84-#965-1181

A.M. explo

exploration Itd. GEOLOGY · GEOPHYSICS MINING ENGINEERING

> Suite 214-850 WEST HASTINGS STREET, VANCOUVER, B.C. TELEPHONE (604) 681-0191 V6C 1E1

ASSESSMENT REPORT

DESCRIBING GEOPHYSICAL SURVEYS AND TRENCHING

on the

GISCOME PROPERTY

(GIS CLAIMS)

Cariboo Mining Division - British Columbia

N.T.S. 9**2**J/1

Lat. 54⁰ 17' N.

GEOLOGICAL BRANCH ASSESSMENT REPORT

LINK RESOURCES INC.

by

Donald G. Allen, P. Eng. (B.C.) Douglas R. MacQuarrie, B. Sc.



October 25, 1984

Vancouver, B. C.

TABLE OF CONTENTS

Ì

1

SUMMARY	17
CONCLUSION	2 /
RECOMMENDATIONS	3 /
ESTIMATED COSTS OF RECOMMENDATIONS	4 /
INTRODUCTION	5/
LOCATION, ACCESS, PHYSIOGRAPHY	6,
CLAIM DATA	7 /
HISTORY	7 /
GEOLOGY	9 /
Regional Geology	9 /
Property Geology	10 🤇
Mineralization	11/
GEOCHEMISTRY	13/
RESULTS OF PREVIOUS GEOPHYSICAL SURVEYS	14 /
RESULTS OF 1984 WORK PROGRAM	17
REFERENCES	
CERTIFICATES	

ILLUSTRATIONS

Figure 1	Location Map	1:10,000,000	After page	6 (
Figure 2	Access Map	1:250,000	After page	6 /
Figure 3	Claim Map	1:50,000	After page	7
Figure 4	Geological Map	1:10,000	In pocket	/
Figure 5	Compilation Map	1:10,000	In pocket .	1
Figure 6	Genie SE-88 Survey Grid & Trench Locations	1:5,000	After page	17 /
Figure 7	Genie SE-88 HEM Profile:: Grid 78-11	1:5,000	In pocket	\checkmark

TABLE OF CONTENTS (cont.)

APPENDICES

Appendix IInstrument SpecificationsAppendix IIAnalytical ResultsAppendix IIIAffidavit of Expenses

SUMMARY

Link Resources Incorporated holds a 95% interest in 5 claims (GIS 1 to 5) totalling 67 claim units in the Giscome area of central British Columbia. The property is situated 33 kilometres northeast of Prince George and is accessible by road.

The GIS claims were staked to cover skarn type silverlead-zinc mineralization and a number of known geophysical and geochemical anomalies. Previous work has outlined a mineralized skarn zone 1 to 3 metres wide and about 100 metres long. Silver values up to 7.9 oz/ton, zinc values of up to 10.5% and lead values of up to 10.2% have been obtained. The claims are underlain by metamorphic rocks of the Wolverine Complex, sedimentary rocks (limestone and argillite) and volcanic rocks (andesite flows and tuffs) of the Slide Mountain Group and a variety of intrusive rocks including serpentinite, gabbro, diorite, dacite, granite and felsite.

The property was formerly held by Shell Resources Ltd. who conducted regional airborne electromagneitic surveys in 1978 searching for volcanogenic massive sulfide deposits. Electromagnetic anomalies in the vicinity of the GIS claims were staked and followed-up with line cutting, geochemical and geological surveys. Numerous geochemical anomalies and electromagnetic conductors were outlined and about 1500 feet of diamond drilling undertaken in five holes. Results of

drilling are not known. Apparently, little mineralization of interest was intersected because the drilling work was not filed to maintain the claim in good standing. A possible factor is that Shell Resources subsequently eliminated their mineral exploration division. A brief examination of the core on the property (although in somewhat of a state of disarray) revealed the presence of graphitic argillite with local bedded to massive pyrite and skarny limestone containing galena and pyrite mineralization.

Evaluation of the geological setting and geochemical and geophysical anomalies outlined by Shell Resources indicates the presence of a number of untested areas of interest.

In 1984 a program of electromagnetic surveys followed by trenching was carried out. Results of this work are presented in this report.

CONCLUSION

The GIS property is considered to have excellent potential for hosting volcanogenic silver-lead-zinc deposits. This is indicated by the presence of andesitic flows, tuffs and breccias, graphitic argillite and associated electromagnetic conductors. Previous drilling has not tested this potential and trenching in 1984 did not reach bedrock.

Although the known skarn type silver-lead-zinc mineralization has been tested by drilling, a limestone-andesite

contact with associated electromagnetic anomalies could host additional skarn-type as well as stratabound deposits. Significant zinc geochemical anomalies lie immediately to the south of this contact.

The geological environment is also favourable for stratabound precious metal mineralization but this potential has not been investigated except where mercury geochemical surveys (as a guide for precious metal) over a limited area in the western point of the claims have outlined a number of anomalies.

RECOMMENDATIONS

A two-phase exploration program is recommended to test the GIS property. Phase I is designed to carry out 1) geochemical sampling to confirm and fully outline previous known anomalies and to check for precious metals; and 2) gravity surveys over electromagnetic conductors, geochemical anomalies, and favourable rock types. Phase II, contingent on results of Phase I, will consist of follow-up diamond drilling on the targets outlined. Estimated costs of Phase I and Phase II are \$34,000 and \$91,000 respectively, for a grand total of \$125,000.

Donald & alle

ESTIMATED COSTS OF RECOMMENDATIONS

÷

Phase I Geological Mapping, geological sampling, geophysical surveys.

Salaries

6,000 \$ Geologist 1 month @ \$6,000 3,000 Assistant sampler 1 month @ \$3,000 Geophysical Surveys 10 line kilometres @ \$900 all incl. 9,000 Gravity Geochemical Analyses and Assay 5,000 Material and Supplies 1,000 Room and Board 60 man days @ \$40 2,400 Travel, Vehicle Rental 1,500 3,000 Base map, Orthophoto \$ 30,900

Conting	 3,100		
Total	Phase	Ι	34,000

Phase II Diamond Drilling

	building and drill preparation 50 hrs @\$100/hr	
5100	(all incl.)	\$ 5,000
Drilling	2,000 ft. @ \$35 all incl.	70,000
Supervision, Ass	ay	7,500
		\$ 82,500
	Contingencies	8,500
	Total Phase II	\$ 91,000
	Grand Total	\$125,000

INTRODUCTION

Link Resources Incorporated holds 5 claims totalling 67 claim units in the Giscome area of central British Columbia. The claims were staked to cover a skarn-type silver-lead-zinc prospect and a number of geophysical anomalies and geochemical anomalies which indicate the possible presence of stratabound or volcanogenic massive sulfide deposits.

Considerable work including diamond drilling has been carried out on the known skarn-type deposit which occurs in the northwestern part of the claim group. This work has outlined silver-lead-zinc mineralization over a length of about 100 metres and a width of 1 to 3 metres. This zone is enveloped by weaker disseminated mineralization. Grades range up to 7.9 oz/ton silver, 7.3% zinc and 4.6% lead.

Shell Canada Resources Limited conducted an airborne electromagnetic survey in 1978, searching for stratabound volcanogenic massive sulfides. Interesting anomalies were detected in the vicinity of the GIS claims and a large area comprising the Eagle group was staked. Follow-up work by Shell included extensive line cutting, soil sampling and ground electromagnetic and magnetic surveys. Numerous coincident electromagnetic and multi-element geochemical anomalies were located and some 14 drill holes were proposed, of which 5 (totalling about 1500 feet) were drilled in 1979. Apparently, results of drilling were not encouraging because

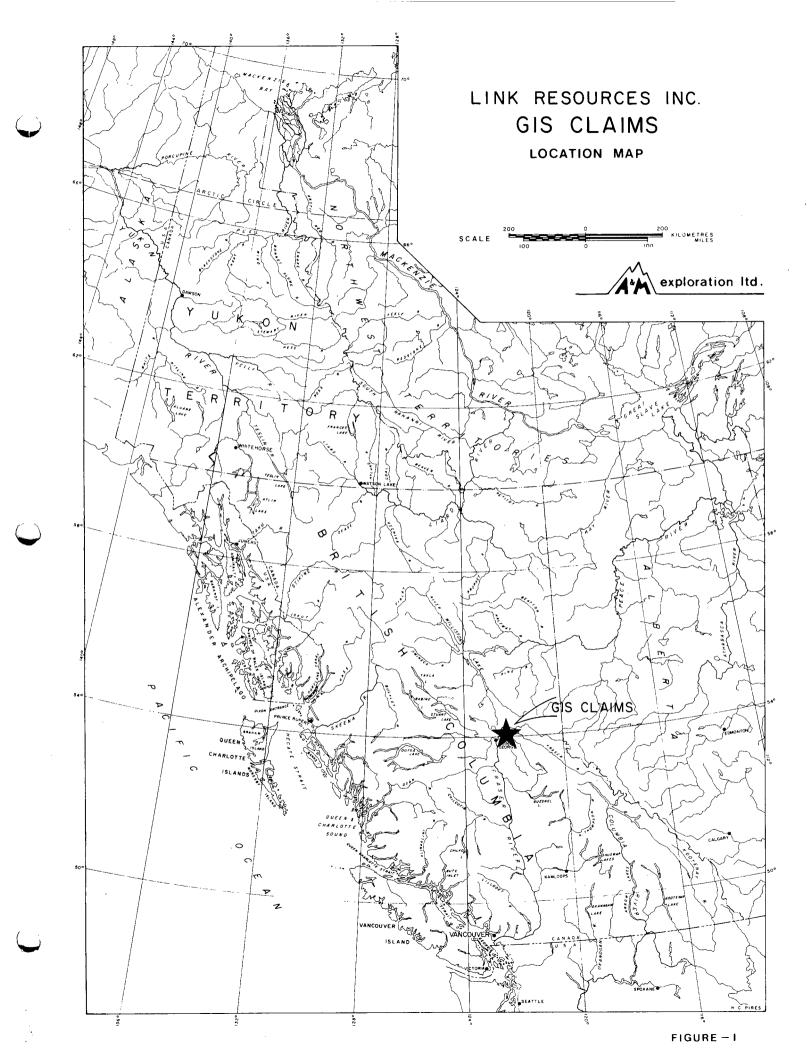
results were not submitted for assessment purposes. However, Shell Resources subsequently eliminated their mineral exploration division and may not have fully tested the property.

