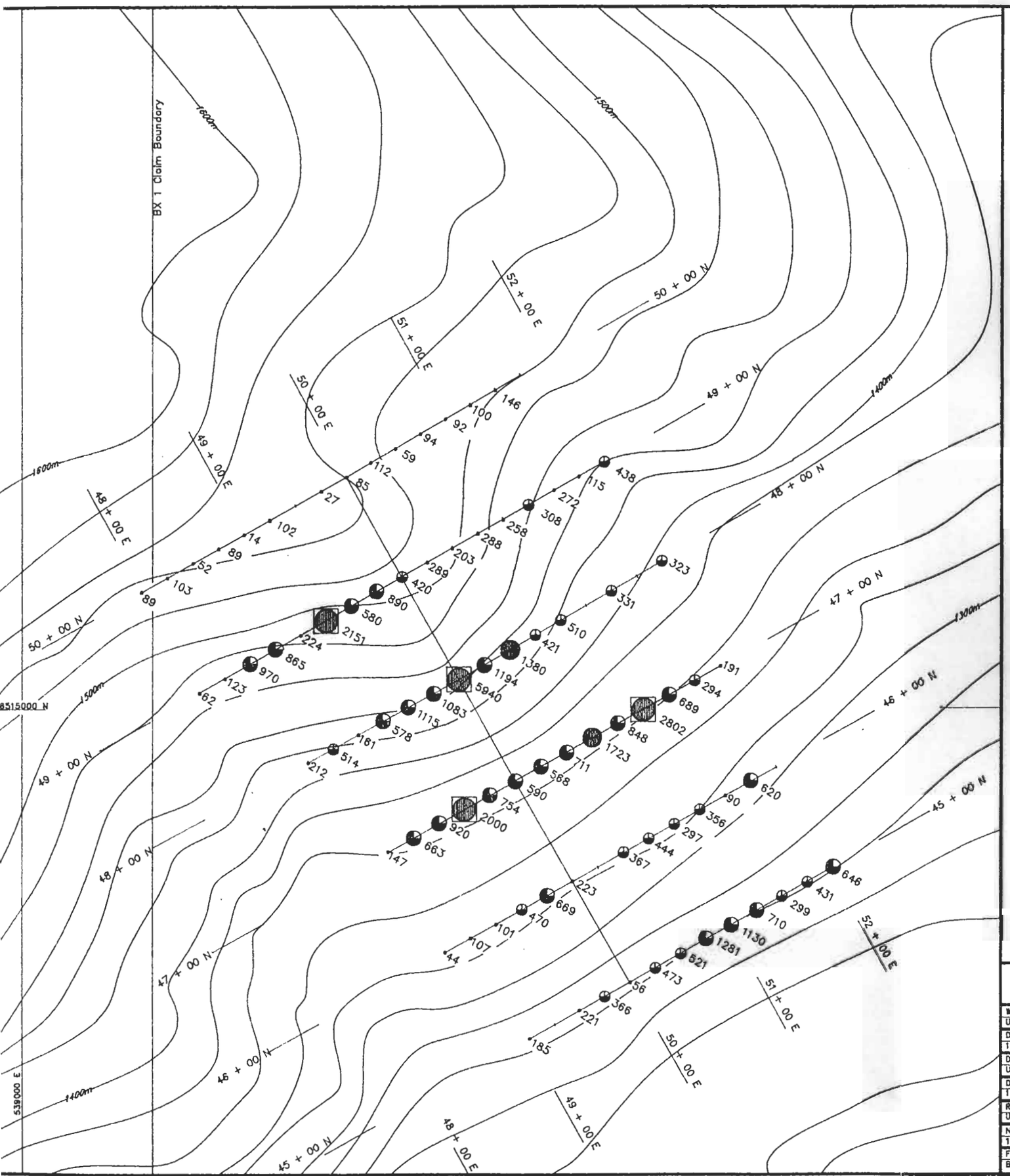
Cu Geochemistry

Northwest Geological Consulting Ltd.

40 0 40 80 120

1 : 4000

Figure 4



ATNA RESOURCES LTD.

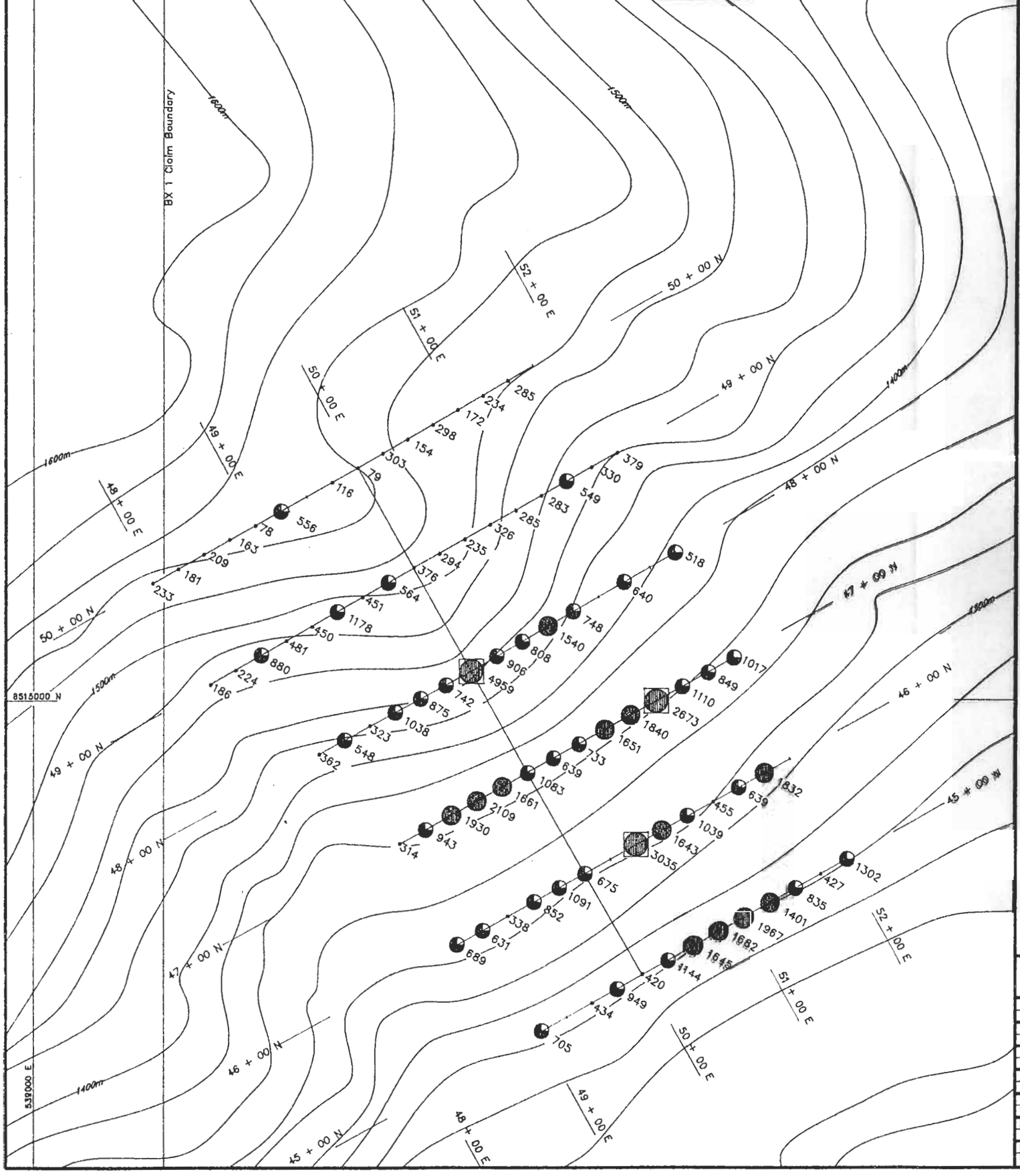
Work By	U.S.
Date Drafted	11-04-96
Drafted By	U.S.
Date Revised	11-04-96
Revised By	U.S.
N.T.S. Number	104 I/15
File Name	BLUPBFIN

Blue Sheep Property
Pb Geochemistry

Northwest Geological Consulting Ltd.

40 0 40 80 120
SCALE 1 : 4000

Figure 5



Zn Values in ppm

< 1 –	485
486 –	1398
1399 –	2355
2356 >>>>>>>	

PROFESSIONAL ENGINEER
U. SCHMIDT
BRITISH COLUMBIA
NOV 3 96
GEOSCIENTIST

ATNA RESOURCES LTD.

Work By	U.S.
Date Drafted	11-04-96
Drafted By	U.S.
Date Revised	11-04-96
Revised By	U.S.
N.T.S. Number	104 I/16
File Name	BLUZNFIN

Blue Sheep Property

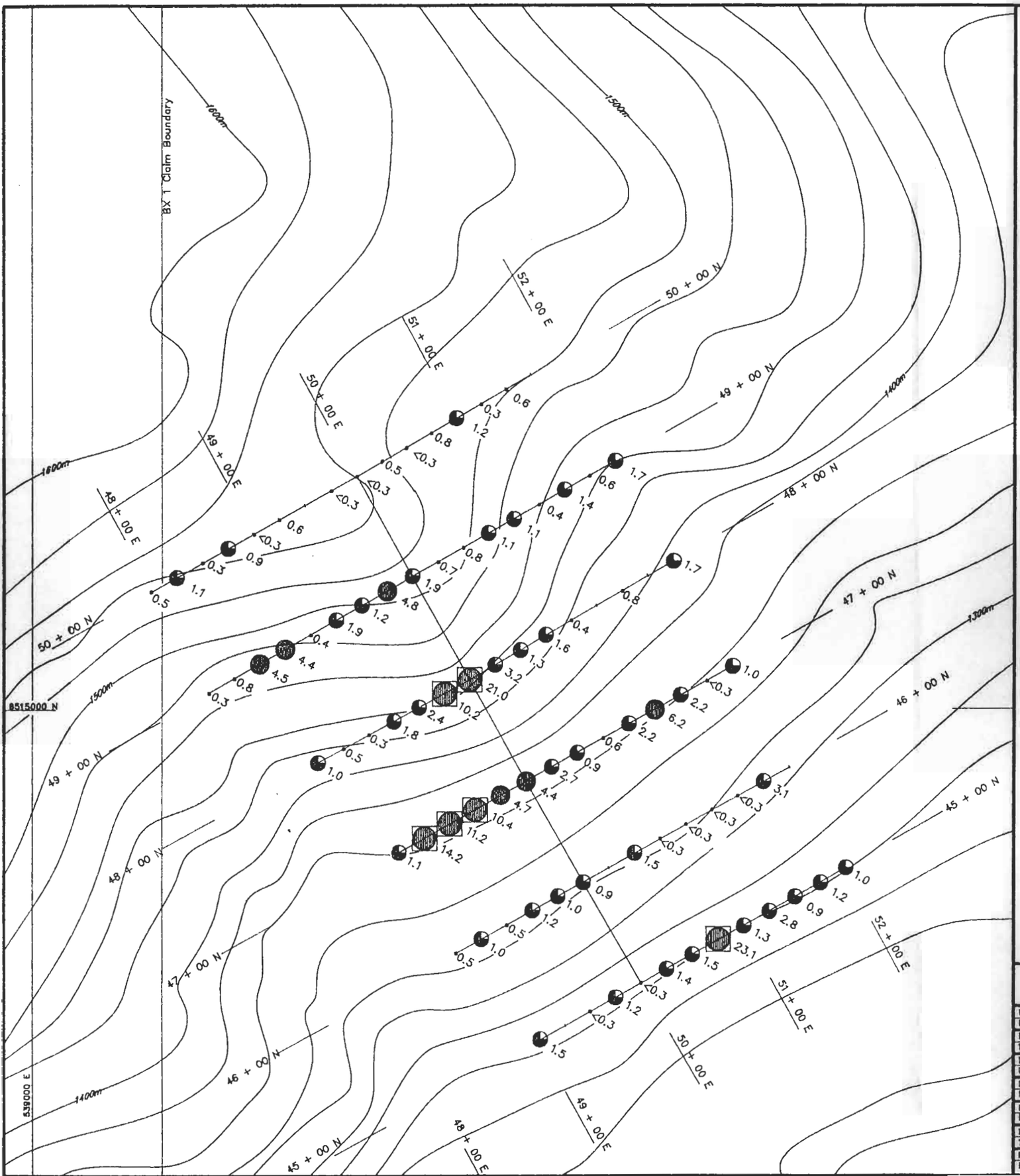
Zn Geochemistry

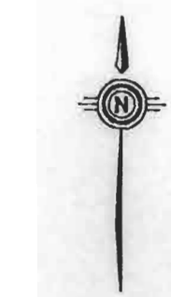
Northwest Geological Consulting Ltd.

40 0 40 80 120

SCALE 1 : 4000

Figure 6





Ag Values in ppm

•	<0.2 – 0.8
	0.9 – 3.6
	3.7 – 6.7
	6.8 >>>>>>>

ATNA RESOURCES LTD.

Work By	U.S.
Date Drafted	11-04-98
Drafted By	U.S.
Date Revised	11-04-98
Revised By	U.S.
N.T.S. Number	104 I/15
File Name	BLUAGFIN

Blue Sheep Property

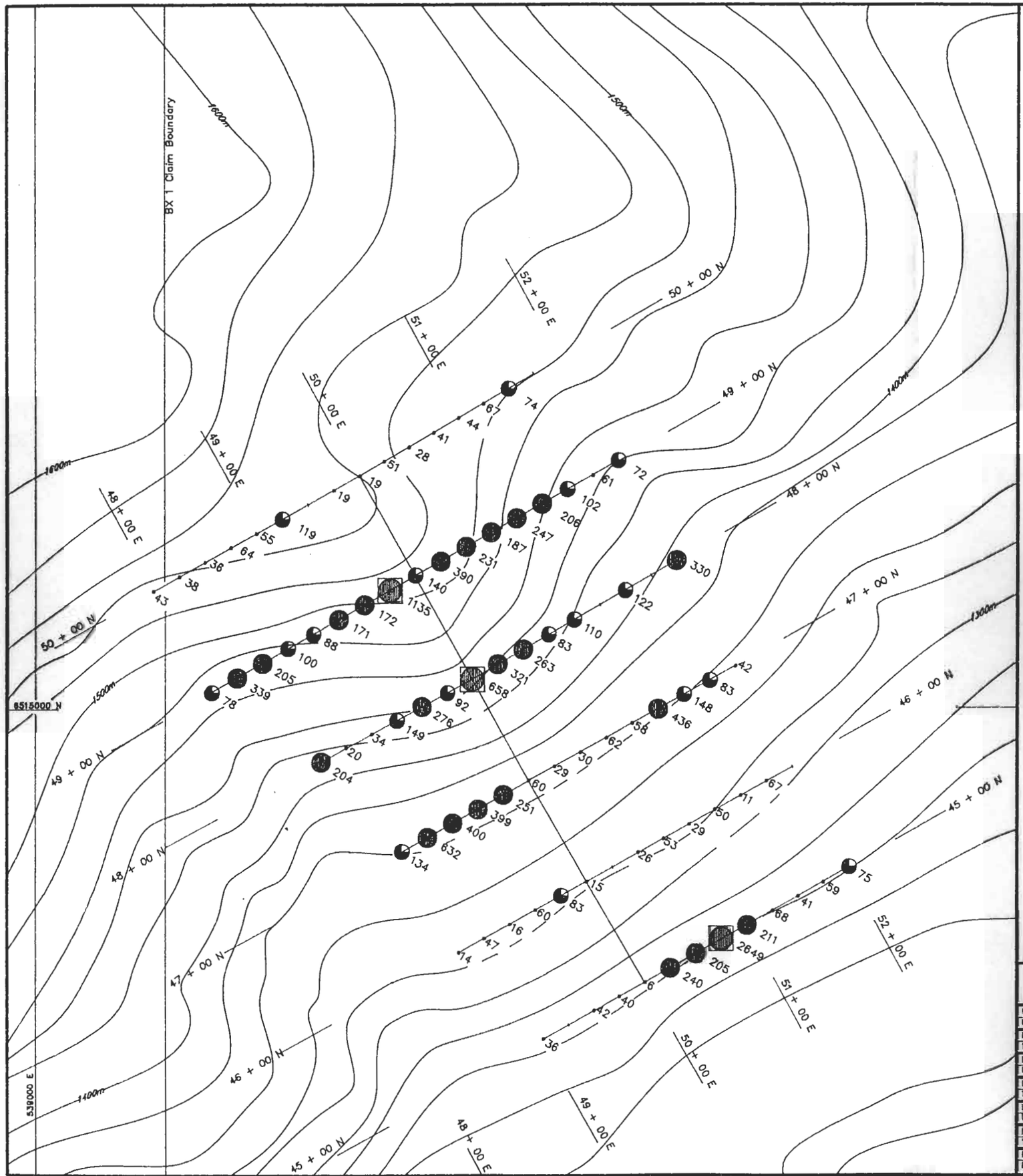
Ag Geochemistry

Northwest Geological Consulting Ltd.