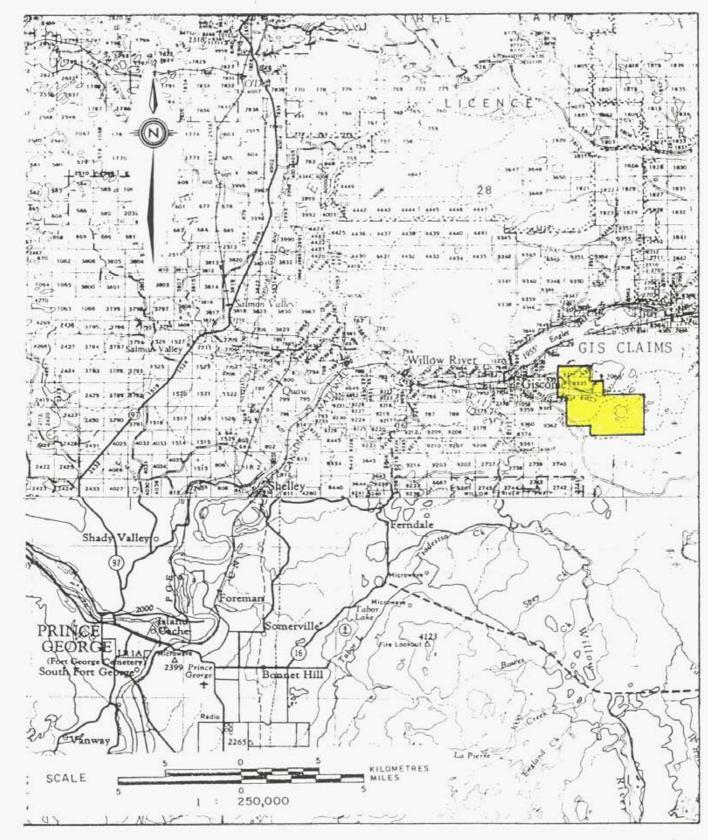
This report summarizes results of previous work as well as results of electromagnetic surveys and trenching carried out by Link Resources Inc. during the period July 29 to August 7, 1984.

LOCATION, ACCESS, PHYSIOGRAPHY

The GIS claims are situated four kilometres east of Giscome and 35 kilometres northeast of Prince George (Figures 1 and 2). Access is by paved and logging roads, about 0.7 hours drive from Prince George.

The claims are in the Interior Plateau of central British Columbia and lie on the south side of Eaglet Lake and the north side of Bateman Creek. Physiography is characterized by low, rolling hills separated by marshy areas. Elevations range from 650 to 900 metres (2,200 to 2,900 feet). Vegetation consists of immature to mature stands of balsam fir and Sitka Spruce with a light to moderate undergrowth of alder and willow. Parts of the claim area have been logged.





LINK RESOURCES INC. ACCESS MAP

N. T. S. 93 J

GIS CLAIMS

Cariboo Mining Division - British Columbia



CLAIM DATA

The GIS claims comprise 67 claim units. They are registered in the name of S. Travis but have been transferred to Link Resources Inc. S. Travis retains a 5% interest in the property.

Claim boundaries are plotted on Figure 3. Claim data are as follows:

Claim Nam	e <u>Record Number</u>	Anniversary Date
GIS 1	5048 (8)	August 5, 1985
GIS 2	5049 (8)	August 5, 1985
GIS 3	5050 (8)	August 5, 1985
GIS 4	5843 (3)	March 5, 1986
GIS 5	5844 (3)	March 5, 1986

HISTORY

History of the Giscome property up to 1970 was summarized by Allen (1973) who stated that:

> "Base metal mineralization was discovered in late 1942 by J.H. Gerlitzki while prospecting near Giscome for a reportedly highgrade gold occurrence. In 1945, while testing for radioactive minerals on the property, pyrochlore was found with the silver-lead-zinccopper mineralization and an assay of 8% niobium was detected in one sample.

Mr. Gerlitzki optioned the property in 1959 to the Wenner-Gren group, who conducted

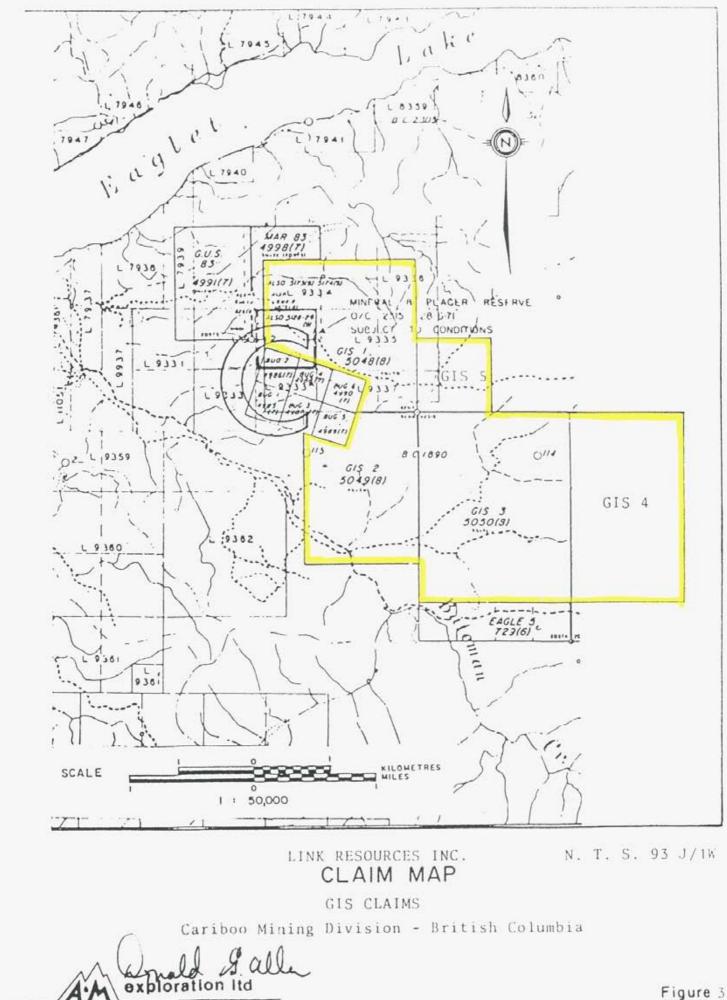


Figure 3

electromagnetic air and ground surveys and drilled four core holes. This showed the electromagnetic results to be caused by graphitic argillite with minor sulphide content.

In 1965 the property was optioned to Vanco Explorations and trenching and geochemical surveying was conducted over part of the holdings.

In the spring of 1966 Samson Mines optioned the property and 2,000 feet of hole was diamond drilled at 8 locations. This was followed up by a magnetometer survey and checking an indicated magnetic anomaly by the drilling of 8 more holes.

In 1967 Central B.C. Exploration was In January 1968 a drilling programme formed. was started to re-check the magnetic anomaly. This was completed after the fourth hole. A total of 1,000 feet of hole was completed. In hole 3-68 a 9 foot section contained 6% combined lead-zinc and 5.4 ounces of silver per ton. A gravity survey was made over part of the property and a suspected anomaly checked with diamond drill holes C 101-68 to C 111-68. Peridotite was the causative rock. The drill was moved back to within 200 feet of hole 4-66 and 12-68, a vertical hole, was drilled to 573 feet. From 100 to 350 feet, silver-lead-zinc mineralization was encountered but this became less evident toward the bottom of the hole. This mineralized zone appeared to be 180 feet wide.

In 1969 twelve holes were drilled. In 1969-1970, geochemical investigations were made over a surveyed grid for silver and mercury. Two anomalies were outlined southwest and northeast of the known mineralized zone."

The property was re-examined by Payne (1974, 1975) who logged drill core and carried out geological mapping in the vicinity of the known showings.

The property was acquired by Shell Canada Resources Ltd. in 1978 as a result of staking of electromagnetic anomalies generated by airborne geophysical surveys. They followed-up with geological mapping, ground geophysical surveys, geochemical soil sampling and diamond drilling in 1978 and 1979.

GEOLOGY

Regional Geology

The GIS claims lie in the Mcleod Lake map area, the geology of which was mapped by Armstrong, et al. (1976). The regional geology of the area summarized below is after Bloomer (1979).

The major feature of the Giscome area is the Black Stuart Synclinorium, an northwest-southeast trending structural trough situated roughly between Giscome and Barkerville. A northwesterly-trending fault-bounded block of sedimentary

and volcanic rocks of the Slide Mountain Group lie across the GIS claims. Metamorphic rocks of the Wolverine Group (metamorphosed equivalents? of the Cambrian or earlier Cariboo Group) and Tertiary intrusive rocks lie to the northeast and volcanic and sedimentary rocks of the Upper Triassic Takla Group lie to the southwest.

Property Geology

The following geological descriptions are compiled mainly from Allen (1973) and Payne (1974).

Oldest rocks in the claim area are metamorphic rocks of the Wolverine Complex. Gneiss (unit 1, Figure 4) is generally light grey in color but weathers to brown and ranges from a micaceous feldspathic quartzite to foliated granite schist with quartz stringers throughout. Locally it contains epidote veins with chloritic alteration envelopes.

Limestone (unit 2) forms two beds. It is white to dark grey in color and medium grained. Locally the northernmost bed is converted to an epidote-garnet or tremolite skarn. Argillite (unit 3) occurs as a bed lying on the south side of the limestone unit in the northwestern part of the property. It is grey to black in color, commonly weakly bedded, and strongly contorted. It is described as being graphitic and cherty.

Andesite flows, tuffs and breccias and minor dacite (unit 4) lie in the central part of the claim group.

Diorite, gabbro and serpentinite (unit 5) outcrop on the eastern part of the claim group.

Porphyritic granite and felsite (unit 6) occurs as irregular tongues, sills and dikes. They are presumably related to a small batholith of Tertiary age which lies to the northeast.

Dacite dikes of varying texture are reported in the north-western part of the claim area.

Mineralization

Silver-lead-zinc mineralization was described in detail by Payne (1974) as follows:

"Sulfides

Sulfides are mainly restricted to skarn. Sphalerite and galena are most abundant, chalcopyrite and pyrite are scattered, and pyrrhotite is rare. Pyrargyrite has been noted in one drill hole. Galena and sphalerite form massive bands in skarn up to a few inches across. Where sulfides are less abundant they commonly are intimately intergrown with silicates, generally interstitial to epidote. Chalcopyrite is most abundant in garnetite skarn. Pyrite is common in veins in skarn and in argillite; in the latter it is commonly smeared along slickensided surfaces. Carbonate-Chlorite Breccia

In drill holes 68-12 (424'-487') and (376'-378') skarn is strongly brecciated in a matrix of several ages of calcite and brown chlorite. Fragments of banded

calcite in a chlorite matrix probably represent a broken up limestone bed. The matrix of the breccia contains abundant sphalerite and galena. The breccia may have formed during the final stage of activity which produced the skarn. Sulfide Distribution

The main zone of sulfides occurs in the skarn in hole 68-12. The zone becomes narrower to the east. Except for the carbonate-chlorite breccia in the west the zone consists of high-grade bands of sphalerite and galena up to a few inches wide surrounded by skarn with disseminated sulfides. Between these zones are commonly areas of skarn with only sparse sulfides. Bands of high-grade sphalerite and galena extend at least 600 feet east of hole 68-12 in hole 69-6, but their abundance is insufficient in this region to give an assay of over 1% Pb or Zn over a width of more than a foot. The main assay zones are shown below:

Kole	Footage	Width	True Width	Pbs	Zn%	Ag(oz/t)	Cut	i
69-12	337-747 347-357	10 10	3.5	4.6 0.5	7.3 2.0	7.9 1.0	n.a. n.a.	
	367-387	20	7	1.7	3.0	2.0	n.a.	
	436-446	10	3.5	2.3	2.6	1.1	0.01	
	460-474.5	14.5	5	1.8	1.7	0.4	tr	
	488-494	6	2	4.6	4.6	1.8	U.06	
69-4	235-242	7	4.5	2.2	1.1	0.3	n.a.	
	2°4-307	. 23	15	2.6	1.5	0.2	n.a.	
69-5	187-193	5	3.5	10.2	10.5	2.5	0.06	•
	(several	other high ,	grade zones	lens t	han 2	feet wide)	
66-7	278-286	B,	5	Звал	ples t	aken, no		
67-6	noveral	narrow high	grade zones			C 12	ceived	· ·

GEOCHEMISTRY

Shell Canada Resources Ltd. carried out detailed soil sampling in two area grids 78-10 and 78-11 (Figure 5). Samples were analyzed only for copper, lead and zinc. Widespread zinc (>150 ppm) and restricted lead (>20 ppm) and copper (>80 ppm) occur over a large area. Zinc and lead anomalies are summarized on Figure 6.

A broad copper-lead anomalous area was outlined in grid 78-10. The area is geologically complex and no conclusion was reached by Bloomer (1979) as to whether the geochemical trend represents mineralization or high back ground copper and lead in the underlying lithologies.

Copper and zinc exhibit high relief throughout grid 78-11 (peaks at 100 to 210 ppm and 330 to 2000 ppm) but were not considered to reflect significant accumulation of bedrock mineralization. However, the rough correlation of geochemical anomalies with electromagnetic conductors and geological contacts suggest that they should be investigated further. Anomalous lead values (up to 220 ppm) occur in the vicinity of the limestone that hosts the known mineralization.

RESULTS OF PREVIOUS GEOPHYSICAL SURVEYS

Shell Canada Resources Ltd. completed extensive geophysical surveys between February and September 1978 over the area of the present GIS 1 to 4 claims. The survey consisted of an airborne electromagnetic survey by Questor Surveys, follow-up ground Crone Shootback electromagnetic, VLFelectromagnetic and magnetometer surveys. The results of the ground surveys were included by Shell in their assessment report #7388, by C.J.C. Bloomer. The anomalous electromagnetic zones are labelled A to E on Figure 5.

The Shootback EM survey outlined numerous weak to moderate conductivity zones (generally in the range from 10 to 30 mohs). They are interpreted to be related to graphitic argillite units within the Slide Mountain assemblage. The conductors have strike lengths that vary from 0.3 to 2 kilometres.

Conductor "A" (see Figure 5) in the vicinity of L8W 6+00N is essentially co-incident with the known silver-leadzinc mineralization outlined by the previous operators. The anomaly shape indicates the conductor at this point to be at a depth of approximately 25 metres. It correlates with a weak VLF-EM crossover located some 20 metres to the north. This information indicates a southerly dip to the zone, as confirmed by previous drilling results. This Shootback anomaly is co-incident with a weak to very strong VLF-EM zone throughout the entire two kilometre length. The conductor has been well tested by drilling in the vicinity of L7W 6+00N. However, Shell's drill holes E79-10 to 12 do not appear to have been properly selected to test this conductor. Gravity surveys over conductor "A" in the area of L2W, 4E, 5E, 8E and 13E are recommended to define sulfide concentrations which will be drill targets.

Conductor "B" is located approximately 800 metres to the southwest of Conductor "A", roughly paralleling the grid baseline. This zone exhibits conductivities of from 10-30 The upper edge is interpreted to be in the order of mohs. \cdot 50 metres in depth and appears to dip steeply to the south. The zone is continuous from L2E 0+50N to L19E 0+75N. There is a possible sub-parallel conductor located 100 metres southwest of conductor "B" at L3 to L8E and L13 to L16E. These Shootback EM anomalies in part probably indicate deep overburden conditions. However they overlie the presumed contact zone between the limestone and volcanic sequences and therefore warrant further investigation by gravity profiling and/or drilling.

Conductor "C", located on the eastern boundary of GIS 3, appears to be underlain by andesite and cherty tuff with some interbedded limestone and granitic dykes. Shell's proposed drill holes E78-8 and 9 may have tested this zone, however, as plotted on their Grid 78-10, they would appear to have been stopped short of the conductor axis. Some graphite

and disseminated pyrite was noted in hole 79-8 in sheared limy schists and biotite gneiss. The sub-parallel conductor located 100 metres south and on the east end of conductor "C" does not appear to have been drill tested. Exact position of the hole collars with respect to the conductor axis should be determined and re-logging of the core will be required to ascertain whether this zone has been adequately tested. A gravity profile across zone "C" along L7+00E is recommended.

Conductor "D" is located between L10 to L13E south of the baseline. The source is near surface and of moderate conductivity. It is located near the contact between volcanic cherts and tuffs, and mafic intrusive and/or volcanic rocks. The mafic rocks are distinguished by a marked magnetic high of 500 to 1000 gammas. This conductor does not appear to have been drill tested. Gravity profiling is recommended.

Conductor "E" is located 200 metres south of baseline 78-10, between L22 to L25E. It has a similar EM signature as conductor "D", does not appear to have been drill tested and is in an area of extensive overburden. Further VLFelectromagnetic and gravity profiling of this zone is recommended.

RESULTS OF 1984 WORK PROGRAM

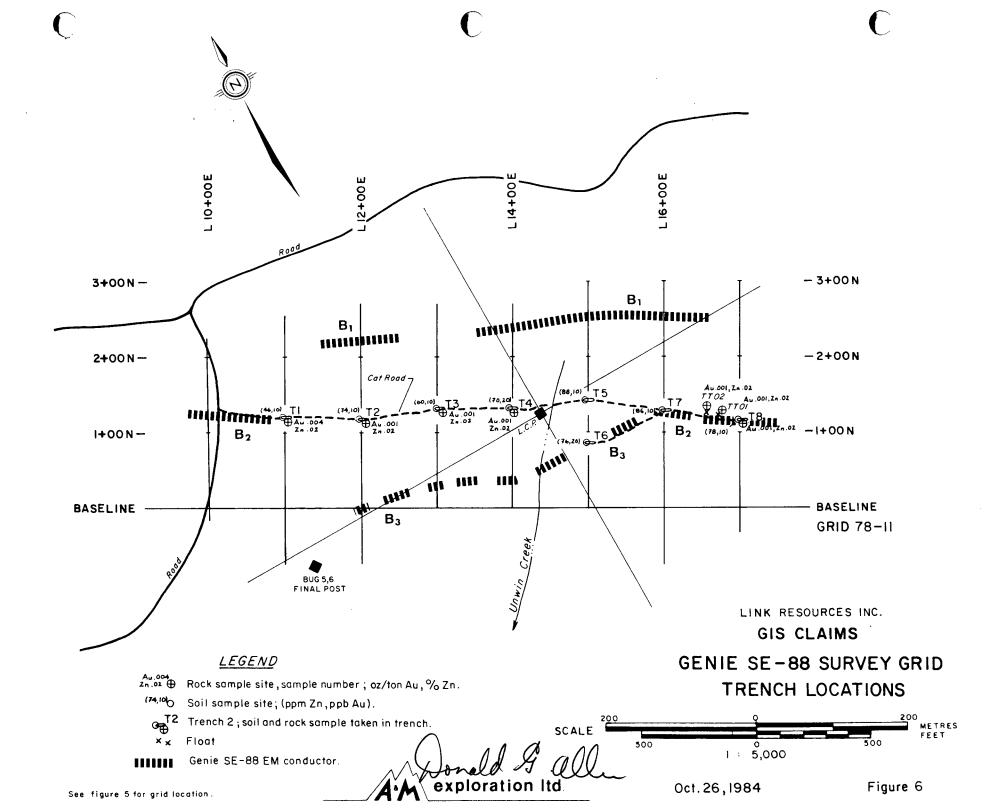
During the period July 29 to August 7, 1984, a program of electromagnetic surveys was carried out on the GIS claims. The purpose of this work was to more accurately define electromagnetic anomalies outlined by previous workers. This work was then followed-up by 0.85 kilometres of road construction, backhoe trenching (8 trenches totalling about 400 cubic metres) on the outlined anomalous areas (Figure 6).