40 0 40 80 120

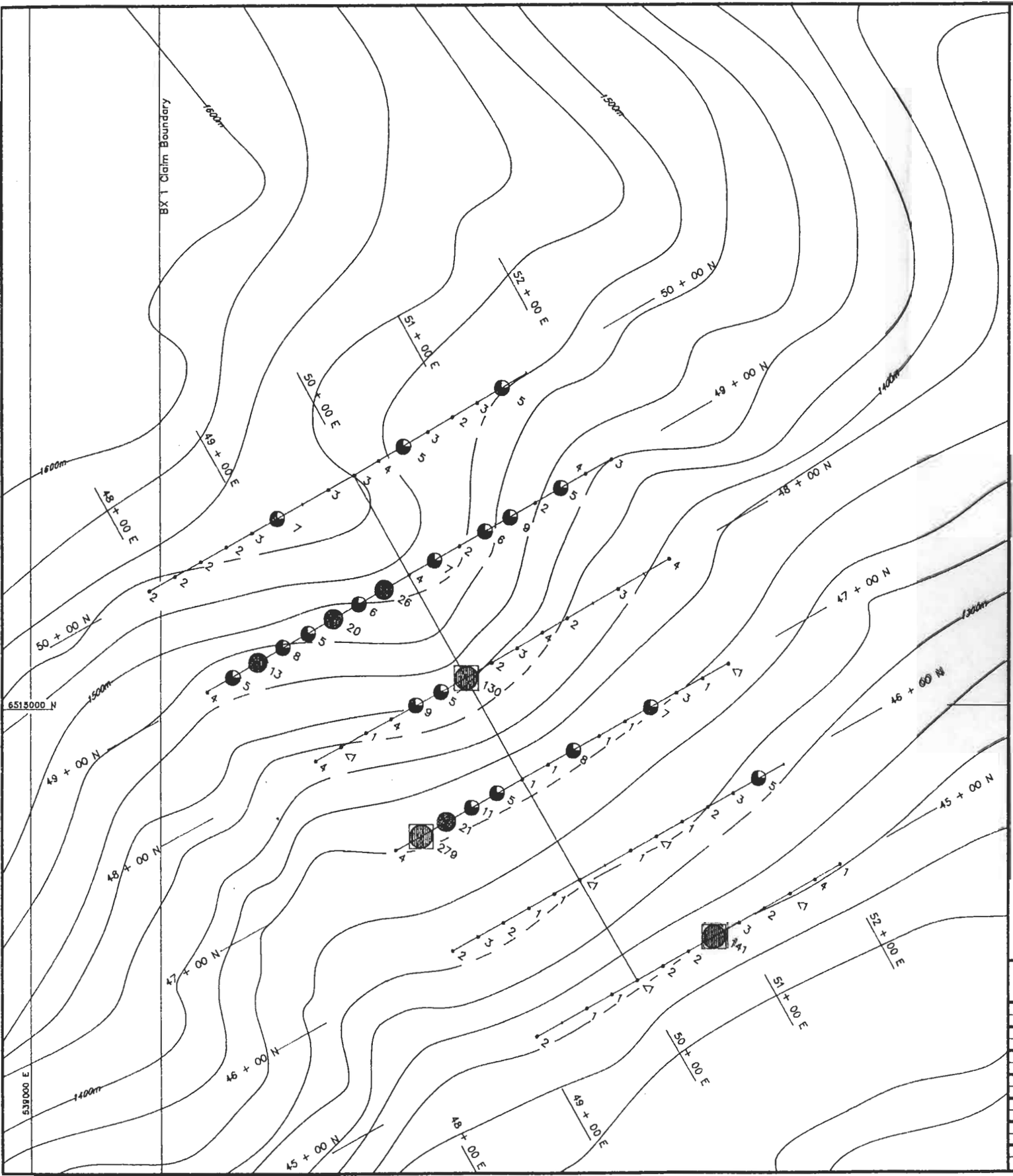
SCALE 1 : 4000

Figure 7



ATNA RESOURCES LTD.

Work By U.S.	**Blue Sheep Property**
Date Drafted 11-04-96	**As Geochemistry**
Drafted By U.S.	
Date Revised 11-04-96	
Revised By U.S.	Northwest Geological Consulting Ltd.
N.T.S. Number 104 I/16	SCALE 1 : 4000
File Name BLUASFIN	Figure 8



AU Values in ppb

0 –	4
5 –	12
13 –	35
36 >>>>>>>	

ATNA RESOURCES LTD.

Work By	U.S.
Date Drafted	11-04-98
Drafted By	U.S.
Date Revised	11-04-98
Revised By	U.S.
N.T.S. Number	104 I/16
File Name	BLUAUFIN

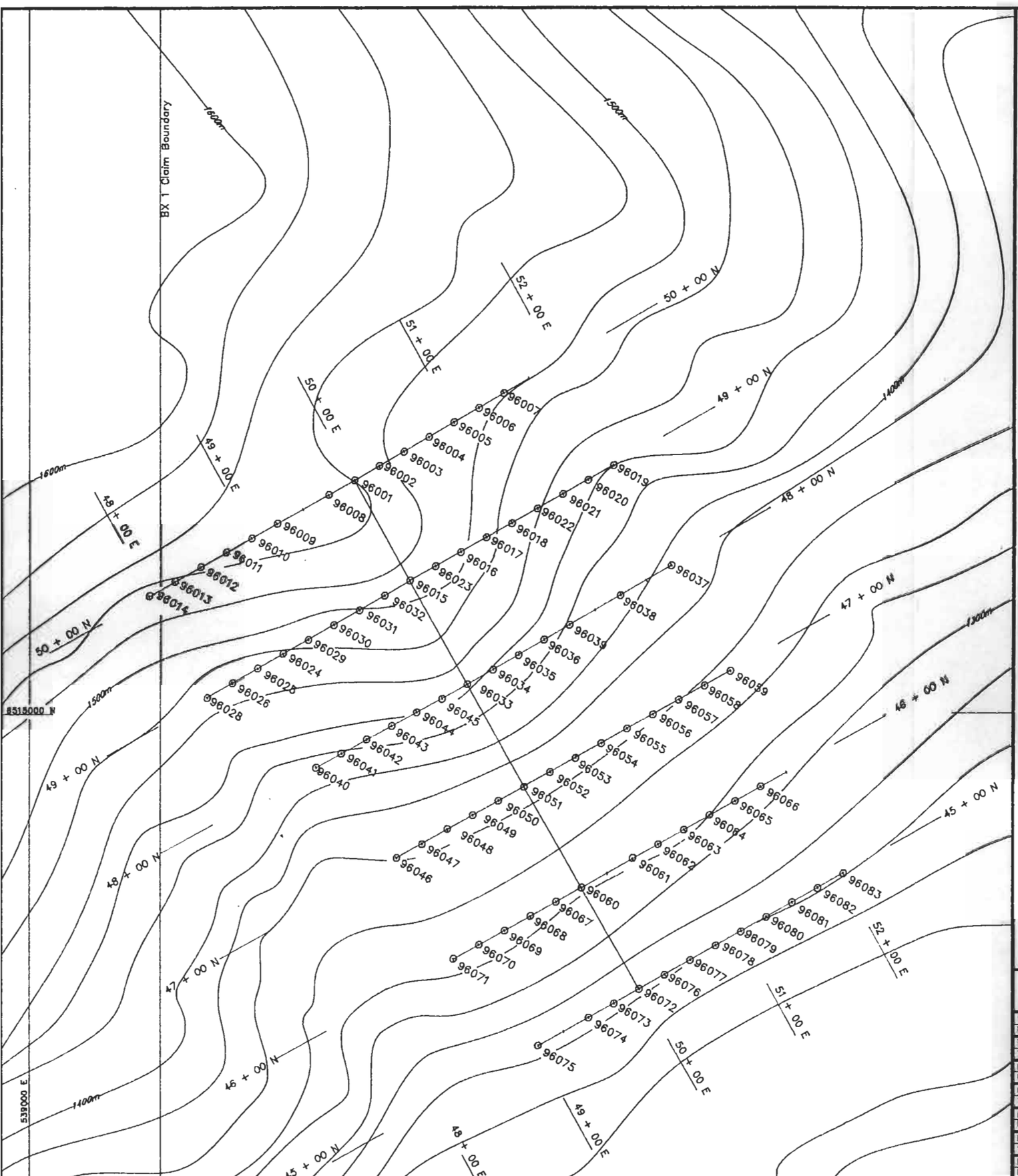
Blue Sheep Property
Au Geochemistry

Northwest Geological Consulting Ltd.

40 0 40 80 120

SCALE 1 : 4000

Figure 9



U. SCHMIDT
PROFESSIONAL GEOSCIENTIST

ATNA RESOURCES LTD.

Work By	U.S.
Date Drafted	11-04-96
Drafted By	U.S.
Date Revised	11-04-96
Revised By	U.S.
N.T.S. Number	104 I/16
File Name	BLUSAMPL

Blue Sheep Property

Sample Location

Northwest Geological Consulting Ltd.

SCALE 1 : 4000

Figure 10

8. CONCLUSIONS

The 1996 grid soil sampling and mapping program outlined 5 geochemically anomalous areas within a hydrothermally altered breccia zone. Mineralization found to date is restricted to lead-zinc replacement mineralization within carbonate-altered basic igneous rock fragments. The mineralization seen to date does not explain the distribution or concentrations of geochemical anomalies. Mineralization within the breccia zone is likely related to felsic intrusions similar to the intrusions south of Blue Sheep Lake which are associated with base metal and tungsten-molybdenum skarns.

9. RECOMMENDATIONS

Although results from the geochemical survey are encouraging, the breccia zone is limited in size. In addition, poor exposure and extensive unstable talus slopes will make low cost follow up programs such as hand trenching impractical or impossible. For these reasons only a small follow up program, to examine the feasibility of hand trenching the high silver anomalies, is recommended at this stage.

10. BIBLIOGRAPHY AND REFERENCES

Bentkowski, W.H., Hitchins, A.C. (1981): Geological and Geochemical Assessment Report, Blue Sheep Lake Property, B.C. Assessment Report No. 9661

Gabrielse, H, (1994): Geology of Dease Lake (104J/E) and Cry Lake (104I) map areas, north-central B.C., G.S.C. Open File 2779

Ogilvy, A.C., Presunka, S. (1971): Geological Examination of Johnny 1- 24 Mineral Claims, B.C. Assessment Report No. 3539

Sinclair, A.J., (1976): Applications of Probability Graphs in Mineral Exploration; The Association of Exploration Geochemists, Special Volume No. 4

Stanley, C.R., (1987): Probplot; The Association of Exploration Geochemists, Special Volume No. 14

12. STATEMENT OF EXPENDITURE

I. Field Expenses

1) Labour

U.Schmidt (Project Geologist) July 2, 3 ,11(1/2), 14-20, 1996

9 days @$360/day	$3,420.00	
R.Beauchamp (Field Assistant) July 2, 3 ,11(1/2), 14-20, 1996		
8 days @ $177/day	$1,681.50	
		$5,101.50
2) Consumables and Supplies		$573.35
3) Camp and Equipment Rental		$785.50
4) Transportation		
Truck Rental		$360.00
Ai Charter		$3,145.32
5) Geochemical Analysis		
82 soils, 30 element ICP & Au analysis		$1,287.00
13 whole rock geochem		