Grid lines, previously established by Shell Resources, were reflagged and surveys run on Lines 10E through 17E on grid 78-11. Electromagnetic surveys were carried out with a Scintrex Genie SE-88 electromagnetic unit. Instrument specifications and operating procedures are included at the back of the report in Appendix I.

The 112/3037 frequency pair was selected for the survey with a transmitter-receiver coil spacing of 60 metres. On line 10E, the 112/337 and 112/1012 frequency pairs were also used. Stations were occupied at 25 metre intervals.

Three conductive zones were located by the survey. These zones are approximately coincident with conductor 'B' indicated on Figure 5, and are labelled B_1 , B_2 and B_3 on Figure 6. Profiles of the data are presented on Figure 7.

Conductor $'B_1'$ is represented by a discontinuous, generally deeply buried conductive zone. The conductor



stretches from 2+10N on L12E to 2+60N on L16E. This anomaly because it was not coincident with any anomalous geochemical response, and is probably deeply buried, was not tested by the trenching program.

Conductor $'B_2'$ occurs between L10 and L11E at 1+20N and between L16 and L17E at 1+30 to 1+20N. Peak to peak percent ratio responses vary from 3% on L11E to 18% on L16E. Comparison of these responses with field generated type curves indicates the probable conductivity width of the zone to be 50-100 siemens and the depth of burial to be between The width of the conductive zone is indicated 5 and 25 metres. to be between one and five metres. Trenching on L11E, encountered black slate at a depth of six metres. The Genie electromagnetic response on L11E was weak (3% ratio response) and no obvious conductive material was noted in the trench. The eastern portion of anomaly B_2 on L16 and L17E was also trenched. Responses were much stronger here than on L11E, however, the backhoe was unable to reach the bedrock in this area, with overburden exceeding nine metres in depth.

Conductor $'B_3'$ strikes at an acute angle to the baseline from approximately 0+00 on L12E to 1+30N on L16E. The responses are weak but continuous and comparison with computer generated type curves for a vertical plate indicates a possible causative source to have a conductivity thickness of approximately ten to twenty siemens and a depth of burial of 25 metres. Further detailing on this anomaly with greater loop

separations and two other frequency pairs will be required to further delineate this zone. Trenching on L15E at 0+87N did not reach bedrock.

Donald & alle

REFERENCES

Allen, A.R. (1973). Report on the Giscome Property. B.C. Ministry of Mines Assessment Report 4939.

Armstrong, J.E., Tupper, H.W., Hoadley, J.W. and Muller, J.E. (1968). McLeod Lake. Geological Survey of Canada, Map 1204A

Bloomer, C.J.C. (1979). Eagle Claims. B.C. Ministry of Mines Assessment Report 7388.

Montgomery, J.G. (1971). Geochemical Report on the J.H.G. Group of Claims. B.C. Ministry of Mines Assessment Report 3043.

Payne, J.G. (1975). Geological Report MC3, MC5 Claims. B.C. Ministry of Mines Assessment Report 5515.

Payne, J.G. (1974). Geological Report on the Giscome Property. B.C. Ministry of Mines Assessment Report 4907.

CERTIFICATE

- I, Donald G. Allen, certify that:
 - I am a Consulting Geological Engineer, of A & M Exploration Ltd., with offices at #214 - 850 West Hastings Street, Vancouver, British Columbia.
 - I am a graduate of the University of British Columbia with degrees in Geological Engineering (B.A.Sc., 1964; M.A.Sc., 1966).
 - 3. I have practised my profession of exploration geologist since 1964 to present in British Columbia, the Yukon, Alaska and various parts of the Western United States.
 - 4. I am a member in good standing of the Association of Professional Engineers of British Columbia.
 - 5. This report is based on fieldwork carried out personally on July 14, 1982; on work carried out by S. Travis and J. Cuvelier during the period July 29 to August 7, 1984, and on information listed under References.
 - 6. I hold no interest, nor do I expect to receive any, in the GIS Claims or in LINK RESOURCES INC.
 - 7. I consent to the use of this report in a Statement of Material Facts or in a Prospectus in connection with the raising of funds for the project covered by this report.

Donald G. Allen P. Eng. (B. C.)

October 25, 1984 Vancouver, B. C.

CERTIFICATE

- I, Douglas R. MacQuarrie, of the City of Surrey in the Province of British Columbia, do hereby certify that:
 - I am a Consulting Geophysicist of A & M Exploration Ltd., with offices at #214 - 850 West Hastings Street, Vancouver, B.C.
 - I am a graduate of the University of British Columbia with a degree in Geology and Geophysics (B.Sc., 1975)
 - 3. I have been practising my profession since 1975 and have been active in the mining industry since 1971.
 - 4. I am an active member of the Canadian Institute of Mining and Metallurgy and a member of the British Columbia Geophysical Society.
 - 5. This report is based on fieldwork carried out personally on June 13 to 15, 1982, July 14, and 15, 1983, August 3, 1983, and July 29 to August 7, 1984; on fieldwork carried out by S. Travis and J. Cuvelier.
 - 6. I hold no interest, nor do I expect to receive any, in the GIS claim or in Link Resources Inc.
 - 7. I consent to the use of this report in a Statement of Material Facts or in a Prospectus in connection with the raising of funds for the project covered by this report.

Douglas R. MacQuarrie (B. Sc.)

October 25, 1984 Vancouver, B. C. APPENDIX I

INSTRUMENT SPECIFICATIONS



The GENIE – an EM system optimized for accuracy, interpretability and down-to-earth efficient use.

Designed primarily for pragmatic mineral exploration, the unique SE-88 GENIE offers depth of penetration and interpretability equal to or better than any other moving source electromagnetic system. In addition, you get fast, accurate results due to the orientation and distance insensitive measurement, the lack of a cumbersome interconnecting cable, automatic signal averaging and many other outstanding features.

Introduction

Developed by Scintrex with the support of Esso Minerals Canada Limited, the SE-88 Portable Electromagnetic System is used mainly in mineral prospecting for massive sulphide ore bodies. It may also be used for the detection of faults or shear zones and to give information about subsurface conductivity for geological mapping, sand and gravel or groundwater exploration. The SE-88 has been dubbed the "GENIE", an acronym for GEometry Normalized Electromagnetic system.

The GENIE system, comprising transmitter and receiver consoles, is designed for rapid two person operation. The measurement is based on the simultaneous transmission of two preselected, amplitude stabilized, well separated frequencies and the comparison of the amplitudes of the two signals at the receiver. The two transmitted frequencies are picked up by a single receiving coil, amplified and noise filtered.

A proportional DC voltage (V_{signal} for the higher frequency, $V_{reference}$ for the lower frequency) is obtained from each signal, averaged over a selectable time period and then the computed result ($V_{signal}/V_{reference}$ -1) x 100 is displayed in percent on the digital display with a resolution of 0.1 %. Under most field conditions the system, whose sensitivity and repeatability are basically only limited by atmospheric noise, can detect amplitude ratio changes to better than 0.5 percent. Useful measurements may be made to a transmitter-receiver separation of up to 200 metres. Some of the advantages of the new GENIE System are:

- high portability
- ease of use
- no interconnecting cable
- wide frequency range
- good depth of penetration
- useful even in rough topography



Both the GENIE Receiver and Transmitter are designed for portability and ease of use. Here, the Transmitter Battery Pack is being removed for recharging.

SE-88 GENIE Portable Electromagnetic System

High measurement accuracy for maximum penetration.

Case histories. Test surveys have been conducted with this system over known subsurface conductors in a variety of geological environments and climatic conditions. Some of these results are shown later in this brochure. Compared with other portable electromagnetic systems, similar anomaly amplitudes have been observed in all cases, but the noise levels are invariably lower in the GENIE profiles, resulting in an enhanced signalto-noise ratio. The presence of known bedrock conductors beneath as much as 85 metres of overburden has been clearly indicated by the GENIE.

Large separations for deep penetration. The GENIE will work to separations up to 200 metres for deep penetration. However, the time taken to achieve valid readings and the accuracy of the readings, of course, depends on atmospheric noise levels. Alternatively, shorter separations can be selected for faster or more detailed surveying.

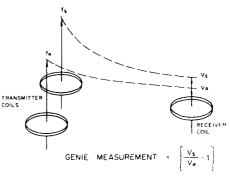
Minimal geometric errors. All previous portable electromagnetic systems, whether making in-and-out-of-phase (Slingram), tilt angle or amplitude measurements, are sensitive to the relative geometry of the transmitter and receiver coils. Small errors in orientation or separation of these coils introduce appreciable noise which degrades useful sensitivity and thereby the effective depth of exploration. While it is possible to reduce these errors by taking great care in making the measurements, production rates may be affected appreciably. These coil geometry errors are especially troublesome when surveys are to be made in topographically rugged and/or forested areas where the operators cannot see each other or measure distances accurately.

Since it measures a ratio of amplitudes, the GENIE minimizes errors due to improper coil orientation or separation. In fact, over nonconductive earth, there are no such errors at all. Under field conditions, the only time appreciable geometric errors occur is when either the transmitter or receiver is extremely close to a confined conductor. This insensitivity to geometric errors, which is compared in Table 1 to Horizontal Loop Systems for three different models, speeds up production of high quality data. Signal-to-noise ratios are invariably better with the GENIE than with Slingram equipment, offering increased depth of penetration. An added advantage is that there is really no need to cut and chain survey lines.

Signal/noise enhancement. By switch selection, the receiver operator can average the amplitude ratio over 2, 4, 8 or 16 seconds. The shorter times allow faster operation when atmospheric noise is not a problem, while the longer times permit quality data to be taken in noisy conditions. To further enhance the signal-to-noise ratio, the operator can make several measurements in the repetitive mode and record them for later analysis. The operator can quantitatively monitor atmospheric noise on an analogue meter.

Powerline filtering. The SE-88 has an efficient built-in filter for the fundamental and third harmonic of powerline frequencies. The filter can be changed from 50 to 60 Hz by an internal switch. Most importantly, the amount of powerline noise which is received before filtering can be measured quantitatively on one of the analogue meters. This allows the operator to make a record of the level of powerline noise so this may be taken into consideration when the data are interpreted.

Drift free electronic design. The GENIE is factory set for free space conditions. No field calibration is required. The transmitter design includes a crystal controlled oscillator and feedback loops to ensure accurate frequency and moment tuning, better than 0.1 percent. The receiver is also crystal controlled. This, as well as the fact that a single coil is used to receive both frequencies, ensure no drift and no tuning for ease of use, reliability and accuracy.



Two well separated frequencies f_S and f_R are transmitted simultaneously with amplitudes stabilized to 0.1%. The voltages V_S and V_R at a single receive coil are amplified, noise filtered and averaged and then the computed result is displayed. If no subsurface conductors are present, then $V_S = V_R$.

Earth Model	Actual Separation 100 m Nominal	Slope	Horizontal Loop In-Phase Error (%)	GENIE Error (%)
1) Free Space	100 m	0°	0	0
· ·	95 m	0°	- 14	0
	102 m	0°	+ 6	0
	100 m	5°	- 2.2	0
	100 m	10°	- 9	0
	100 m	15°	-20	0
	100 m	20°	-35	0
	100 m	25°	-54	0
2) Conductive Overburden	100 m	0°	0	0
20 m thick with 0.02 mho/m	95 m	0°	- 16.2	-0.8
conductivity	102 m	0°	+ 6.9	+ 0.2
3) Vertical conductor, 25 m deep	100 m	0°	0	0
with conductance of 10 mhos.	95 m	0°	- 9.6	+ 2
	102 m	0°	+ 3.9	-0.2

Table 1

Errors due to coil separation and orientation are seen to be very low for the GENIE compared with Horizontal Loop (Slingram) measurements.

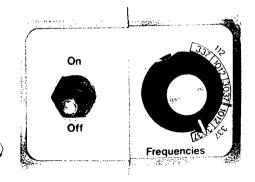
Available interpretation procedures yield full information.

Complete interpretation. The SE-88 gives results which can be easily interpreted to give the normal parameters expected of electromagnetic geophysical surveys. In the case of a steeply dipping conductor, its location, strike, dip, depth and conductance can be determined. For the two layer case, the conductivity and thickness of the upper layer may be interpreted either separately or as a conductance product, depending on the circumstances.

Ease of interpretation. Anyone familiar with Slingram interpretation will readily be able to learn GENIE interpretation. The instrument's operating manual contains an introductory description of interpretation procedures. A similar description is given later in this brochure.

Model studies available. In order to assist with the interpretation of more complex models, a comprehensive program of model studies has been carried out at the University of Toronto electromagnetic modelling facility. This information is available to GENIE users in the form of an Interpretation Manual.

Choice of frequencies. In order to permit quantitative interpretation to be carried out and to allow selection of the optimum signal-to-noise response parameter for a given survey, the SE-88 offers five different frequency pair settings. If multifrequency data are desired to improve the interpretation



The Transmitter controls comprise only two switches for simple operation by unskilled personnel.

possibilities, then readings can be taken with up to five settings at each survey station. The frequency range spanned by the system is 112.5 to 3037.5 Hz.

Simple operation speeds up surveys.

Test surveys. The actual reading time of the GENIE is similar to that taken when using standard horizontal loop (Slingram) equipment. Time is saved, however, when moving from station to station since the GENIE has no cumbersome interconnecting cable to get caught in rocks or brush. This advantage is particularly noticeable when profiles have not been cleared. In rough topography much more time is saved with the GENIE since it is not necessary to orient the coils to coplanarity or to do a topographic survey to permit corrections to be made.

No interconnecting cable. Unlike Slingram equipment, the GENIE has no cable connecting the transmitter and receiver to add weight and generally inhibit your movement through brush or rough topography. Also, you are finally free of lost time due to broken cables.

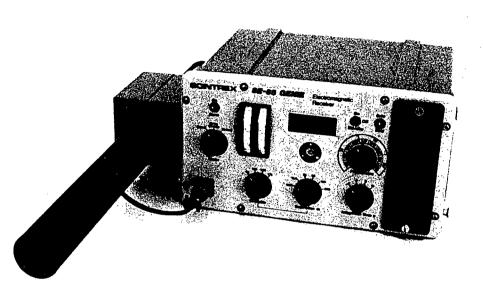
Convenient, robust design. The receiver is carried strapped to the chest while the transmitter is mounted on a backpack. This leaves both of the

operator's hands free for climbing in rough terrain or for clearing branches, thereby speeding up the work. The transmitter, which is only 17.8 kg with the heavy duty batteries, has its weight comfortably distributed for carrying and comes with padded shoulder straps. The cases of both units are made of a strong fiberglass, proven to stand up well under field conditions. The bright colours of the GENIE enclosures have been chosen to increase survey efficiency by allowing operators to see each other as well as possible in heavy bush.

Simple controls. The transmitter controls consist of an On/Off switch and a Frequency Pair Selector which are within easy reach for the operator. When a survey is carried out using only one frequency pair, all the transmitter operator must do is turn the unit on and off at the appropriate times.

Operation of the receiver is simple. The Separation Distance, Frequency Pair and Signal Averaging Time Switches are not often changed during a routine survey. The operator simply moves a toggle switch and single or repetitive readings are taken depending on the chosen mode of operation. At the end of each measurement an alarm is heard. In the repetitive mode the instrument will continue to take readings automatically so that the operator can monitor variations from reading to reading if he desires. In this mode, the alarm is useful to indicate the end of a

* 浩



SE-88 GENIE Portable Electromagnetic System

reading since the value of the digital display may not change.

Signal monitor. On each of two analogue meters the receiver operator can monitor the amplitude of the two transmitted frequencies. This gives him confidence that the equipment is functioning properly and permits calibration since the amplitudes should be equal over nonconductive ground.

Digital display. The low power consumption liquid crystal digital display reads out the amplitude ratio to 0.1 percent resolution. It is easy to read and, compared to analogue meters, gives an unambiguous result which can be accurately noted by the operator. A heater is built into the display so that the SE-88 can be used in subzero temperatures.

Trouble-free battery operation. Both the transmitter and receiver employ nickelcadmium rechargeable battery packs which can be removed for charging. This means that if spare battery packs are purchased, one set of batteries can be charged while another is at work in the field, so that no time is lost. It is possible to work without spare battery packs, provided recharging is done each night.

Two types of battery packs are available for the transmitter. The heavy duty battery, weighing 1.7 kg more than the light duty battery, ensures a full day's operation even in subzero weather. The light duty battery is chosen to save weight when either few readings will be taken each day or when temperatures are not low. The condition of the receiver batteries is seen on a meter, and the transmitter emits an audible low battery signal. These features warn the operators in advance of the batteries becoming so low that it is not possible to work, avoiding lost time.

Measures distance electronically.

Another reason that cut and chained survey lines are not necessary is that the GENIE is also inherently a distance measuring device. The signal at the lowest transmitted frequency is relatively unaffected by earth conductivity. The amplitude of this signal is displayed on an analogue meter at the receiver so that the operator can adjust his position with respect to transmitter, within better than 2 percent, by simply moving until a meter needle comes to a calibrated position. The receiver can be adjusted by switch selection for 21 separations between 6.25 and 200 metres. It is possible to select greater distances but in practice, atmospheric noise may make measurements at more than 200 metres impractical.

To use the GENIE without cut and chained lines, the transmitter operator stands at the first station and turns on the transmitter. The receiver operator adjusts the Separation Distance Switches for the distance required and walks away until his meter needle comes to a calibrated position. He then takes the observation and marks or flags his position for the transmitter operator to occupy for the next reading.



Interpretation

An Interpretation Manual is available from Scintrex which permits quantitative interpretations of GENIE results to determine: 1) location, 2) strike, 3) dip, 4) depth and 5) conductance.

The Interpretation Manual comprises two parts. The first part consists of general curves which permit interpretation of an unknown, dipping, thin conductor and conductive overburden from observed data. The second part consists of computer generated profiles over various plate and sphere models which are useful for comparison with field profiles.

In classical horizontal loop (Slingram) measurements, the in-phase and quadrature components of the vertical component of the secondary field are compared in phase and amplitude with the primary field. The GENIE, on the other hand, measures the percent change with frequency of the vertical component of the total field received. The data profiles generated and the interpretative procedures used for the two methods are comparable but not identical.

In general, the factors affecting the GENIE profile shapes and peak amplitudes are: 1) the depth H to the conductor current axis which is located near the top of the conductive sheet, 2) the separation L between the Transmitter and Receiver, 3) the GENIE frequency pair used, 4) the dip of the sheet and 5) the conductance, otherwise called conductivity-thickness product, of the sheet.