II. OFFICE

Data compilation,Statistical Analysis, Plotting, Interpretation, Report Writing

U. Schmidt Nov. 1, 3-8, 1996

7 days @$360/day	$2,520.00	
Expenses	$50.00	
	TOTAL	**$13,822.67**

Appendix A

CERTIFICATIONS OF ANALYSIS

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	Au* ppb
RB-96-BS-001	1	7	85	79	<.3	9	1	125	2.30	19	<5	<2	3	7	.3	<2	3	50	.09	.067	30	28	.59	51	.10	<3	1.68	<.01	.05	<2	3
RB-96-BS-002	2	23	112	303	.5	55	18	789	4.55	51	<5	<2	6	15	.2	2	<2	40	.23	.054	38	43	1.45	82	.09	<3	2.57	.01	.04	<2	4
RB-96-BS-003	1	32	59	154	<.3	44	21	744	4.69	28	<5	<2	4	22	.3	<2	<2	35	.38	.071	29	42	1.92	37	.02	<3	2.59	.01	.03	<2	5
RB-96-BS-004	2	25	94	298	.8	44	13	901	3.98	41	8	<2	<2	93	.7	<2	<2	41	1.53	.128	37	42	1.14	118	.08	<3	2.50	.01	.07	<2	3
RB-96-BS-005	2	10	92	172	1.2	22	7	265	4.69	44	<5	<2	<2	7	<.2	<2	<2	41	.09	.048	35	39	1.49	73	.04	<3	2.60	<.01	.06	<2	2
RB-96-BS-006	2	32	100	234	.3	36	14	441	4.17	67	<5	<2	8	16	.2	<2	<2	29	.26	.052	45	32	1.84	99	<.01	<3	2.41	<.01	.08	<2	3
RB-96-BS-007	2	41	146	285	.6	43	15	535	4.23	74	<5	<2	10	17	.2	<2	<2	28	.27	.062	43	31	2.12	87	.01	<3	2.49	.01	.09	<2	5
RB-96-BS-008	1	28	27	116	<.3	39	21	632	3.73	19	<5	<2	8	43	<.2	2	<2	39	.71	.083	34	30	2.15	52	.02	<3	2.29	.01	.03	<2	3
RB-96-BS-009	6	24	102	556	.6	28	8	825	3.96	119	<5	<2	5	11	1.1	8	2	42	.14	.059	38	30	1.17	79	.05	<3	1.91	.01	.06	<2	7
RB-96-BS-010	1	35	14	78	<.3	32	12	399	3.46	55	<5	<2	9	275	<.2	<2	<2	11	10.79	.041	28	18	1.08	17	<.01	<3	1.20	<.01	.03	<2	3
RB-96-BS-011	2	10	89	163	.9	22	5	547	4.48	64	<5	<2	2	42	<.2	<2	<2	48	.65	.084	28	32	.94	129	.10	<3	2.25	.01	.06	<2	2
RB-96-BS-012	2	12	52	209	.3	23	8	255	3.92	36	<5	<2	6	11	<.2	3	<2	46	.18	.059	30	33	1.23	99	.05	<3	2.17	<.01	.06	<2	2
RB-96-BS-013	3	10	103	181	1.1	27	5	278	4.20	38	<5	<2	7	13	<.2	<2	<2	51	.22	.074	32	40	1.21	71	.12	<3	2.66	.01	.06	<2	2
RB-96-BS-014	2	11	89	233	.5	24	7	364	4.44	43	<5	<2	6	8	<.2	2	<2	59	.10	.039	30	37	1.14	82	.09	<3	2.43	.01	.06	<2	2
RB-96-BS-015	2	29	420	376	1.9	790	59	1938	5.64	140	<5	<2	6	15	1.6	4	<2	35	.20	.053	32	382	2.15	124	.03	<3	1.61	<.01	.11	<2	4
RB-96-BS-016	2	10	203	235	.8	684	46	4987	4.12	231	<5	<2	4	97	1.8	<2	3	76	2.53	.030	19	581	6.16	103	<.01	3	2.09	<.01	.07	<2	2
RB-96-BS-017	3	10	288	326	1.1	617	41	5913	3.88	187	<5	<2	7	23	2.3	<2	3	97	.54	.039	27	572	5.38	121	<.01	4	3.20	.01	.10	<2	6
RE RB-96-BS-017	2	10	293	333	1.1	643	42	6031	4.01	191	<5	<2	7	23	2.3	<2	2	99	.55	.039	27	588	5.49	127	<.01	6	3.29	<.01	.10	<2	5
RB-96-BS-018	4	16	258	285	1.1	645	37	8487	3.59	247	<5	<2	6	24	1.6	<2	4	64	.61	.046	35	382	4.31	289	<.01	4	2.71	<.01	.12	<2	9
RB-96-BS-019	2	52	438	379	1.7	75	24	1821	3.82	72	<5	<2	3	27	6.3	5	2	30	.26	.165	41	51	1.46	153	.01	<3	2.13	<.01	.08	<2	3
RB-96-BS-020	3	32	115	330	.6	49	14	670	4.54	61	<5	<2	2	23	.8	2	<2	35	.31	.096	47	39	1.66	116	.03	<3	2.57	.01	.07	<2	4
RB-96-BS-021	2	19	272	549	1.4	118	16	2064	3.86	102	<5	<2	<2	23	1.8	<2	4	38	.46	.098	35	118	1.57	140	.02	<3	2.13	<.01	.09	<2	5
RB-96-BS-022	3	11	308	283	.4	330	36	5678	3.70	206	<5	<2	4	15	1.7	<2	5	76	.31	.054	22	369	4.21	164	.01	3	2.75	<.01	.10	<2	2
RB-96-BS-023	3	31	289	294	.7	820	71	7090	6.01	390	<5	<2	5	53	1.3	<2	<2	92	.45	.086	33	715	4.38	236	.01	<3	2.94	<.01	.11	<2	7
RB-96-BS-024	10	77	865	481	4.4	65	26	1015	4.74	100	<5	<2	10	117	2.1	5	<2	33	4.28	.055	22	30	2.15	48	.01	<3	2.01	<.01	.07	<2	8
RB-96-BS-025	4	49	970	880	4.5	47	16	1174	4.02	205	<5	<2	8	120	3.8	4	<2	38	3.83	.061	30	25	2.17	44	.01	<3	1.93	<.01	.06	<2	13
RB-96-BS-026	2	77	123	224	.8	56	28	490	4.62	339	<5	<2	9	198	.6	<2	<2	21	8.04	.055	24	21	1.65	55	.01	<3	1.52	<.01	.05	<2	5
RB-96-BS-027 not received	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB-96-BS-028	3	73	62	186	.3	66	33	983	5.17	78	<5	<2	9	21	.3	<2	<2	23	.28	.069	46	28	1.77	89	.01	<3	2.23	<.01	.05	<2	4
RB-96-BS-029	2	24	224	450	.4	50	23	636	4.95	88	<5	<2	5	9	2.2	3	<2	29	.13	.047	35	33	1.64	87	.02	<3	2.52	<.01	.05	<2	5
RB-96-BS-030	11	50	2151	1178	1.9	61	23	1398	6.18	171	<5	<2	5	16	7.7	<2	<2	43	.27	.109	35	37	2.11	93	.01	<3	2.44	<.01	.08	<2	20
RB-96-BS-031	3	8	580	451	1.2	81	11	2539	2.64	172	<5	<2	2	11	6.7	2	6	9	.14	.052	56	23	.28	153	.01	7	.74	<.01	.15	<2	6
RB-96-BS-032	4	19	890	564	4.8	1525	100	4658	6.38	1135	<5	<2	5	56	3.6	7	6	22	1.10	.027	32	568	5.70	202	<.01	<3	1.95	<.01	.09	<2	26
RB-96-BS-033	3	298	5940	4959	21.0	1058	71	7519	5.81	658	<5	<2	9	73	52.7	16	6	9	2.34	.023	30	226	1.64	172	<.01	<3	.58	<.01	.12	2	130
RB-96-BS-034	4	25	1194	906	3.2	237	29	4406	5.15	321	<5	<2	4	19	9.1	5	10	14	.27	.072	56	158	.46	158	.01	<3	.81	<.01	.15	2	2
STANDARD CZ/AU-S	20	57	40	144	6.3	75	35	1185	4.04	39	18	8	34	53	19.9	17	19	74	.53	.102	40	65	1.02	216	.09	30	2.06	.07	.15	11	46

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.
AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.

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	Au* ppb
RB-96-BS-035	4	42	1380	808	1.3	309	34	4200	5.34	263	<5	<2	<2	33	7.4	5	9	22	.42	.101	51	223	.69	176	.01	<3	1.22	<.01	.11	<2	3
RB-96-BS-036	3	15	421	1540	1.6	47	11	1886	5.28	83	5	<2	<2	55	6.4	<2	11	30	.62	.119	41	37	.61	168	.05	3	1.47	.01	.12	<2	4
RB-96-BS-037	2	47	323	518	1.7	48	17	1371	4.57	330	<5	<2	5	29	2.7	<2	<2	45	.58	.041	38	29	2.24	91	.04	4	2.34	.01	.12	<2	4
RB-96-BS-038	3	16	331	640	.8	37	6	7354	2.94	122	<5	<2	<2	16	8.1	<2	3	5	.47	.095	28	11	.14	150	<.01	<3	.35	<.01	.11	<2	3
RB-96-BS-039	4	10	510	748	.4	32	12	5643	7.14	110	<5	<2	<2	51	9.6	<2	<2	9	.67	.148	52	10	.22	206	<.01	3	.63	.01	.11	<2	2
RB-96-BS-040	3	57	212	362	1.0	52	23	825	4.13	204	<5	<2	6	48	2.5	<2	<2	26	1.07	.078	32	23	1.77	48	.01	<3	1.85	.01	.05	<2	4
RB-96-BS-041	5	32	514	548	.5	38	17	481	4.46	20	<5	<2	7	20	2.7	<2	<2	24	.37	.047	42	26	1.70	66	<.01	<3	2.05	<.01	.05	<2	<1
RB-96-BS-042	30	68	161	323	.3	81	27	487	5.50	34	6	<2	6	18	1.2	<2	<2	56	.30	.043	34	34	2.28	81	.01	<3	2.62	.01	.07	<2	1
RB-96-BS-043	5	27	578	1038	1.8	192	13	8555	3.05	149	<5	<2	4	49	16.2	8	2	8	1.02	.106	58	30	.34	530	.01	7	.77	.01	.14	<2	4
RB-96-BS-044	17	25	1115	875	2.4	47	3	6579	5.50	276	<5	<2	9	67	5.9	10	10	4	.77	.070	88	7	.12	283	<.01	6	.49	.01	.14	<2	9
RB-96-BS-045	9	28	1083	742	10.2	253	20	3988	6.50	92	<5	<2	14	35	5.5	5	18	15	.34	.060	89	112	.51	212	.02	4	.94	.01	.14	<2	5
RB-96-BS-046	4	52	147	314	1.1	47	19	786	4.33	134	<5	<2	5	41	2.3	<2	<2	28	.88	.084	35	25	1.85	67	.01	4	1.97	.01	.06	<2	4
RB-96-BS-047	1	60	663	943	14.2	46	22	2036	5.02	632	<5	<2	10	95	4.7	128	3	32	6.67	.033	27	31	1.69	121	.04	<3	2.38	.02	.42	<2	279
RB-96-BS-048	4	82	920	1930	11.2	46	26	2757	6.96	400	<5	<2	4	28	16.3	29	33	32	.71	.060	28	27	1.27	164	.03	<3	1.68	<.01	.14	<2	21
RB-96-BS-049	7	88	2000	2109	10.4	573	48	8645	7.26	399	<5	<2	3	48	21.0	9	22	33	.87	.119	65	385	1.52	292	.04	<3	2.00	.01	.12	<2	11
RB-96-BS-050	5	41	754	1661	4.7	165	18	7675	5.44	251	<5	<2	6	52	19.0	8	<2	36	.83	.110	63	61	.75	436	.06	<3	1.65	.02	.16	<2	5
RB-96-BS-051	7	93	590	1083	4.4	220	30	4375	7.48	60	<5	<2	9	49	8.6	<2	7	28	1.23	.064	41	84	2.60	158	.01	<3	2.05	.01	.10	<2	1
RB-96-BS-052	6	28	568	639	2.7	67	13	4275	8.65	29	<5	<2	5	26	4.9	<2	5	11	.31	.113	98	34	.39	301	.01	<3	.76	.01	.11	<2	1
RE RB-96-BS-052	6	26	563	635	2.7	64	14	4299	8.60	30	<5	<2	5	26	4.1	<2	6	11	.31	.113	98	34	.38	302	.01	<3	.76	<.01	.10	<2	1
RB-96-BS-053	6	37	711	733	.9	257	34	8369	6.16	30	<5	<2	<2	29	14.2	<2	3	29	.39	.142	40	168	1.36	441	.02	<3	1.64	<.01	.13	<2	8
RB-96-BS-054	5	22	1723	1651	.6	68	11	4057	8.11	62	<5	<2	<2	44	16.6	<2	5	19	.72	.210	38	42	.48	242	.01	3	.95	<.01	.13	<2	1
RB-96-BS-055	2	31	848	1840	2.2	42	11	7489	5.38	58	<5	<2	<2	92	55.4	<2	4	16	1.60	.221	43	18	.28	569	.01	3	.88	.01	.13	<2	1
RB-96-BS-056	5	34	2802	2673	6.2	39	12	6578	8.30	436	<5	<2	<2	48	50.6	5	11	17	.87	.230	43	18	.25	181	.01	<3	.93	.01	.14	<2	7
RB-96-BS-057	3	20	689	1110	2.2	61	10	2527	6.00	148	<5	<2	<2	21	3.2	<2	8	33	.45	.080	38	32	.73	115	.08	4	2.76	.02	.12	<2	3
RB-96-BS-058	3	27	294	849	<.3	32	21	2601	4.86	83	<5	<2	<2	17	12.8	<2	3	43	.34	.080	30	35	.94	123	.06	<3	1.79	.01	.09	<2	1
RB-96-BS-059	1	13	191	1017	1.0	27	8	665	3.89	42	<5	<2	3	27	5.1	<2	<2	49	.49	.051	26	38	.99	213	.10	3	2.63	.01	.08	<2	<1
RB-96-BS-060	17	47	223	675	.9	45	6	644	1.60	15	<5	<2	<2	49	19.6	3	<2	223	1.39	.326	12	18	.27	85	.01	5	.62	<.01	.11	<2	<1
RB-96-BS-061	4	65	367	3035	1.5	53	27	5483	4.25	26	<5	<2	<2	43	90.5	<2	2	67	.87	.066	22	42	1.14	269	.08	3	2.34	.01	.12	<2	1
RB-96-BS-062	2	42	444	1643	<.3	54	16	1643	5.00	53	<5	<2	5	41	18.9	<2	2	58	.79	.059	24	63	2.51	245	.12	<3	2.91	.01	.18	<2	<1
RB-96-BS-063	3	17	297	1039	<.3	37	14	1591	5.97	29	<5	<2	3	22	6.4	<2	<2	69	.41	.055	23	44	1.18	153	.23	<3	2.49	.02	.13	<2	1
RB-96-BS-064	3	19	356	455	<.3	48	16	3351	3.71	50	<5	<2	<2	29	11.1	<2	2	51	.54	.048	34	69	.49	225	.10	<3	1.11	.01	.11	<2	2
RB-96-BS-065	2	13	90	639	<.3	19	9	1339	3.96	11	<5	<2	2	16	7.8	<2	<2	56	.37	.053	23	36	.97	132	.15	<3	2.05	.01	.10	<2	3
RB-96-BS-066	2	27	620	1832	3.1	38	8	1518	4.27	67	<5	<2	<2	39	32.5	3	4	37	.85	.117	32	30	1.08	146	.09	4	2.22	.02	.08	<2	5
RB-96-BS-067	2	37	669	1091	1.0	41	15	2074	4.66	83	<5	<2	<2	19	8.6	2	7	59	.68	.057	19	45	1.76	86	.09	<3	2.22	.01	.17	<2	1
RB-96-BS-068	7	85	470	852	1.2	48	24	4425	4.70	60	<5	<2	<2	41	28.6	2	3	79	1.11	.121	24	57	.77	213	.08	<3	1.68	.01	.11	<2	1
STANDARD C2/AU-S	20	59	37	135	6.3	74	36	1173	4.01	38	20	8	34	53	19.9	15	21	73	.52	.101	41	66	.99	210	.09	30	2.06	.07	.15	11	48

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.
AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.

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	Au* ppb
RB-96-BS-069	1	33	101	338	.5	38	12	763	3.57	16	<5	<2	5	39	1.3	<2	3	50	1.13	.057	18	51	3.13	82	.15	4	4.53	.05	.34	2	2
RB-96-BS-070	2	16	107	631	1.0	30	12	848	3.68	47	<5	<2	3	19	2.0	2	5	57	.65	.057	19	47	1.95	73	.12	3	4.61	.01	.12	<2	3
RB-96-BS-071	1	25	44	689	.5	35	14	804	3.69	14	<5	<2	2	58	4.5	<2	<2	61	1.52	.058	15	47	1.90	140	.13	3	4.30	.07	.28	<2	2
RB-96-BS-072	1	11	56	420	<.3	11	3	2156	4.03	6	<5	<2	2	12	2.1	2	<2	25	1.83	.017	10	13	2.20	75	.05	3	1.33	<.01	.04	2	<1
RB-96-BS-073	2	13	366	949	1.2	48	13	455	5.30	40	<5	<2	8	10	2.3	<2	<2	78	.29	.011	25	43	1.16	80	.13	<3	3.47	.01	.05	<2	1
RB-96-BS-074	3	22	221	434	<.3	39	11	469	4.80	42	<5	<2	8	11	1.6	2	4	93	.39	.029	29	44	1.13	108	.11	<3	3.45	.02	.06	2	1
RB-96-BS-075	2	27	185	705	1.5	53	11	631	4.70	36	<5	<2	6	28	2.2	<2	4	66	.91	.030	35	42	1.18	118	.21	<3	3.91	.03	.08	<2	2
RE RB-96-BS-075	2	27	187	711	1.6	54	11	633	4.75	38	<5	<2	6	28	2.2	<2	<2	67	.92	.032	35	43	1.20	117	.21	5	3.93	.03	.08	2	1
RB-96-BS-076	1	23	473	1144	1.4	31	9	2014	4.05	240	<5	<2	5	20	5.1	5	<2	42	3.95	.032	22	28	2.98	110	.08	<3	1.94	.01	.07	<2	2
RB-96-BS-077	1	22	521	1645	1.5	32	8	2938	5.57	205	<5	<2	5	13	9.4	8	<2	60	1.79	.018	22	36	1.83	113	.12	<3	2.53	.02	.05	<2	2
RB-96-BS-078	2	90	12815	1682	23.1	10	2	6623	2.72	2649	<5	<2	<2	50	24.1	1965	10	13	14.62	.045	8	10	8.35	36	.02	6	.53	.01	.03	<2	141
RB-96-BS-079	1	46	1130	1967	1.3	45	11	1899	5.72	211	<5	<2	7	13	11.1	27	<2	60	1.30	.026	24	40	1.72	174	.13	3	2.71	.02	.08	<2	3
RB-96-BS-080	1	24	710	1401	2.8	38	9	2156	4.84	68	<5	<2	3	20	8.1	2	<2	50	4.38	.035	27	37	3.57	170	.11	<3	2.65	.02	.06	9	2
RB-96-BS-081	<1	15	299	835	.9	25	7	2021	3.77	41	<5	<2	<2	36	6.7	3	<2	25	12.35	.035	18	18	7.42	147	.05	<3	1.21	.01	.04	<2	<1
RB-96-BS-082	2	38	431	427	1.2	37	12	1289	4.07	59	<5	<2	8	21	2.4	4	2	47	2.13	.024	29	31	2.21	189	.07	<3	1.98	.03	.08	2	4
RB-96-BS-083	2	39	646	1302	1.0	44	14	2976	6.26	75	<5	<2	6	17	10.1	2	<2	69	.70	.029	31	41	1.24	174	.16	3	2.97	.03	.07	<2	1
STANDARD C2/AU-S	20	58	36	146	6.6	73	34	1176	3.95	38	23	8	34	53	19.4	14	18	72	.52	.102	41	63	.99	203	.08	26	2.07	.07	.15	11	45

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.
AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.

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

WHOLE ROCK ICP ANALYSIS

Atna Resources Ltd. PROJECT BLUE SHEEP File # 96-3105

1550 - 409 Granville St., Vancouver BC V6C 1T2 Submitted by: Uwe Schmidt

SAMPLE#	SiO2 %	Al2O3 %	Fe2O3 %	MgO %	CaO %	Na2O %	K2O %	TiO2 %	P2O5 %	MnO %	Cr2O3 %	Ba ppm	Ni ppm	Sr ppm	Zr ppm	Y ppm	Nb ppm	Sc ppm	LOI %	SUM %
US-96-BS-001	57.49	12.80	1.04	3.97	6.67	.11	6.68	.16	<.01	.48	.013	1645	52	198	142	20	15	<10	10.8	100.55
US-96-BS-002	64.70	15.36	3.55	1.55	2.96	.67	7.41	.63	.20	.05	.002	2672	39	411	239	21	15	<10	3.0	100.63
US-96-BS-003	63.24	15.62	3.99	.91	2.61	.13	8.50	.62	.20	.10	<.001	1965	<20	278	252	23	16	<10	3.6	99.93
US-96-BS-004	71.31	14.27	.93	.46	1.40	.07	8.95	.21	.06	.05	.002	1924	26	300	293	20	15	<10	2.4	100.52
US-96-BS-005	73.26	13.42	.65	.17	.58	.10	9.57	.11	.08	.03	.002	7090	24	135	99	18	10	<10	1.3	100.51
US-96-BS-006	49.20	13.92	4.44	2.62	12.56	1.01	3.11	.54	.04	.06	.009	1290	39	212	101	16	<10	<10	12.9	100.68
US-96-BS-007	71.66	14.04	1.88	.49	1.92	.07	6.07	.22	.05	.16	<.001	1042	22	114	204	20	14	<10	3.1	99.89
US-96-BS-008	4.11	2.71	7.11	17.34	26.99	.04	.37	.02	.11	1.59	.274	62	1747	242	237	12	<10	<10	39.2	100.16
US-96-BS-009	28.46	.43	6.99	36.10	.68	.04	<.04	.01	.09	.29	.294	15	1490	18	147	<10	<10	<10	27.2	100.82
RE US-96-BS-009	28.35	.43	7.09	36.24	.68	.04	<.04	.01	.10	.29	.295	16	1514	19	82	<10	<10	<10	27.1	100.85
US-96-BS-010	55.80	12.50	1.08	4.58	7.43	.04	6.04	.17	.01	.56	.017	1503	75	202	146	21	16	<10	12.4	100.94
US-96-BS-011	7.28	4.67	5.84	17.46	25.17	<.01	.30	.05	.04	1.17	.352	93	761	308	17	16	<10	10	36.8	99.29
US-96-BS-012	5.93	3.70	6.07	16.67	26.53	<.01	.22	.04	.07	1.31	.269	135	911	265	132	13	<10	<10	38.4	99.40
US-96-BS-013	11.68	1.62	4.13	16.20	25.74	.02	.24	.01	.06	2.01	.265	48	1188	316	22	<10	<10	<10	38.0	100.18
STANDARD SO-15	49.60	12.84	7.17	7.31	5.77	2.55	1.77	1.61	2.58	1.31	1.053	2196	96	385	733	19	<10	10	5.9	100.00

.200 GRAM SAMPLES ARE FUSED WITH 1.2 GRAM OF LIBO2 AND ARE DISSOLVED IN 100 MLS 5% HNO3. Ba IS SUM AS BaSO4 AND OTHER METALS ARE SUM AS OXIDES.
- SAMPLE TYPE: P1 ROCK P2 TO P4 SOIL Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUL 24 1996 **DATE REPORT MAILED:** Aug 5/96 **SIGNED BY** ..... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

ACME AN' 'TICAL LABORATORIES LTD. 852 E. HASTINGS ST. ' 'COUVER BC V6A 1R6 PHONE(604)253-3158 FAX(6(253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT BLUE SHEEP File # 96-3105 Page 1

1550 - 409 Granville St., Vancouver BC V6C 1T2 Submitted by: Uwe Schmidt

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	Au* ppb
US-96-BS-012	2	174	4643	2743	10.9	1049	43	11430	4.03	133	<5	<2	<2	254	49.7	2	4	20	20.94	<.001	22	1408	9.85	102	<.01	<3	.89	<.01	.03	<2	1
US-96-BS-013	1	2	2192	<1	3.4	1390	22	16921	2.75	365	<5	<2	<2	299	2.6	41	4	9	20.00	<.001	7	458	9.66	17	<.01	<3	.13	.01	.03	<2	1

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: P1 ROCK P2 TO P4 SOIL AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.

DATE RECEIVED: JUL 24 1996 **DATE REPORT MAILED:** Aug 5/96 **SIGNED BY.** .....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Appendix B

STATISTICS

COPPER STATISTICS

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — ARITHMETIC VALUES

Variable = Cu Unit = ppm N = 81

Mean =	33.370	Min =	7.000	1st Quartile =	16.750
Std. Dev. =	21.684	Max =	93.000	Median =	27.000
CV % =	64.979	Skewness =	1.149	3rd Quartile =	41.250

(# of bins = 36 - bin size = 2.457)

%	cum %	cls int	
0.00	0.61	5.771	
2.47	3.05	8.229	**
7.41	10.37	10.686	******
8.64	18.90	13.143	*******
2.47	21.34	15.600	**
4.94	26.22	18.057	****
4.94	31.10	20.514	****
3.70	34.76	22.971	***
11.11	45.73	25.429	*********
4.94	50.61	27.886	****
4.94	55.49	30.343	****
7.41	62.80	32.800	******
3.70	66.46	35.257	***
2.47	68.90	37.714	**
2.47	71.34	40.171	**
4.94	76.22	42.629	****
0.00	76.22	45.086	
3.70	79.88	47.543	***
1.23	81.10	50.000	*
3.70	84.76	52.457	***
0.00	84.76	54.914	
1.23	85.98	57.371	*
0.00	85.98	59.829	
1.23	87.20	62.286	*
0.00	87.20	64.743	
1.23	88.41	67.200	*
1.23	89.63	69.657	*
0.00	89.63	72.114	
1.23	90.85	74.571	*
2.47	93.29	77.029	**
0.00	93.29	79.486	
0.00	93.29	81.943	
1.23	94.51	84.400	*
1.23	95.73	86.857	*
1.23	96.95	89.314	*
1.23	98.17	91.771	*
1.23	99.39	94.229	*

0 1 2 3 4

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — LOGARITHMIC VALUES

Variable = Cu Unit = ppm N = 81

Mean =	1.4367	Min =	0.8451	1st Quartile =	1.2239
Std. Dev. =	0.2800	Max =	1.9685	Median =	1.4314
CV % =	19.4900	Skewness =	-0.0227	3rd Quartile =	1.6154

Anti-Log Mean = 27.331 Anti-Log Std. Dev. : (-) 14.343 (+) 52.079

%	cum %	antilog	cls int	(# of bins = 36 - bin size = 0.0321)
0.00	0.61	6.746	0.8290	
1.23	1.83	7.264	0.8611	*
0.00	1.83	7.821	0.8932	
1.23	3.05	8.421	0.9253	*
0.00	3.05	9.066	0.9574	
0.00	3.05	9.762	0.9895	
7.41	10.37	10.511	1.0216	******
3.70	14.02	11.317	1.0537	***
1.23	15.24	12.185	1.0858	*
3.70	18.90	13.120	1.1179	***
0.00	18.90	14.126	1.1500	
2.47	21.34	15.209	1.1821	**
3.70	25.00	16.376	1.2142	***
1.23	26.22	17.632	1.2463	*
0.00	26.22	18.985	1.2784	
4.94	31.10	20.441	1.3105	****
3.70	34.76	22.009	1.3426	***
2.47	37.20	23.697	1.3747	**
8.64	45.73	25.515	1.4068	*******
4.94	50.61	27.472	1.4389	****
4.94	55.49	29.579	1.4710	****
2.47	57.93	31.848	1.5031	**
7.41	65.24	34.291	1.5352	******
1.23	66.46	36.921	1.5673	*
4.94	71.34	39.753	1.5994	****
4.94	76.22	42.802	1.6315	****
1.23	77.44	46.085	1.6636	*
3.70	81.10	49.620	1.6957	***
3.70	84.76	53.427	1.7278	***
1.23	85.98	57.525	1.7599	*
1.23	87.20	61.937	1.7920	*
1.23	88.41	66.688	1.8240	*
1.23	89.63	71.803	1.8561	*
3.70	93.29	77.311	1.8882	***
1.23	94.51	83.241	1.9203	*
2.47	96.95	89.626	1.9524	**
2.47	99.39	96.501	1.9845	**

0 1 2 3 4

Blue Sheep Property

##

PARAMETER SUMMARY STATISTICS FOR PROBABILITY PLOT ANALYSIS

Data File Name = \ATNA\BLUSHEEP\GEOCHEM\BL96SOIL.DA

T

Variable = Cu Unit = ppm N = 81
N CI = 20

Transform = Logarithmic Number of Populations = 3

# of Missing Observations = 0.

0 Observations Were Below the Minimum Value of 0.0001
1 Observations Were Above the Maximum Value of 120.0000

==========

Users Visual Parameter Estimates

Population	Mean		Std Dev	Percentage
1	13.504	-	9.802	35.00
		+	18.604	
2	33.814	-	24.698	55.00
		+	46.295	
3	81.060	-	73.073	10.00
		+	89.920	

==========

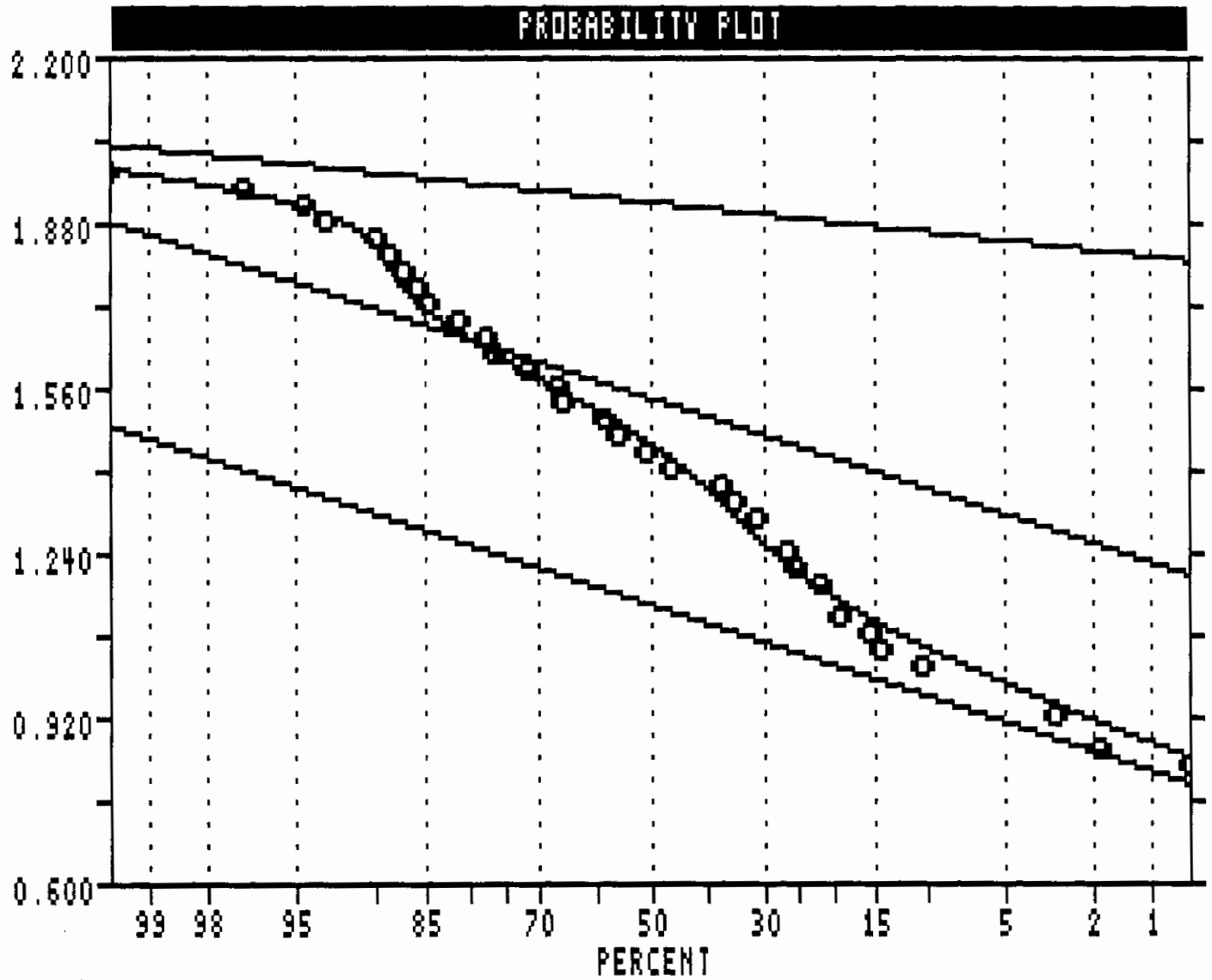
Default Thresholds.