Figure 1 compares horizontal loop and GENIE responses. For a 100 m coil separation, the GENIE response peaks for conductances between about 10 and 100 mhos. For coil separations between 50 and 200 m the peak position is over the range 5 to 200 mhos. The conductance peak position varies within these ranges depending on H/L, dip and the frequency pair employed. It is seen that as the response parameter approaches either zero or infinity, the GENIE response tends towards zero so that there is always a certain aperture within which the measurement is effective.

140

120

100

60

40

20

10-7

* 60

RESPONSE

Horizontal loop in-Phase

loop Quadr

10

GENIE

Horizontal

笔 鹄

However, the GENIE frequencies have been chosen such that the conductance range covered is sufficient to detect most earth conductors of interest.

Figure 6 can be used as an example of how wide a typical aperture is. If a noise cut off of 1.5% is taken (three times the mean error of measurement and fifteen times reading resolution), the aperture is seen to be from less than 1 mho to about 1000 mhos for a 100 m coil separation for the three frequency pairs shown, a 60° dip and H/L = 0.167. Dip does not have much effect on the aperture, but an increase of H/L tends to reduce the aperture mainly at the upper end. For example, at H/L = .25, the upper cut off would be about 700 mhos. At H/L = 0.3125 it is 500 mhos.

Once a conductor is detected on the frequency pair chosen for reconnaissance work, the standard field procedure is to run a profile over the anomalous zone employing all three of the frequency pairs which are based on 112 Hz. These are: 3037/112, 1017/112 and 337/112. The purpose of this procedure is to provide data referenced to the lowest frequency which is least affected by the earth's conductivity. Once data from these measurements are available, quantitative interpretations can be made.

Location

The location of the current axis of a thin, steeply dipping Thin Plate Conductor below a GENIE profile is easily determined since it is centred directly below the peak of the negative response. This is the case for both of Figure 2 and 3 where the conductor axis is located below the 0 point on the profiles.

Figure 4 shows the case for a Horizontal Thin Plate Conductor. In this model, the centre of the plate is directly below the centre of the positive GENIE Ratio Response peak while the negative maxima occur over the edges of the plate. As the depth of the plate increases, the negative maxima move out from the plate edges and decrease in amplitude relative to the central positive peak.

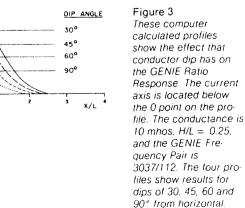
Figure 1

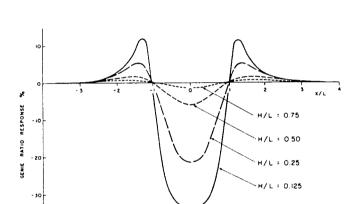
These response curves have been calculated using the equivalent cir cuit approach given by Grant and West.

Figure 2

These are computer calculated profiles for GENIE Ratio Response for a conductor dipping vertically with its axis located below 0. The conductance is 10 mhos and the GENIE Frequency Pair is 3037/112. The four profiles show different H/L ratios so if the coil separation L is constant, the curves reflect changing depth to the current axis. If L were 200 m, then the depth to the current axis in the case of lowest amplitude profile would be 150 m. The horizontal axis is normalized for coil separation by dividing the horizontal distance by L.

DIP ANGLE 20 30 45° 60° 10 906 r X/L RESPONSE - 10 RATIO 9EN 6 - 30





100

RESPONSE PARAMETER

SE-88 GENIE Portable Electromagnetic System

CHER

Once the conductor axes have been interpreted for a series of adjacent profiles, their locations are plotted on a plan map of the profiles so that the strike length and direction can be determined.

Oip

The effect that dip has on the GENIE Ratio Response is shown clearly in the profiles shown in Figure 3. It is easy to determine the dip direction since the positive peak on the hanging wall side is larger than the positive peak on the foot wall side.

Dip is determined by measuring the ratio of the positive peaks on the GENIE profiles at two or, preferably, three frequency pairs and fitting them on one of three families of curves exemplified by Figure 5. 5

PEAKS

3

POSITIVE

Ч С

RATIO

0.1

0.2

0.3

0.4

H/L

0.5

0.6

Depth

As explained in the caption to Figure 5, the ratio H/L is known once the best family of dip curves is found. The depth to the current axis is then determined by multiplying the coil separation L by the indicated H/L ratio.

Conductance

The conductance (also called conductivity-thickness product, of in mhos) is interpreted by using the appropriate family of curves, one of which is shown in Figure 6. Since all of the conductance families of curves tend to be well separated for low values of otL and closer together for higher values, the following rule of thumb for profiles where L is constant applies: 1) if the peak GENIE Ratio Responses for all three frequency pairs are nearly the same, the conductance is high, 2) if the peak response for the highest GENIE Ratio is large compared to the other two peak responses, the conductance is moderate and 3) if the peak amplitudes are widely separated, then the conductance is poor to good. Thus, a preliminary grading of conductors can be done in the field even

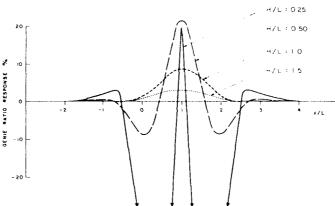




Figure 4

Shown is the theoretical response for a Horizon ral Thin Plate Conductor where the depth is varied from 0.25 L to 1.5 L. In this case the plate runs from 0 to +.2 on the profile. The conductance is 10 mhos and the GENIE Frequency Pair is 3037/112

Figure 5

337/112

---- 1012 /112

0.7

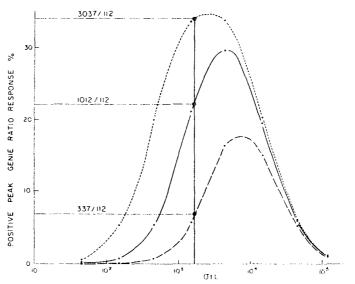
ດ່ອ

3037/112

This family of curves shows the effect of varving the GENIE frequency pairs for a conductor dipping at 60°. To deter mine dip and H/L, the ratios of positive peaks on the field profiles for three frequency pairs are measured. Then, the tamily of dip curves where these points fall on the best vertical line is found. In this example, dip is 60° (from the family of curves) and H/L = 0.125.

Figure 6

Shown is one of several tamilies of conductance curves which, once dip and H/L are known, per mits interpretation of conductance, of This tamily is for the case of a 60° dip and H/L =0.167. To set the conductance, the positive peak GENIE responses lot three frequency puns are plotted. These inpould fail on a vertical line giving a value of off. Since L is known a can be calculated



without the GENIE Interpretation Manual.

Conductive Overburden

Master curves have also been generated for the case of a conductive overburden layer over a resistive half space. For a certain range of overburden thickness, the thickness and conductivity may be determined separately. For lesser thicknesses, only the conductivity-thickness product may be determined. For greater thicknesses only the conductivity can be determined.

Case Histories

With support from Esso Minerals Canada Limited a comprehensive program of field testing the SE-88 GENIE has been carried out in a variety of geological environments in the Canadian provinces of Quebec, Ontario and British Columbia. The results have been compared with those given by other electromagnetic systems. Comparable anomalous peak responses have been observed in all cases, however, the geometry dependent noise levels are lower with the GENIE. resulting in an enhanced signal-tonoise ratio. The presence of conductors beneath as much as 85 metres of

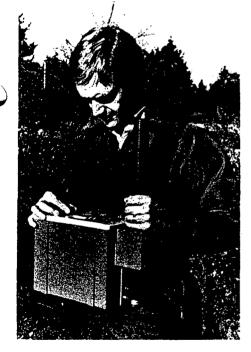
1 3

overburden have been clearly indicated by the GENIE.

Five case histories are given in a paper presented at the 1981 Annual Meeting of the Society of Exploration Geophysicists entitled "A Novel Geometry - Invariant Portable Ground Electromagnetic Reconnaissance System" by Z. Doborzynski of Esso Minerals Canada and P. LaFleche, U. Rentsch, D. Rudniski and I. Brcic of Scintrex. Copies of this paper are available from Scintrex.

Two of these case histories are shown in Figures 7 and 8 and are briefly described in the figure captions.

40%



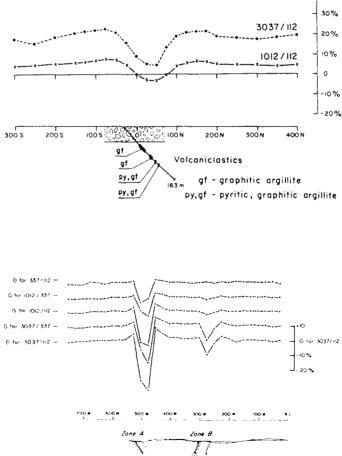


Figure 7 A GENIE test profile with 100 m coil separation over a series of steeply dipping, graphitic bands within a volcanoclastic sequence overlain by overburden. Interpretation of the steeply dipping conductor indicates a depth to the current axis of 50 m and a conductance of 7 mhos. The background offsets of the two profiles are interpreted to indicate 40 m of 60 ohm-m overburden. All of the interpretations fit well with drill indicated values.

Figure 8

GENIE profiles using a 50 m coil separation over Line C at the Cavendish Geophysical Test Site in Ontario Zone A and Zone B contain semi-massive sulphides in a biolitehornblende gneiss. There is very little overburden. The steep easterly dip of Zone A is readily seen from the shape of the profiles. These results clearly demonstrate the very low noise level of GENIE data

Technical Description of the SE-88 GENIE Portable Electromagnetic System

Transmitter

Transmitting Element Iron-cored coil for each of two selected frequencies.

Transmitting Frequency Pairs Five pairs. 112.5 Hz reference with one of 337.5, 1012.5 or 3037.5 Hz; or 337.5 Hz reference with one of 1012.5 or 3037.5 Hz.