Standard Deviation Multiplier = 2.0

Pop.	Thresholds	
1	7.115	25.631
2	18.040	63.382
3	65.873	99.747

##

Blue Sheep Property



LOGARITHMIC VALUES

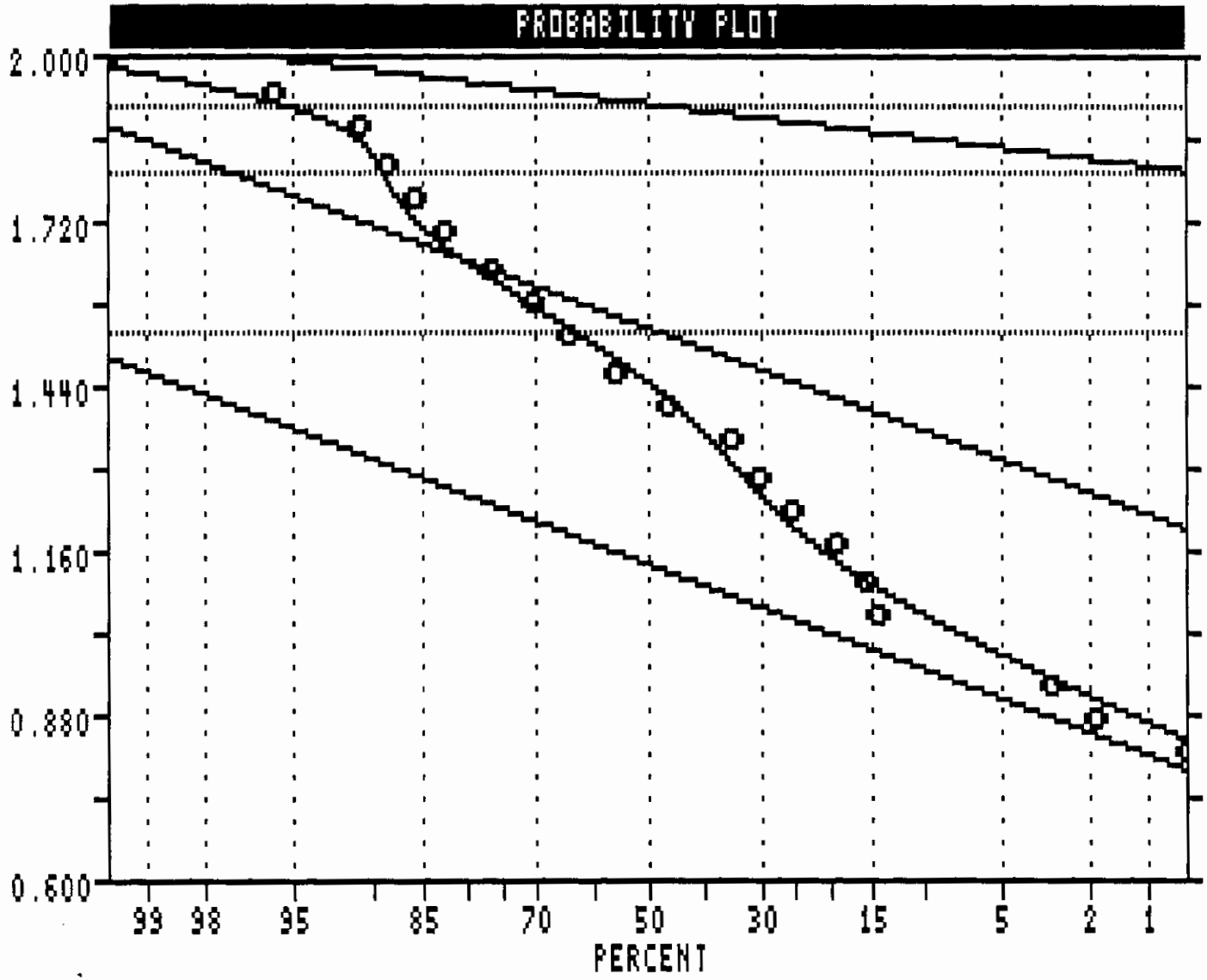
VARIABLE = Cu
UNIT = ppm
N = 81
N CI = 36

POPULATIONS

Pop.	Mean	Std.Dev.	%
1	1.1305	0.1391	35.0
2	1.5291	0.1364	55.0
3	1.9088	0.0450	10.0

USERS VISUAL
PARAMETER ESTIMATES

Blue Sheep Property



LOGARITHMIC VALUES

VARIABLE = Cu
UNIT = ppm
N = 81
N CI = 20

POPULATIONS

Pop.	Mean	Std.Dev.	%
1	1.1305	0.1391	35.0
2	1.5291	0.1364	55.0
3	1.9088	0.0450	10.0

THRESHOLDS

1.9989	1.9088
1.8020	1.5291

USERS VISUAL
PARAMETER ESTIMATES

LEAD STATISTICS

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — ARITHMETIC VALUES

Variable = Pb		Unit = ppm		N =	80
Mean =	489.600	Min =	14.000	1st Quartile =	123.000
Std. Dev. =	508.152	Max =	2802.000	Median =	331.000
CV % =	103.789	Skewness =	2.186	3rd Quartile =	663.000

%	cum %	cls int	(# of bins = 20 - bin size = 146.737)
0.00	0.62	-59.368	
10.00	10.49	87.368	********
28.75	38.89	234.105	************************
16.25	54.94	380.842	************
12.50	67.28	527.579	**********
10.00	77.16	674.316	********
5.00	82.10	821.053	****
5.00	87.04	967.789	****
2.50	89.51	1114.526	**
3.75	93.21	1261.263	***
1.25	94.44	1408.000	*
0.00	94.44	1554.737	
0.00	94.44	1701.474	
1.25	95.68	1848.211	*
0.00	95.68	1994.947	
1.25	96.91	2141.684	*
1.25	98.15	2288.421	*
0.00	98.15	2435.158	
0.00	98.15	2581.895	
0.00	98.15	2728.632	
1.25	99.38	2875.368	*

0 1 2 3 4

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — LOGARITHMIC VALUES

Variable = Pb Unit = ppm N = 80

Mean =	2.4772	Min =	1.1461	1st Quartile =	2.0899
Std. Dev. =	0.4626	Max =	3.4475	Median =	2.5198
CV % =	18.6740	Skewness =	-0.3332	3rd Quartile =	2.8215

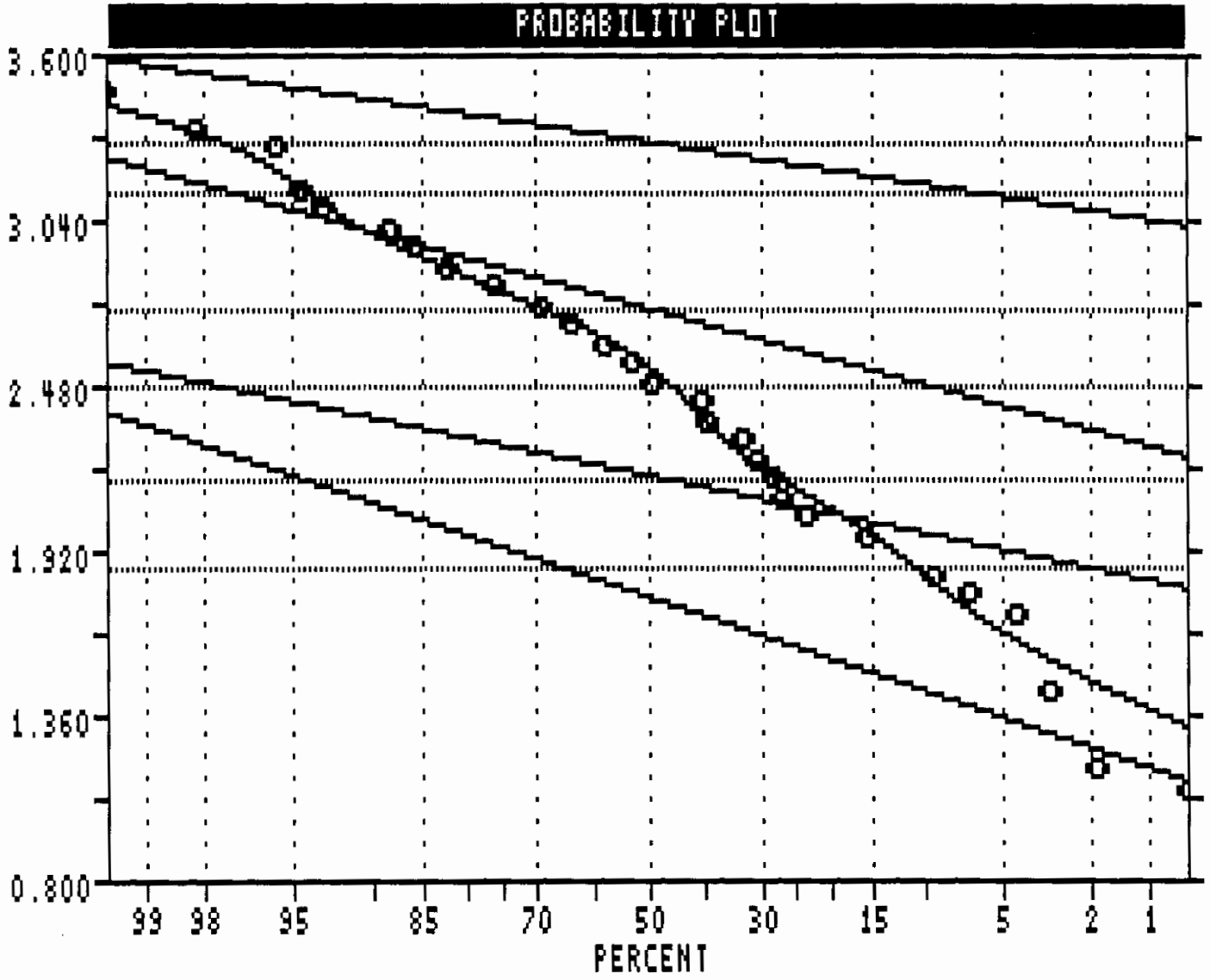
Anti-Log Mean = 300.031 Anti-Log Std. Dev. : (-) 103.414 (+) 870.469

(# of bins = 20 - bin size = 0.1211)

%	cum %	antilog	cls int	
0.00	0.62	12.178	1.0856	
1.25	1.85	16.095	1.2067	*
0.00	1.85	21.272	1.3278	
1.25	3.09	28.115	1.4489	*
0.00	3.09	37.159	1.5701	
1.25	4.32	49.111	1.6912	*
5.00	9.26	64.909	1.8123	****
1.25	10.49	85.788	1.9334	*
13.75	24.07	113.384	2.0546	**********
5.00	29.01	149.856	2.1757	****
3.75	32.72	198.061	2.2968	***
7.50	40.12	261.771	2.4179	******
11.25	51.23	345.975	2.5390	*********
10.00	61.11	457.265	2.6602	********
11.25	72.22	604.353	2.7813	*********
10.00	82.10	798.756	2.9024	********
6.25	88.27	1055.692	3.0235	*****
6.25	94.44	1395.276	3.1447	*****
1.25	95.68	1844.095	3.2658	*
2.50	98.15	2437.286	3.3869	**
1.25	99.38	3221.289	3.5080	*

0 1 2 3 4

Blue Sheep Property



LOGARITHMIC VALUES

VARIABLE = Pb
UNIT = ppm
N = 80
N CI = 36

POPULATIONS

Pop.	Mean	Std.Dev.	%
1	1.7496	0.2486	15.0
2	2.1603	0.1514	25.0
3	2.7304	0.1999	55.0
4	3.2915	0.1142	5.0

THRESHOLDS

3.2915	3.1302
2.7304	2.4632
2.1603	1.8574

USERS VISUAL
PARAMETER ESTIMATES

ZINC STATISTICS

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — ARITHMETIC VALUES

Variable = Zn Unit = ppm N = 79

Mean =	737.392	Min =	78.000	1st Quartile =	305.750
Std. Dev. =	524.819	Max =	2109.000	Median =	597.500
CV % =	71.172	Skewness =	0.925	3rd Quartile =	1032.750

%	cum %	cls int	(# of bins = 36 - bin size = 58.029)
0.00	0.63	48.986	
2.53	3.13	107.014	**
3.80	6.87	165.043	***
5.06	11.87	223.071	****
5.06	16.87	281.100	****
13.92	30.62	339.129	**********
3.80	34.38	397.157	***
7.59	41.87	455.186	******
1.27	43.12	513.214	*
6.33	49.37	571.243	*****
0.00	49.37	629.271	
6.33	55.62	687.300	*****
5.06	60.62	745.329	****
1.27	61.87	803.357	*
5.06	66.87	861.386	****
3.80	70.62	919.414	***
2.53	73.12	977.443	**
1.27	74.37	1035.471	*
5.06	79.37	1093.500	****
2.53	81.87	1151.529	**
1.27	83.12	1209.557	*
0.00	83.12	1267.586	
1.27	84.38	1325.614	*
0.00	84.38	1383.643	
1.27	85.62	1441.671	*
0.00	85.62	1499.700	
1.27	86.87	1557.729	*
0.00	86.87	1615.757	
5.06	91.87	1673.786	****
1.27	93.12	1731.814	*
0.00	93.12	1789.843	
2.53	95.62	1847.871	**
0.00	95.62	1905.900	
1.27	96.88	1963.929	*
1.27	98.12	2021.957	*
0.00	98.12	2079.986	
1.27	99.37	2138.014	*

0 1 2 3 4

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — LOGARITHMIC VALUES

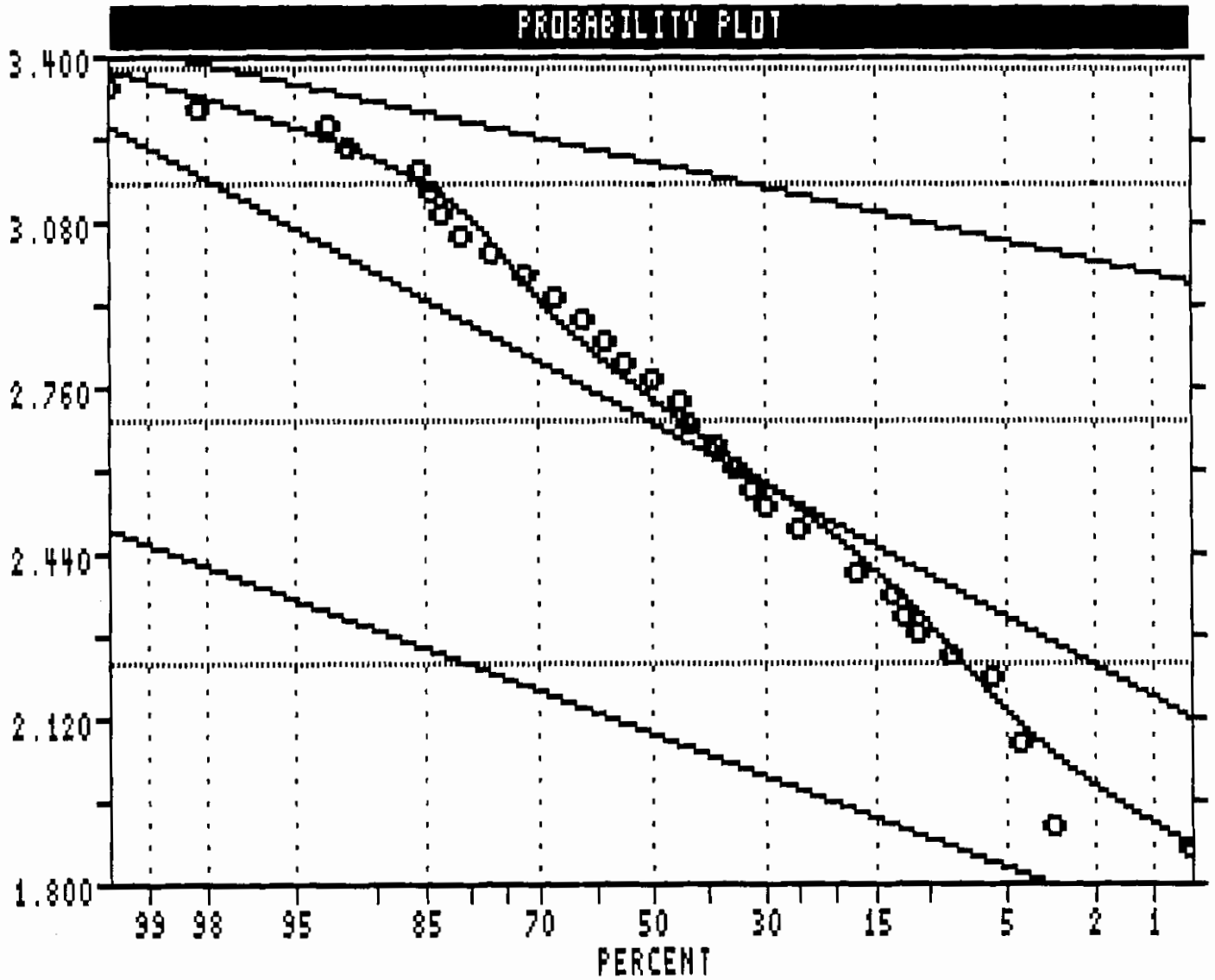
Variable = Zn Unit = ppm N = 79

Mean =	2.7491	Min =	1.8921	1st Quartile =	2.4853
Std. Dev. =	0.3415	Max =	3.3241	Median =	2.7757
CV % =	12.4223	Skewness =	-0.3342	3rd Quartile =	3.0140

Anti-Log Mean = 561.135 Anti-Log Std. Dev. : (-) 255.605 (+) 1231.872

%	cum %	antilog	cls int	(# of bins = 36 - bin size = 0.0409)
0.00	0.63	74.411	1.8716	
2.53	3.13	81.762	1.9126	**
0.00	3.13	89.839	1.9535	
0.00	3.13	98.714	1.9944	
0.00	3.13	108.466	2.0353	
1.27	4.37	119.181	2.0762	*
0.00	4.37	130.954	2.1171	
0.00	4.37	143.891	2.1580	
1.27	5.62	158.106	2.1989	*
2.53	8.12	173.725	2.2399	**
2.53	10.62	190.887	2.2808	**
1.27	11.87	209.744	2.3217	*
1.27	13.12	230.464	2.3626	*
3.80	16.87	253.231	2.4035	***
0.00	16.87	278.247	2.4444	
7.59	24.37	305.734	2.4853	******
5.06	29.37	335.937	2.5263	****
2.53	31.87	369.124	2.5672	**
2.53	34.38	405.588	2.6081	**
3.80	38.12	445.656	2.6490	***
5.06	43.12	489.681	2.6899	****
1.27	44.37	538.055	2.7308	*
5.06	49.37	591.209	2.7717	****
5.06	54.37	649.613	2.8127	****
3.80	58.12	713.786	2.8536	***
3.80	61.87	784.300	2.8945	***
5.06	66.87	861.779	2.9354	****
5.06	71.88	946.912	2.9763	****
5.06	76.87	1040.455	3.0172	****
3.80	80.62	1143.239	3.0581	***
2.53	83.12	1256.177	3.0991	**
1.27	84.38	1380.272	3.1400	*
1.27	85.62	1516.626	3.1809	*
6.33	91.87	1666.449	3.2218	*****
1.27	93.12	1831.074	3.2627	*
5.06	98.12	2011.962	3.3036	****
1.27	99.37	2210.719	3.3445	*

0 1 2 3 4



LOGARITHMIC VALUES
========== ======

VARIABLE = Zn
UNIT = ppm
N = 79
N CI = 36

POPULATIONS
==========

Pop.	Mean	Std.Dev.	%
1	2.0816	0.1562	7.0
2	2.6857	0.2298	73.0
3	3.1875	0.0922	20.0

THRESHOLDS
==========

3.3720	3.1454
2.6857	2.2261

USERS VISUAL
PARAMETER ESTIMATES

SILVER STATISTICS

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — ARITHMETIC VALUES

Variable = Ag		Unit = ppm		N =	65
Mean =	1.512	Min =	0.300	1st Quartile =	0.675
Std. Dev. =	1.275	Max =	6.200	Median =	1.100
CV % =	84.296	Skewness =	1.783	3rd Quartile =	1.700

%	cum %	cls int	(# of bins = 36 - bin size = 0.169)
0.00	0.76	0.216	
6.15	6.82	0.384	****
12.31	18.94	0.553	********
7.69	26.52	0.721	*****
6.15	32.58	0.890	****
13.85	46.21	1.059	*********
13.85	59.85	1.227	*********
3.08	62.88	1.396	**
7.69	70.45	1.564	*****
4.62	75.00	1.733	***
4.62	79.55	1.901	***
0.00	79.55	2.070	
3.08	82.58	2.239	**
1.54	84.09	2.407	*
0.00	84.09	2.576	
1.54	85.61	2.744	*
1.54	87.12	2.913	*
0.00	87.12	3.081	
3.08	90.15	3.250	**
0.00	90.15	3.419	
0.00	90.15	3.587	
0.00	90.15	3.756	
0.00	90.15	3.924	
0.00	90.15	4.093	
0.00	90.15	4.261	
3.08	93.18	4.430	**
1.54	94.70	4.599	*
1.54	96.21	4.767	*
1.54	97.73	4.936	*
0.00	97.73	5.104	
0.00	97.73	5.273	
0.00	97.73	5.441	
0.00	97.73	5.610	
0.00	97.73	5.779	
0.00	97.73	5.947	
0.00	97.73	6.116	
1.54	99.24	6.284	*

0 1 2 3 4

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — LOGARITHMIC VALUES

Variable = Ag Unit = ppm N = 65

Mean =	0.0571	Min =	-0.5229	1st Quartile =	-0.1716
Std. Dev. =	0.3237	Max =	0.7924	Median =	0.0414
CV % =	567.0711	Skewness =	0.2274	3rd Quartile =	0.2304

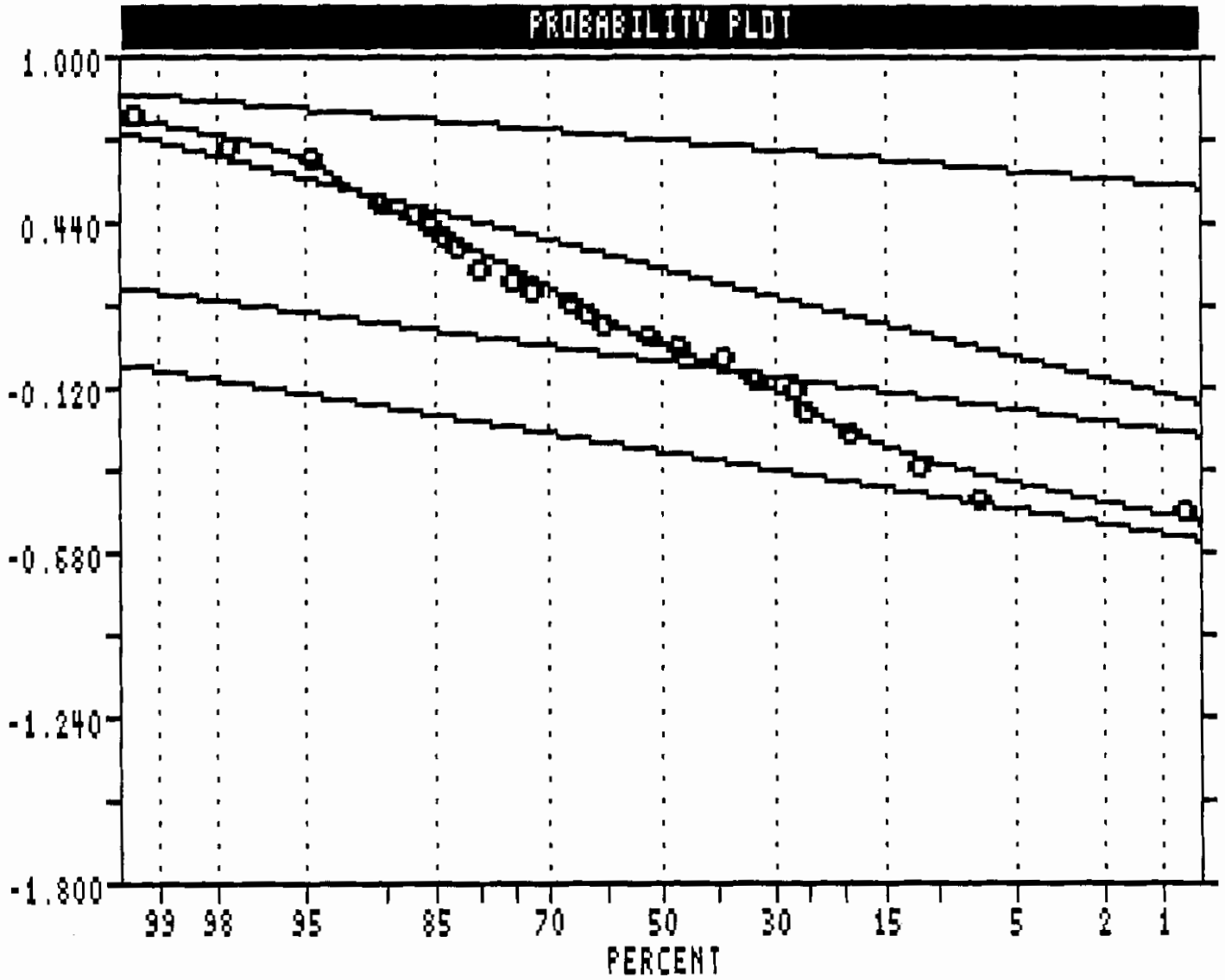
Anti-Log Mean = 1.140 Anti-Log Std. Dev. : (-) 0.541
(+) 2.403

(# of bins = 36 - bin size = 0.0376)

%	cum %	antilog	cls int	
0.00	0.76	0.287	-0.5417	
6.15	6.82	0.313	-0.5041	****
0.00	6.82	0.342	-0.4665	
0.00	6.82	0.372	-0.4289	
4.62	11.36	0.406	-0.3914	***
0.00	11.36	0.443	-0.3538	
0.00	11.36	0.483	-0.3162	
7.69	18.94	0.526	-0.2786	*****
0.00	18.94	0.574	-0.2410	
6.15	25.00	0.626	-0.2035	****
0.00	25.00	0.683	-0.1659	
1.54	26.52	0.744	-0.1283	*
6.15	32.58	0.811	-0.0907	****
0.00	32.58	0.885	-0.0531	
6.15	38.64	0.965	-0.0156	****
7.69	46.21	1.052	0.0220	*****
6.15	52.27	1.147	0.0596	****
7.69	59.85	1.251	0.0972	*****
3.08	62.88	1.364	0.1348	**
3.08	65.91	1.487	0.1723	**
6.15	71.97	1.621	0.2099	****
3.08	75.00	1.768	0.2475	**
4.62	79.55	1.928	0.2851	***
0.00	79.55	2.102	0.3227	
3.08	82.58	2.292	0.3602	**
1.54	84.09	2.499	0.3978	*
1.54	85.61	2.725	0.4354	*
1.54	87.12	2.971	0.4730	*
3.08	90.15	3.240	0.5105	**
0.00	90.15	3.533	0.5481	
0.00	90.15	3.852	0.5857	
0.00	90.15	4.200	0.6233	
4.62	94.70	4.580	0.6609	***
3.08	97.73	4.994	0.6984	**
0.00	97.73	5.445	0.7360	
0.00	97.73	5.937	0.7736	
1.54	99.24	6.474	0.8112	*