Transmitting Moments 150 Am at 112.5 Hz, 100 Am at 337.5 Hz, 50 Am at 1012.5 Hz, 25 Am at 3037.5 Hz.

Belative Amplitude Stability Better than 0.1%

Power Supply Rechargeable nickel-cadmium batteries; 2 options available, Light and Heavy Duty Battery Packs. Each pack contains 20 cells at 1.25 V Nominal with a total output of ± 12.5 V nominal. The Heavy Duty Pack has 7 A hour capacity while the Light Duty Pack has 4 A hour capacity.

Power Supply Endurance Light duty pack: 3 hours continuous at 20°C Heavy duty pack: 5 hours continuous at 20°C

Operating Temperature Range -30°C to + 50°C

Storage Temperature Range -40°C to + 50°C

Total Weight With light duty battery; 16.1 kg. With heavy duty battery; 17.8 kg

Dimensions Height: 820 mm Width: 370 mm Depth: 155 mm

Receiver

Receiving Element Iron-cored coil

Receiving Frequency Pairs Same as transmitter plus 37.5 Hz reference with one of 112.5, 337.5, 1012.5 and 3037.5 for a future transmitter. The control of the selections for the selections of the selector: 6.35 m, 12.5 m, 25 m, 50 m, 100 m, 200 m plus Multiplier: x 1, x 1.25, x 1.5, x 1.75. For example, 100 m x 1.5 = 150 m.

Maximum Transmitter-Receiver Separation 200 m under most conditions. Greater separations may be possible depending on atmospheric and power line

Power Line Filtering Internally switch selectable at 60 or 50 Hz and 3rd harmonic.

Signal Averaging time Switch selectable at 2, 4, 8 or 16 seconds

Resolution of Ratio Display 0.1%

Power Supply Rechargeable nickel-cadmium batteries

Power Supply Endurance 20 hours continuous at 20°C

Operating Temperature Range -30°C to + 50°C

Storage Temperature Range -40°C to + 50°C

Total Weight 5.7 kg

noise.

Console Dimensions Length: 300 mm Height: 230 mm Depth: 160 mm

Coil Dimensions Length: 500 mm Diameter: 45 mm

Sattery Charger

Power Requirement 115 V or 230 V, 50 Hz or 60 Hz, 50 VA

Charging Time 7 hours for completely discharged batteries, subsequent automatic trickle charging. Transmitter and receiver batteries can be charged simultaneously. Weight 4.5 kg

Dimensions Length: 290 mm Height: 150 mm Depth: 130 mm

SCINTREX

222 Snidercroft Road Concord Ontario Canada L4K 1B5

Telephone: (416) 669-2280 Cable: Geoscint Toronto Telex: 06-964570

Geophysical and Geochemical Instrumentation and Services



ę - -

APPENDIX II

ANALYTICAL RESULTS

OSSBACHER LABORATORY LTD.

CERTIFICATE OF ANALYSIS

TO : A&M EXPLORATION LTD. 214-850 HASTINGS ST. VANCOUVER, B.C. 2225 S. SPRINGER AVENUE BURNABY, B.C. V5B 3N1 TEL : (604) 299 - 6910

CERTIFICATE No. : 84332.X - 1 INVOICE No. : 4365 DATE ANALYSED : AUGUST 29, 1984

PROJEC	<u> </u>				<u>FILE</u>	NAME :	<u>A&M332.X</u>
PRE		oz/t	oz/t	"/a	7.	 %	
FIX	SAMPLE_NAME	<u> </u>	Aq_	<u>Cu</u> _	Pb	Zm	
A	TRENCH RX 01	<u>0</u> "004	0.02	0.01	0.02	0.02	
A	TRENCH RX 02	0.001	0.Ö2	0.01	0.02	0.02	
A	TRENCH RX 03	0.001	0.02	0.01	0.02	0.02	
Â	TRENCH RX 04	0.001	0.02	O.01	0.02	0.02	
<u> </u>	TRENCH RX 08	0.001	0.02	<u>0.01</u>	0.02	0.02	
A	84 GTT 01	0.001	0.02	O.O1	0.02	0.02	
A	84 GTT 02	0.001	0.02	0.02	0.02	0.02	
					÷		

CERTIFIED BY :

OSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE BURNABY, B.C. V5B 3N1 TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : A&M EXPLORATION LTD. 214-850 HASTINGS ST. VANCOUVER, B.C. CERTIFICATE No. : 84332 - 1 INVOICE No. : 4366 DATE ANALYSED : AUGUST 23, 1984

PROJE	<u> </u>	<u>36_GIS</u>				FILE	NAME :	_ <u>A&M30</u>	52	
PRE		· · · · · · · · · · · · · · · · · · ·	P.E.M	PPM	"/"	PPM	PPM	PPM	PPB	
FIX	SAMPLE NA	ME	Cu	Ni	Fe	<u> </u>	Zn	<u>Pb</u>	<u> </u>	
A	TRENCH SO	Ii #1	20	52	1.9	0.2	46	4	10	
A	1	2	32	50	3.1	0.2	74	6	10	
A		3	24	40	2.5	0.2	60	6	1 Ö	
A	i	4	26	52	2.8	0.2	70	A)	20	
<u>A</u>		5	36	58	3.7	0.2	88	6	10	
A	,	6	24	44	3.Ο	0.2	76	ద	20	
A		7	36	54	3.5	0.2	86	6	1.0	
A	TRENCH SO	IL #8	34	52	3.3	0.2	78	6	$1 \mathrm{O}$	
	i .									

CERTIFIED BY : Abouch

APPENDIX III

AFFIDAVIT OF EXPENSES

. .

AFFIDAVIT OF EXPENSES

This will certify that electromagnetic surveys (Genie SE-88), road construction and trenching were carried out on the GIS 1 to 5 claims during the period July 29 to August 7, 1984, in the Giscome area, Cariboo Mining Division, British Columbia to the value of the following:

MOBILIZATION AND FIELDWORK

C	~	1	~	-	÷.	~	~
S	a	Ŧ	a	Г	1	e	S

S. Travis	10.5	days	6	\$120/day	\$1,260.00
J. Cuvelier	9.0	days	6	\$100/day	900.00
Room and board					519.20
Telephone					39.84
SE-88 unit rent	a1	6 day	/s	@ \$150	900.00
Bulldozer and b	ackhoe	e rent	al	L	2,451.82
Vehicle rental,	oil a	and ga	is		1,115.24
Geochemical ana	316.02				
					<u> </u>

\$7,502.12 \$7,502.12

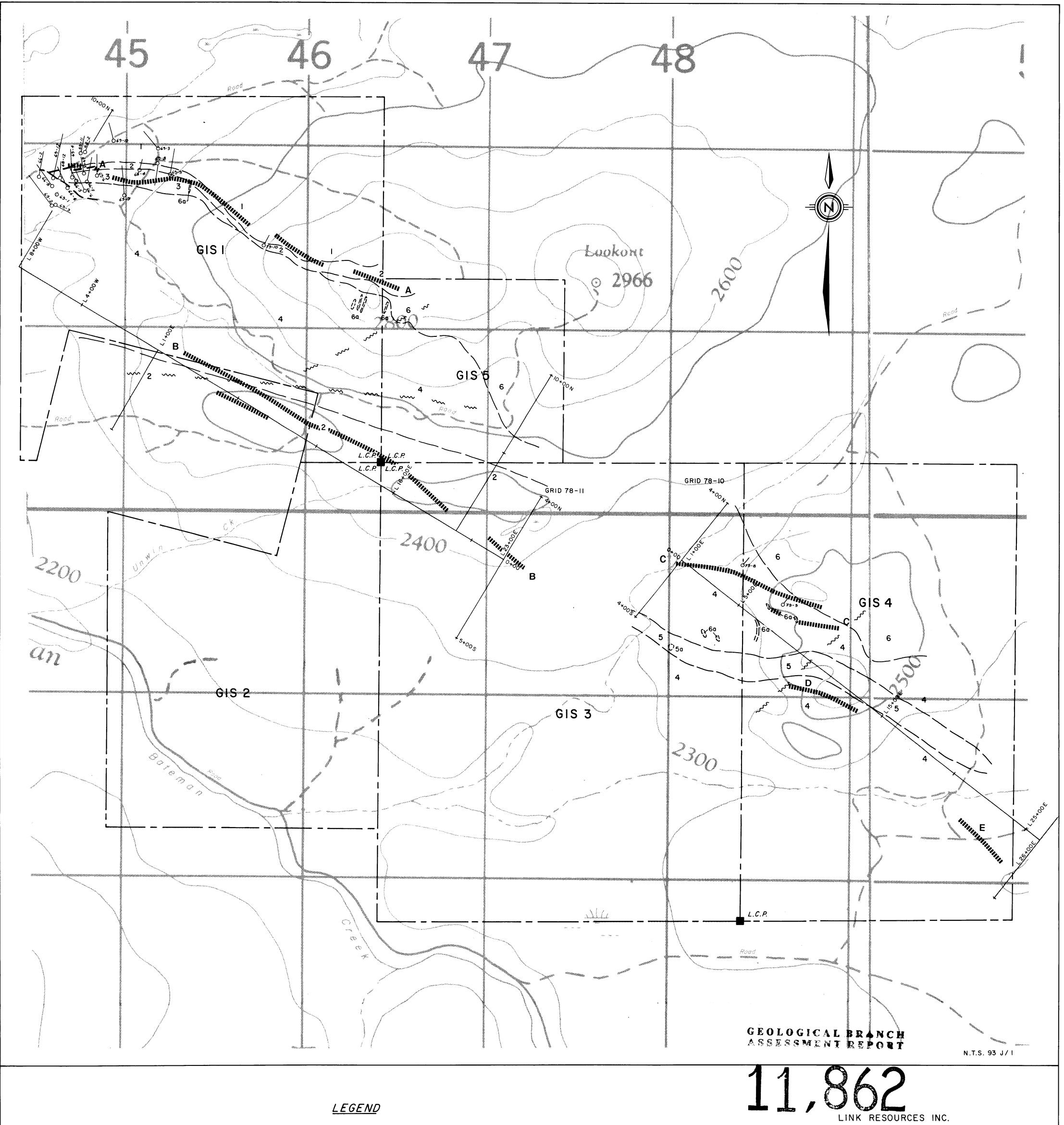
REPORT

Draughting, typing and	compilation		
19 hours @ \$18	.50/hr	\$	351.50
Engineering fees			
D.G. Allen 1.0 day	rs @ \$400/day		400.00
Maps and photocopying			71.23