0 1 2 3 4

Blue Sheep Property



LOGARITHMIC VALUES

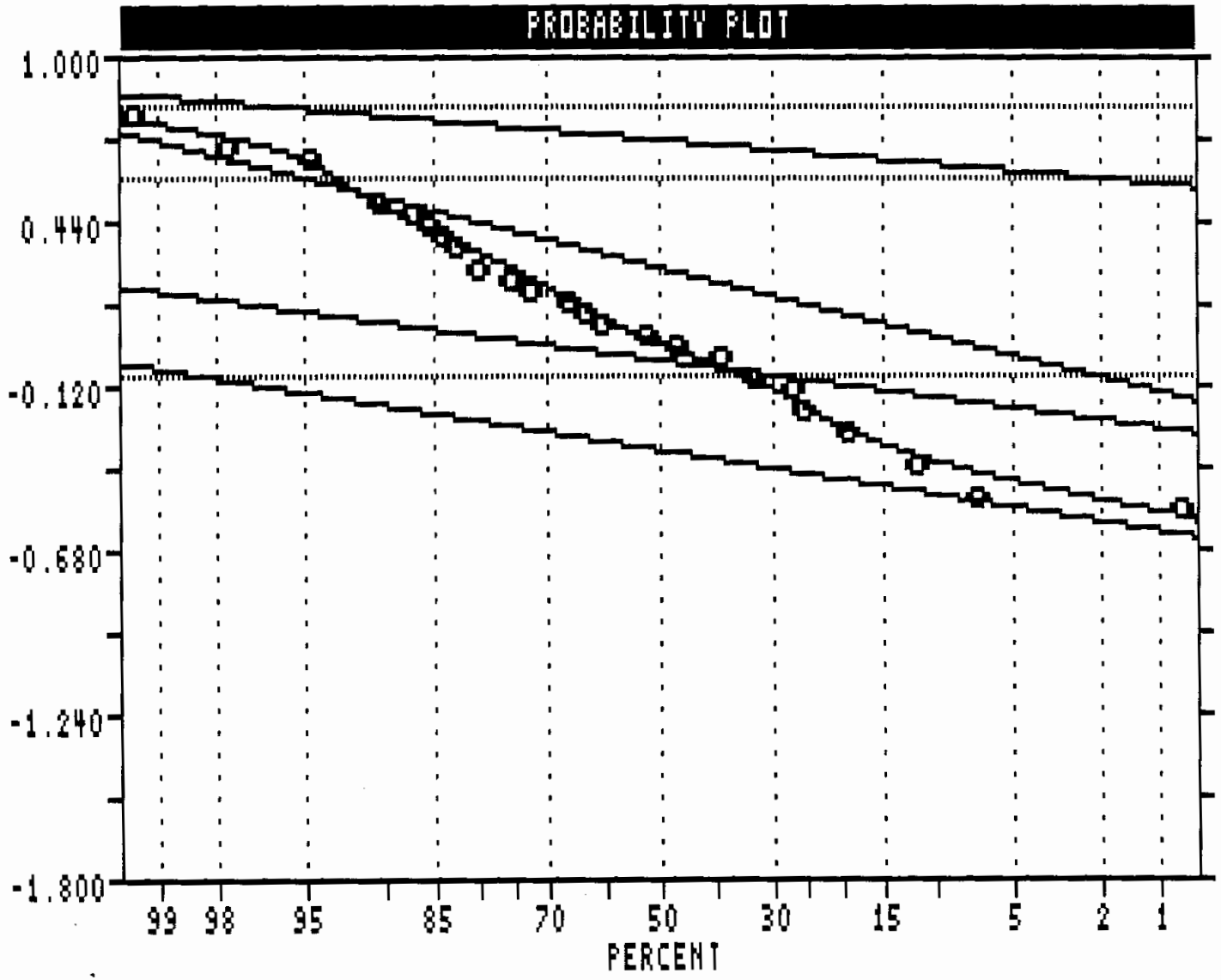
VARIABLE = Ag
UNIT = ppm
N = 65
N CI = 36

POPULATIONS

Pop.	Mean	Std.Dev.	%
1	-0.3549	0.1165	25.0
2	-0.0389	0.1008	30.0
3	0.2787	0.1830	40.0
4	0.6997	0.0629	5.0

USERS VISUAL
PARAMETER ESTIMATES

Blue Sheep Property



LOGARITHMIC VALUES

VARIABLE = Ag
UNIT = ppm
N = 65
N CI = 36

POPULATIONS

Pop.	Mean	Std.Dev.	%
1	-0.3549	0.1165	25.0
2	-0.0389	0.1008	30.0
3	0.2787	0.1830	40.0
4	0.6997	0.0629	5.0

THRESHOLDS

0.8255 0.5740
-0.0873

USERS VISUAL
PARAMETER ESTIMATES

ARSENIC STATISTICS

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — ARITHMETIC VALUES

Variable = As Unit = ppm N = 80

Mean =	130.087	Min =	6.000	1st Quartile =	42.000
Std. Dev. =	134.632	Max =	658.000	Median =	74.000
CV % =	103.493	Skewness =	1.889	3rd Quartile =	204.000

(# of bins = 20 - bin size = 34.316)

%	cum %	cls int	
0.00	0.62	-11.158	
10.00	10.49	23.158	********
26.25	36.42	57.474	**********
22.50	58.64	91.789	**********
7.50	66.05	126.105	******
5.00	70.99	160.421	****
3.75	74.69	194.737	***
6.25	80.86	229.053	*****
6.25	87.04	263.368	*****
1.25	88.27	297.684	*
2.50	90.74	332.000	**
1.25	91.98	366.316	*
3.75	95.68	400.632	***
0.00	95.68	434.947	
1.25	96.91	469.263	*
0.00	96.91	503.579	
0.00	96.91	537.895	
0.00	96.91	572.211	
0.00	96.91	606.526	
1.25	98.15	640.842	*
1.25	99.38	675.158	*

0 1 2 3 4

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — LOGARITHMIC VALUES

Variable = As Unit = ppm N = 80

Mean =	1.9106	Min =	0.7782	1st Quartile =	1.6232
Std. Dev. =	0.4346	Max =	2.8182	Median =	1.8692
CV % =	22.7482	Skewness =	-0.0334	3rd Quartile =	2.3096

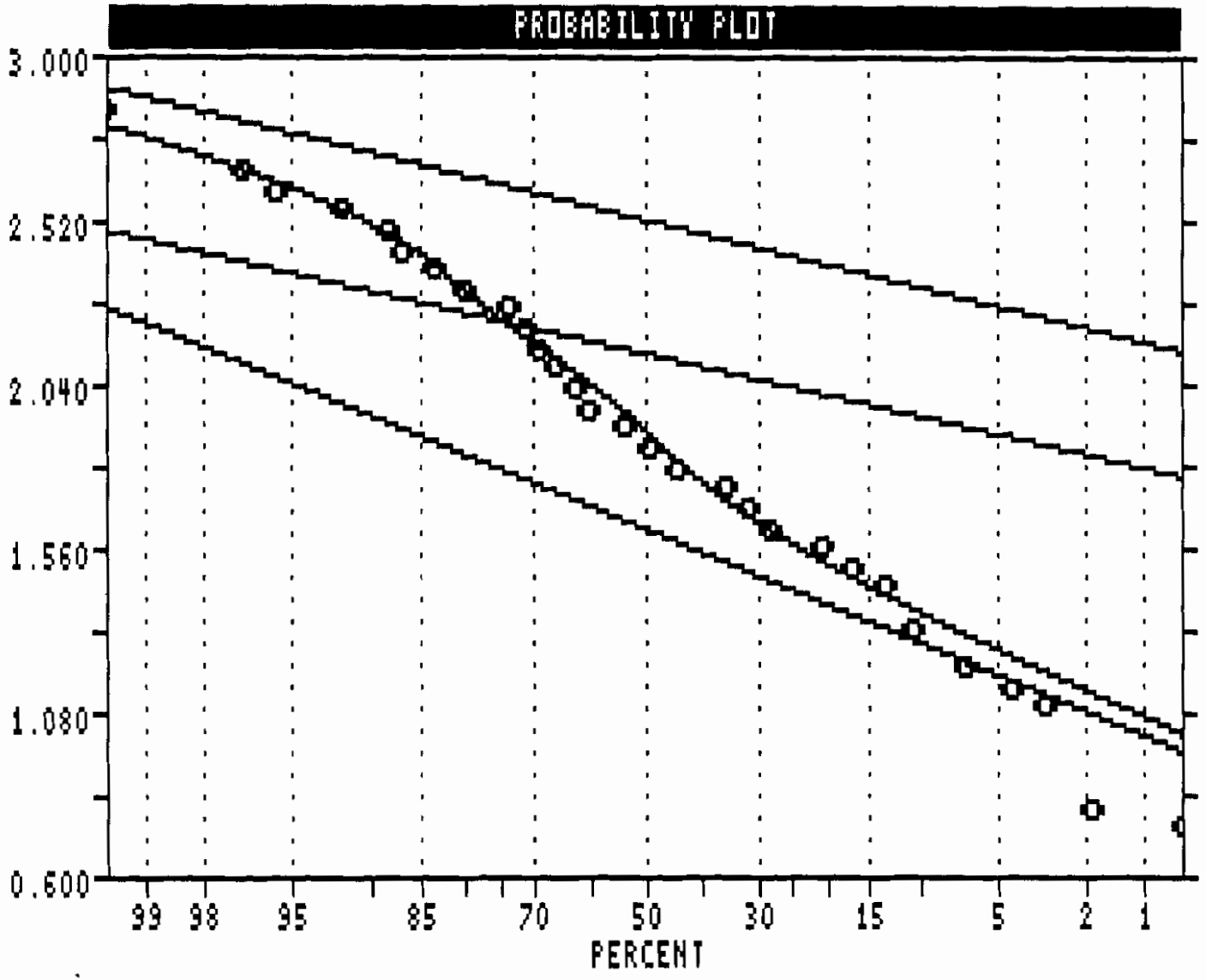
Anti-Log Mean = 81.400 Anti-Log Std. Dev. : (-) 29.922
(+) 221.441

(# of bins = 20 - bin size = 0.1074)

%	cum %	antilog	cls int	
0.00	0.62	5.302	0.7245	
1.25	1.85	6.789	0.8318	*
0.00	1.85	8.694	0.9392	
1.25	3.09	11.132	1.0466	*
1.25	4.32	14.255	1.1540	*
2.50	6.79	18.253	1.2613	**
3.75	10.49	23.372	1.3687	***
5.00	15.43	29.928	1.4761	****
6.25	21.60	38.322	1.5834	*****
10.00	31.48	49.070	1.6908	********
12.50	43.83	62.833	1.7982	**********
10.00	53.70	80.456	1.9056	********
8.75	62.35	103.023	2.0129	*******
3.75	66.05	131.918	2.1203	***
5.00	70.99	168.919	2.2277	****
10.00	80.86	216.297	2.3351	********
7.50	88.27	276.964	2.4424	******
3.75	91.98	354.646	2.5498	***
5.00	96.91	454.117	2.6572	****
0.00	96.91	581.487	2.7645	
2.50	99.38	744.581	2.8719	**

0 1 2 3 4

Blue Sheep Property



LOGARITHMIC VALUES

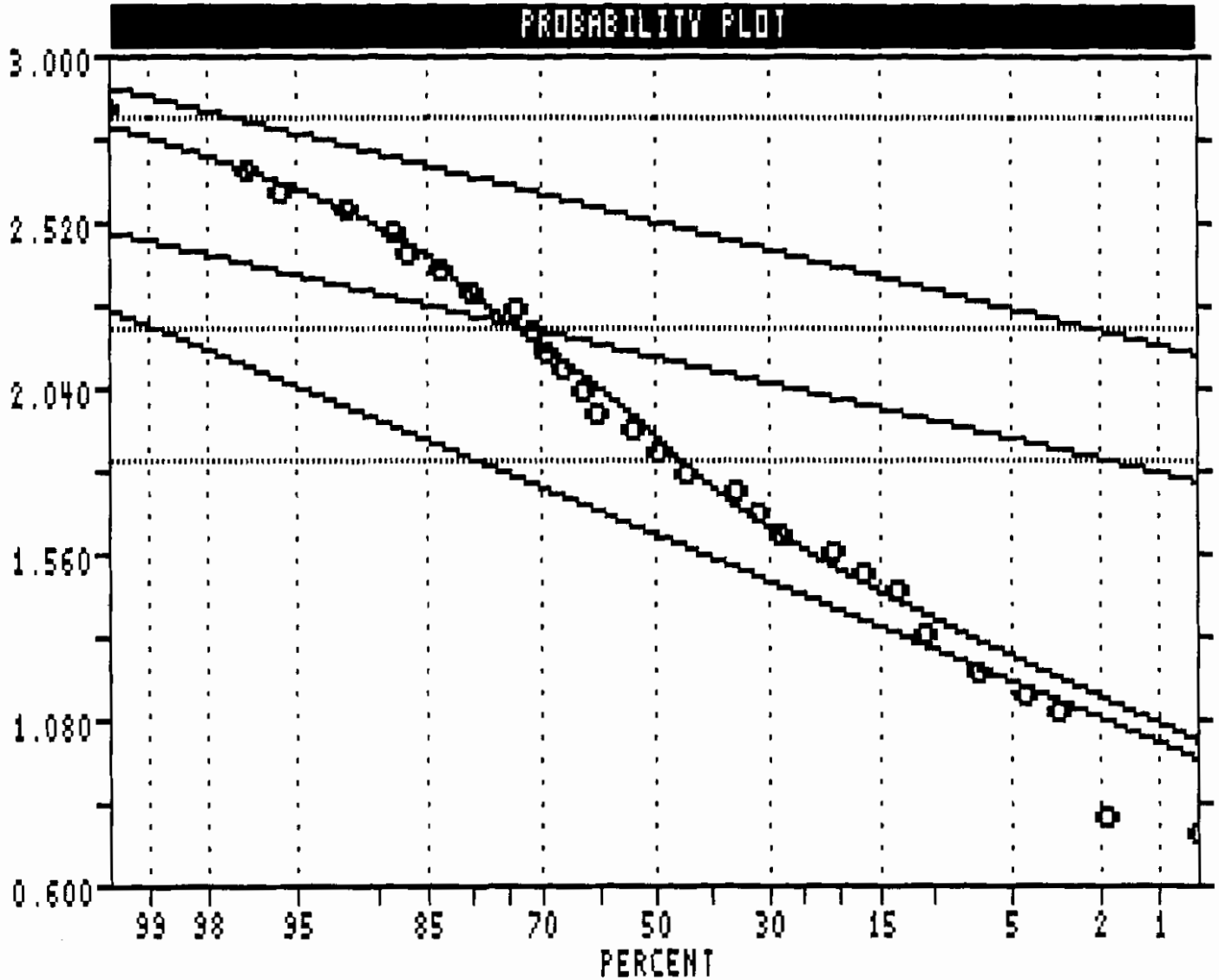
VARIABLE = As
UNIT = ppm
N = 80
N CI = 36

POPULATIONS

Pop.	Mean	Std.Dev.	%
1	1.6043	0.2584	55.0
2	2.1182	0.1440	25.0
3	2.5084	0.1521	20.0

USERS VISUAL
PARAMETER ESTIMATES

Blue Sheep Property



LOGARITHMIC VALUES

VARIABLE = As
UNIT = ppm
N = 80
N CI = 36

POPULATIONS

Pop.	Mean	Std.Dev.	%
1	1.6043	0.2584	55.0
2	2.1182	0.1440	25.0
3	2.5084	0.1521	20.0

THRESHOLDS

2.8126 2.2042
1.8302

USERS VISUAL
PARAMETER ESTIMATES

GOLD STATISTICS

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — ARITHMETIC VALUES

Variable = Au Unit = ppb N = 76

Mean =	11.434	Min =	1.000	1st Quartile =	2.000
Std. Dev. =	37.868	Max =	279.000	Median =	3.000
CV % =	331.178	Skewness =	5.638	3rd Quartile =	5.000

%	cum %	cls int	(# of bins = 19 - bin size = 15.444)
0.00	0.65	-6.722	
86.84	86.36	8.722	********** --> 66
7.89	94.16	24.167	******
1.32	95.45	39.611	*
0.00	95.45	55.056	
0.00	95.45	70.500	
0.00	95.45	85.944	
0.00	95.45	101.389	
0.00	95.45	116.833	
1.32	96.75	132.278	*
1.32	98.05	147.722	*
0.00	98.05	163.167	
0.00	98.05	178.611	
0.00	98.05	194.056	
0.00	98.05	209.500	
0.00	98.05	224.944	
0.00	98.05	240.389	
0.00	98.05	255.833	
0.00	98.05	271.278	
1.32	99.35	286.722	*

0 1 2 3 4

Blue Sheep Property

SUMMARY STATISTICS and HISTOGRAM — LOGARITHMIC VALUES

Variable = Au Unit = ppb N = 76

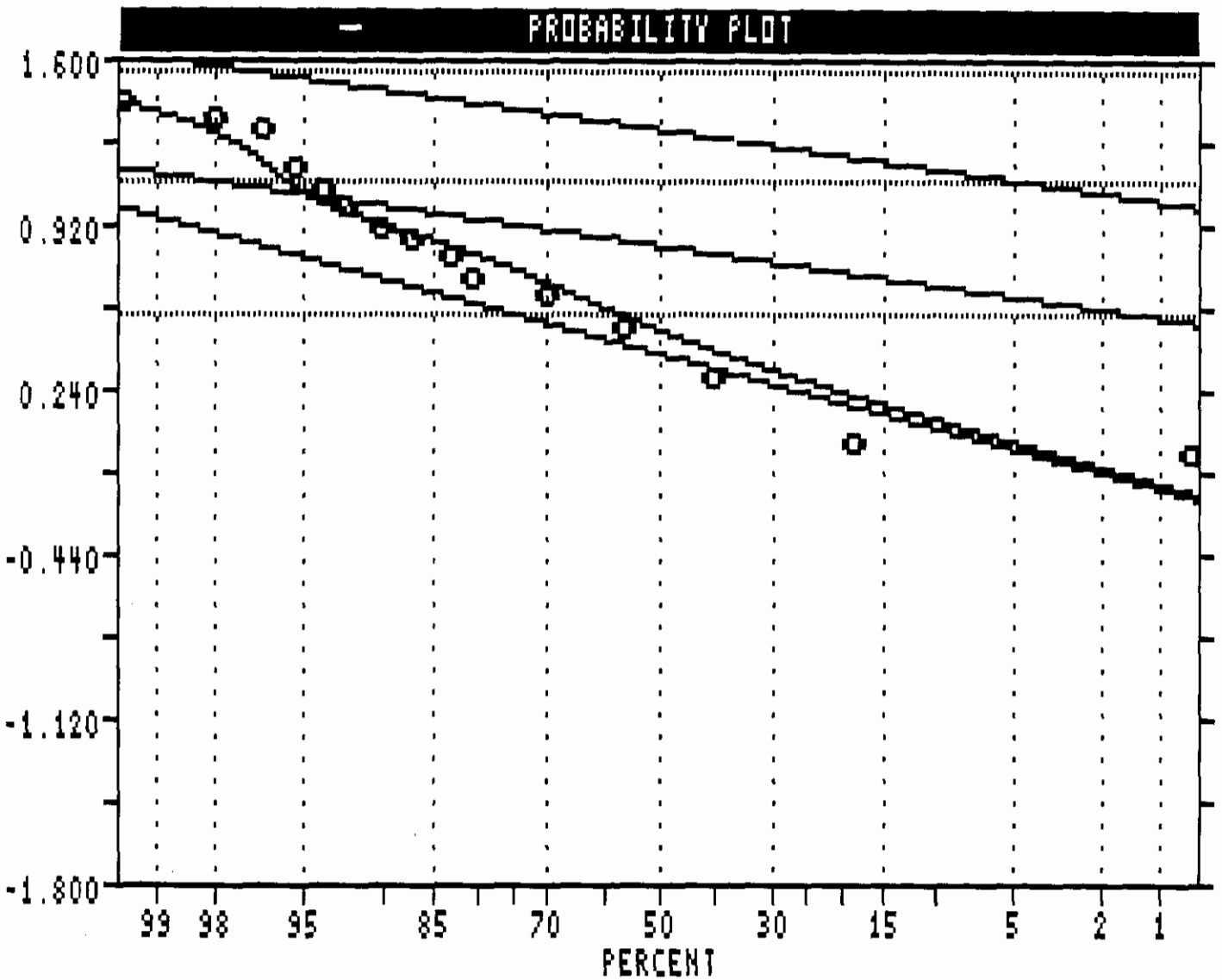
Mean =	0.5640	Min =	0.0000	1st Quartile =	0.3010
Std. Dev. =	0.4787	Max =	2.4456	Median =	0.4771
CV % =	84.8721	Skewness =	1.6740	3rd Quartile =	0.6990

Anti-Log Mean = 3.664 Anti-Log Std. Dev. : (-) 1.217 (+) 11.032

%	cum %	antilog	cls int	(# of bins = 19 - bin size = 0.1359)
0.00	0.65	0.855	-0.0679	
17.11	17.53	1.169	0.0679	**********
0.00	17.53	1.599	0.2038	
21.05	38.31	2.186	0.3397	**********
0.00	38.31	2.989	0.4755	
28.95	66.88	4.087	0.6114	**********
10.53	77.27	5.588	0.7473	********
6.58	83.77	7.641	0.8831	*****
5.26	88.96	10.447	1.0190	****
2.63	91.56	14.285	1.1549	**
0.00	91.56	19.531	1.2907	
3.95	95.45	26.706	1.4266	***
0.00	95.45	36.515	1.5625	
0.00	95.45	49.927	1.6983	
0.00	95.45	68.266	1.8342	
0.00	95.45	93.340	1.9701	
0.00	95.45	127.625	2.1059	
2.63	98.05	174.503	2.2418	**
0.00	98.05	238.600	2.3777	
1.32	99.35	326.240	2.5135	*

0 1 2 3 4

Blue Sheep Property



LOGARITHMIC VALUES

VARIABLE = Au
UNIT = ppb
N = 73
N CI = 36

POPULATIONS

Pop.	Mean	Std.Dev.	%
1	0.3755	0.2420	75.0
2	0.8186	0.1308	21.0
3	1.2880	0.1262	4.0

THRESHOLDS

1.5404 1.0801
0.5571

USERS VISUAL PARAMETER ESTIMATES

DATA CORRELATION ANALYSIS

DATE : 11-05-96
TIME : 09:03:40

NORTHWEST GEOLOGICAL CONSULTING LTD.

BLUE SHEEP PROPERTY

NORMAL DATA CORRELATION ANALYSIS

BASED ON PEARSON CORRELATION MATRIX

using data for years >> 96,
using all traverses

PRIMARY FIELDS

ALL DATA

	Cu Acme	Pb Acme	Zn Acme	Ag Acme	As Acme	Au Acme
Cu	1.000					
# SAMPLES	81					
Pb	0.729	1.000				
# SAMPLES	81	81				
Zn	0.630	0.797	1.000			
# SAMPLES	81	81	81			
Ag	0.641	0.654	0.564	1.000		
# SAMPLES	70	70	70	70		
As	0.331	0.354	0.281	0.743	1.000	
# SAMPLES	81	81	81	70	81	
Au	0.438	0.370	0.293	0.738	0.581	1.000
# SAMPLES	75	75	75	66	75	75

DATE : 11-05-96
TIME : 09:03:41

NORTHWEST GEOLOGICAL CONSULTING LTD.

BLUE SHEEP PROPERTY

LOG-TRANSFORMED DATA CORRELATION ANALYSIS

BASED ON PEARSON CORRELATION MATRIX

using data for years >> 96,
using all traverses

PRIMARY FIELDS

ALL DATA

	Cu Acme	Pb Acme	Zn Acme	Ag Acme	As Acme	Au Acme
Cu	1.000					
# SAMPLES	81					
Pb	0.385	1.000				
# SAMPLES	81	81				
Zn	0.385	0.792	1.000			
# SAMPLES	81	81	81			
Ag	0.229	0.341	0.199	1.000		
# SAMPLES	70	70	70	70		
As	0.333	0.593	0.326	0.357	1.000	
# SAMPLES	81	81	81	70	81	
Au	0.241	0.206	0.082	0.579	0.499	1.000
# SAMPLES	75	75	75	66	75	75

DATE : 11-05-96
TIME : 09:03:41

NORTHWEST GEOLOGICAL CONSULTING LTD.

BLUE SHEEP PROPERTY

NORMAL DATA CORRELATION ANALYSIS

PRIMARY FIELDS

SLOPE AND INTERCEPT PARAMETERS

ALL DATA

Y-AXIS ==>		Cu Acme	Pb Acme	Zn Acme	Ag Acme	As Acme	Au Acme
X-AXIS							
M--->	Cu	1.000					
B--->	Cu	0.000					
M--->	Pb	0.034	1.000				
B--->	Pb	17.578	0.000				
M--->	Zn	0.030	0.822	1.000			
B--->	Zn	11.581	-121.224	0.000			
M--->	Ag	5.987	128.422	111.366	1.000		
B--->	Ag	22.672	281.911	583.472	0.000		
M--->	As	0.037	0.855	0.658	0.009	1.000	
B--->	As	30.153	415.696	720.213	0.890	0.000	
M--->	Au	0.444	7.993	6.418	0.080	5.162	1.000
B--->	Au	32.226	494.370	758.807	1.764	126.111	0.000

DATE : 11-05-96
TIME : 09:03:41

NORTHWEST GEOLOGICAL CONSULTING LTD.

BLUE SHEEP PROPERTY

LOG-TRANSFORMED DATA CORRELATION ANALYSIS

PRIMARY FIELDS

SLOPE AND INTERCEPT PARAMETERS

ALL DATA

Y-AXIS ==>		Cu Acme	Pb Acme	Zn Acme	Ag Acme	As Acme	Au Acme
X-AXIS							
M--->	Cu	0.000					
B--->	Cu	1.000					
M--->	Pb	1.954	0.000				
B--->	Pb	0.240	1.000				
M--->	Zn	1.312	-0.929	0.000			
B--->	Zn	0.316	1.046	1.000			
M--->	Ag	3.272	5.657	6.301	0.000		
B--->	Ag	0.318	0.735	0.489	1.000		
M--->	As	2.393	3.068	5.269	-0.629	0.000	
B--->	As	0.210	0.599	0.250	0.210	1.000	
M--->	Au	3.020	5.295	6.162	-0.323	3.742	0.000
B--->	Au	0.251	0.363	0.155	0.507	0.638	1.000

Appendix C

ROCK SAMPLE DESCRIPTIONS

Blue Sheep Property Rock Sample Descriptions

Sample Number	Description
US96BS001	white, bleached rock (breccia?) with mariposite and trace galena
US96BS002	pyrite and magnetite bearing, grey quartz porphyry fragments in polymictic breccia
US96BS003	pale brown weathering, pale grey-green, pyritic, quartz-feldspar porphyry
US96BS004	pale brown weathering, thinly laminated, siliceous hornfels (phyllite?)
US96BS005	beige weathering, aplite
US96BS006	grey phyllite taken as a comparison of the bleached hornfels
US96BS007	white, amygdaloidal intrusive?, dyke?, a massive textured rock in outcrop, some amygdules are calcite filled, some fragments evident
US96BS008	chocolate brown weathering fragment taken from polymictic breccia, appears to be an altered basic dyke fragment
US96BS009	chocolate brown weathering, grey-green basic lamprophyre, weak alteration, magnetic
US96BS010	white altered breccia made up primarily of matrix, mariposite in matrix

US96BS011 to US96BS013 talus fragments

Appendix D

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Uwe Schmidt, of 656 Foresthill Place, Port Moody, B.C. do hereby declare:

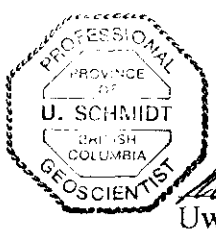
(1) I am a consulting geologist and controlling shareholder of Northwest Geological Consulting Ltd.

(2) I am a 1971 graduate of the University of British Columbia with a B.Sc. degree in Geology.

(3) I am a member of The Association of Professional Engineers and Geoscientists of British Columbia and a Fellow of the Geological Association of Canada.

(4) I have practised my profession continuously since graduation.

(5) This report is based on work carried out by me or by workers under my supervision.



Uwe Schmidt, B. Sc., P. Geo.

November 8, 1996
Port Moody, B.C.

LEGEND

AGE UNKNOWN

l ❑ Gabbroic Lamprophyre dykes:
red-brown weathering, magnetite bearing, dark green dykes and sills; also occurs as pale brown, carbonate altered fragments in Breccia unit

Breccia

bxp ❑ Polymictic Breccia: breccia with shale and phyllite fragments
bxw ❑ White Breccia: white (kaolinized?) matrix, +/- mariposite
bxg ❑ Green Breccia: pale green (chloritic?) matrix
bxf ❑ Flow-Banded Breccia: pale green matrix, flow-banded texture

CRETACEOUS?

Igneous Rocks
aplite and porphyritic dykes and sills

a ❑ Aplite: beige to pale brown weathering
qfp ❑ Feldspar-Quartz Porphyry: kaolinized dykes and sills
ac ❑ Amygdaloidal, Calcareous Intrusive: white, kaolinized?

UPPER CAMBRIAN TO LOWER ORDOVICIAN

€OK KECHIKA GROUP:
argillaceous limestone, calcareous shale, limestone, shale

Kp ❑ Phyllite: silver-grey phyllite with quartz-carbonate segregations parallel to foliation
Kph ❑ Phyllitic Hornfels: beige to pale brown weathering, thinly laminated, siliceous
Kmh ❑ Massive Hornfels: beige to pale brown weathering, pyritic, with fine grained, altered fragments?

Symbols

Geological Boundary: defined, inferred, assumed

Fault: defined, inferred

Foliation: vertical, inclined

outcrop, sub-outcrop

rock sample location: bedrock, float (sample no.)

mineralized occurrence:
py pyrite
gn galena

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,764

ATNA RESOURCES LTD.			
Blue Sheep Property GEOLOGY			
Northwest Geological Consulting Ltd.			
Scale	NTS	Date	Fig.
1:1000	104 I/16	Nov. 96	3