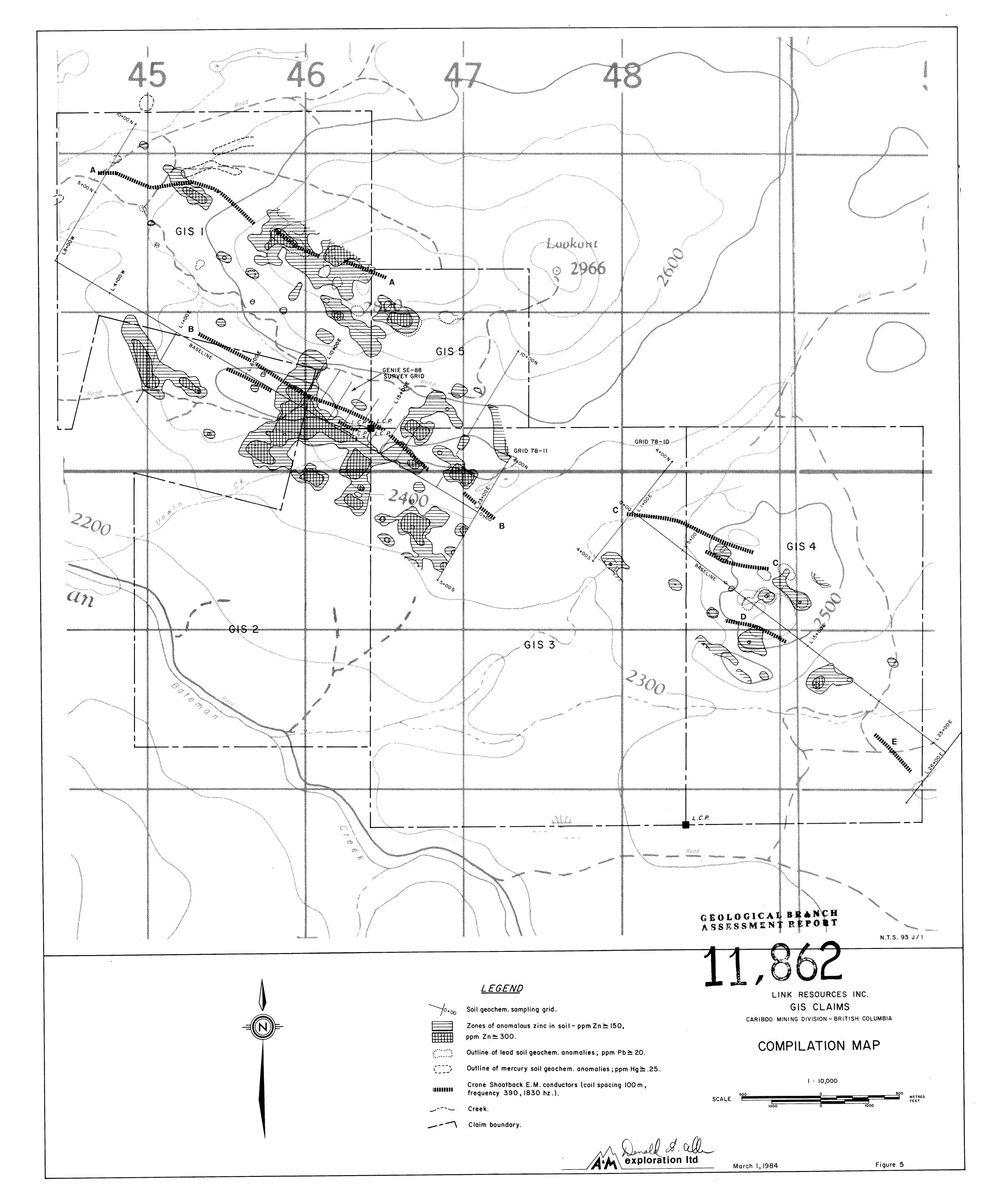
\$ 822.73 \$ 822.73 GRAND TOTAL \$8,324.85

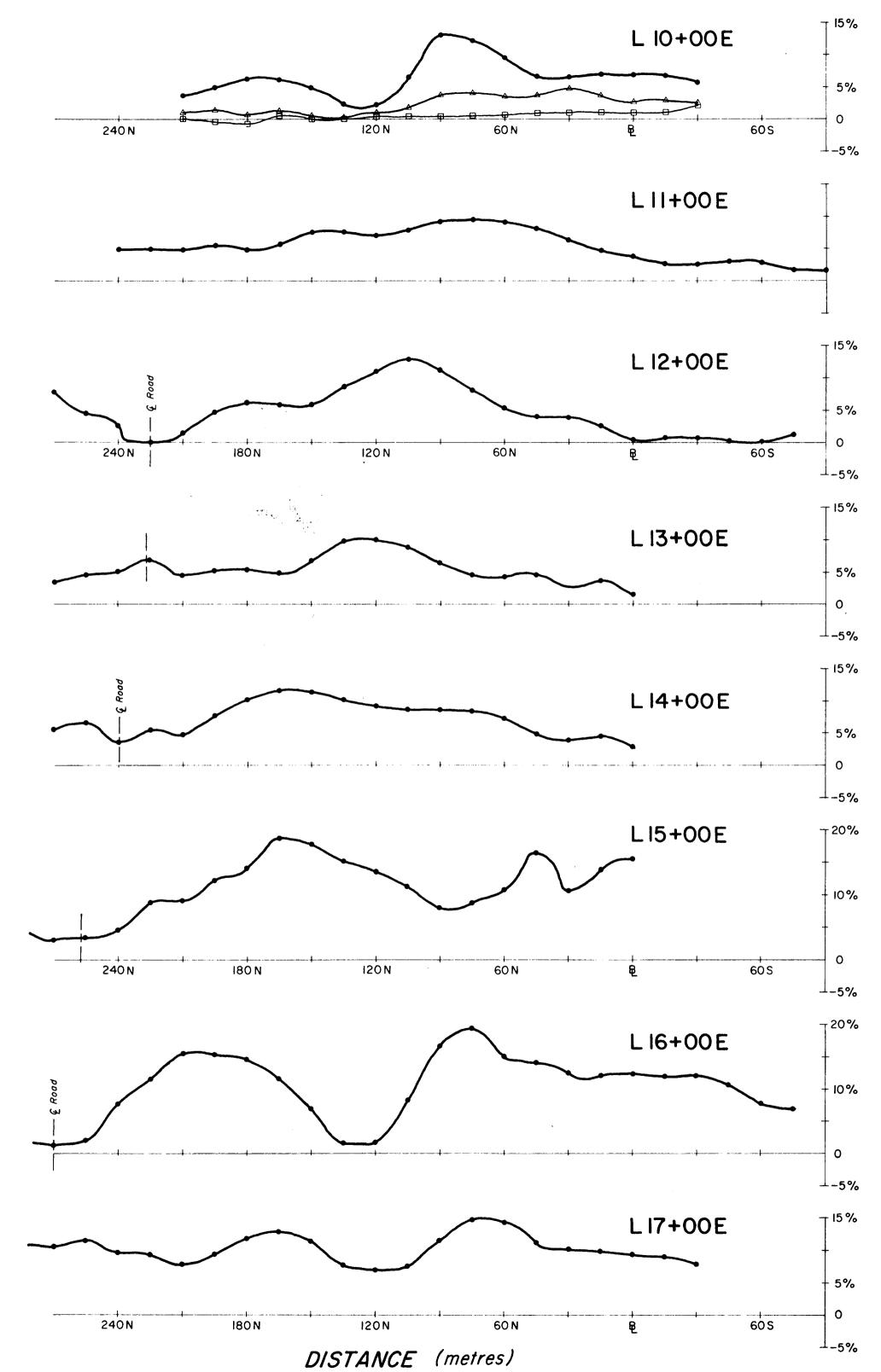
G

Donald G. Allen, P. Eng. (B. C.)



GIS CLAIMS SYMBOLS INTRUSIVE ROCKS Fault (interpreted). Granite; 6a Felsic dikes. \sim 6 CARIBOO MINING DIVISION - BRITISH COLUMBIA Diamond drill hole. 5 079-10 Diorite, gabbro; 5a Serpentinite. GEOLOGICAL MAP SLIDE MOUNTAIN GROUP Geological contact. /_/ Andesite; andesitic tuff, volcanic sandstone, cherty tuff. 4 Crone Shootback E.M. conductors (coil spacing 100 m, HUUDDONN frequency 390,1830 hz.). Argillite 3 1 : 10,000 Zone of abundant galena and sphalerite. 2 _ Limestone METRES FEET SCALE ____. Creek. \sim WOLVERINE COMPLEX Gneiss, schist, quartzite. ---- Claim boundary. 1 A.M. exploration Itd. March 3, 1984 Figure 4





PERCENT RATIO FREQUENCY PAIRS -112/337 - 112/3037 LOOP SEPARATION = 60 METRES

Survey date: Aug. 3, 1984. Operator : S. Travis

SCALES Horizontal : 1 cm = 15 metres Vertical : 1 cm = 5%

GEOLOGICAL BRANCH ASSESSMENT REPORT



LINK RESOURCES INC. GIS CLAIMS



PROFILES

GRID 78-11

exploration Itd.

: