PROSPECTING PROPOSAL
to accompany application
for OPAP assistance
by
Alar Soever and Robert Jackson

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INTRODUCTION

The Grenville Supergroup rocks of Ontario, Quebec and New York State are known to host several economic to subeconomic deposits of base metal mineralization.
These include:

Balmat Edwards, New York State	> 40 M tons	10% Zn, 1% Pb
Pierrepont, New York State	1.6 M tons	16% Zn
Calumet, Quebec	3.75 M tons	5.9% Zn, 1.6% Pb, 2.5 oz Ag.
Tetreault, Quebec	2.65 M tons	4.53% Zn, 1.54% Pb, 2.5 oz Ag,.02 oz Au
Montauban, Quebec	100,000 tons	2.88% Zn, 1.03% Pb, 1.0 oz Ag,.01 oz Au
Long Lake, Ontario	90,000 tons	21.6% Zn
Salerno Lake, Ontario	1.0 M tonnes	5.39% Zn
Renprior (Cadieux), Ontario	626,000 tonnes	10% Zn, 1% Pb

Significant gold deposits occur associated with the base metal deposits at Montauban (1.1 M tons at 0.12 oz. ton) and Calumet (300,000 tons at 0.25 oz./ton).

Despite the obvious mineral potential supported by the above examples the Grenville has been avoided or explored only superficially by mineral exploration companies. It is believed that exploration geologists have generally been discouraged by the structural complexity and high metamorphic grade. As a result much of the Grenville province has not been intensely explored and excellent untested potential remains for a major discovery.

The applicants, Alar Soever and Robert Jackson have been involved in exploration in the Grenville Province since the mid 1970's. They were involved in work on both the Salerno Lake and Cadieux deposits, the two most significant undeveloped zinc deposits in the Ontario Grenville.

In 1990 the applicants initiated a phased exploration program for base metal mineralization in the Ontario Grenville province. Preliminary work, consisting of compilation of existing government data, was initiated during January 1990. This work defined a number of target areas for ground follow-up. OPAP assistance was obtained and a number of these target areas were examined in the summer of 1990.

This work resulted in the discovery of significant new zinc mineralization in Lutterworth Twp. Claims were staked, and mapping and soil sampling were carried out with positive results. Negotiations are currently underway with several parties interested in funding the next phase of exploration on the property. No firm commitment has been obtained at this time.

For 1991 the applicants are requesting OPAP assistance to continue reconnaissance exploration work in Lutterworth Twp. to locate additional mineralization in other areas within the same stratigraphic interval which hosts the mineralization discovered under the 1990 OPAP program. Provision is also made to carry out preliminary reconnaissance work in several other areas which compilation work has shown may be favourable for hosting similar mineralization. Some provision is also made to continue work on the mineralization discovered in 1990 should attempts to find a partner to fund the next phase of work on the present property unsuccessful.

BACKGROUND

The exploration target is a metamorphosed sediment hosted base metal deposit and possible associated gold mineralization, similar in character to the deposits listed above. It has been the applicant's experience that such mineralization responds well to stream sediment geochemistry. Given the strong structural controls imposed on these deposits during metamorphism and deformation, and the lack of intensive exploration in the Grenville province, prospecting using structural geologic mapping and stream sediment geochemistry as a guide has in the past been very successful in locating surface mineralization.

The proposed program consists of ground follow-up by means of stream sediment surveys, prospecting and structural geologic mapping in target areas. The level of detail of the above work will vary from area to area depending on the extent to which previous government mapping and surveys as well as follow-up by the applicants has defined the target area.

In the case of preliminary reconnaissance work will consist mostly of check mapping, prospecting and sampling along roads while in areas in where minaralization has been discovered more detailed work including the establishment of grid lines and 1:5000 to 1:2000 scale mapping, soil sampling and prospecting will be carried out.

TARGET AREAS

The target areas proposed for exploration are shown on Figure 1 and are described in more detail below.

Area 1

The highest priority target area proposed for follow-up under the 1991 OPAP program are the extensions of the stratigraphy which hosts the mineralization discovered at Buller Lake under the 1990 OPAP program. The extent of this stratigraphy in Lutterworth, Anson and Somerville Twps. has been defined by government mapping (OGS Report 269, Map P. 3066) and reconnaissance work carried out by the applicants. The areas of favourable stratigraphy are shown on Figure 2. Prospecting, mapping and stream sediment sampling will be carried out over the favourable stratigraphy in order to locate new mineralization. Scale of this work will be 1:5000. Some more detailed work may be carried out on the Buller Lake claims to trace and further delineate the mineralization found in 1990 should an agreement to finance work on the property currently being negotiated not be successfully concluded.

Area 2

Area 2 (Figure 3) consists of an area of favourable carbonate stratigraphy in northern Cavendish Twp. Minor zinc mineralization has been discovered within the area by Northgate and St. Joseph Explorations (AFRO). Preliminary reconnaissance work will be carried out in this area to define the extent and nature of the favourable stratigraphy.

Area 3

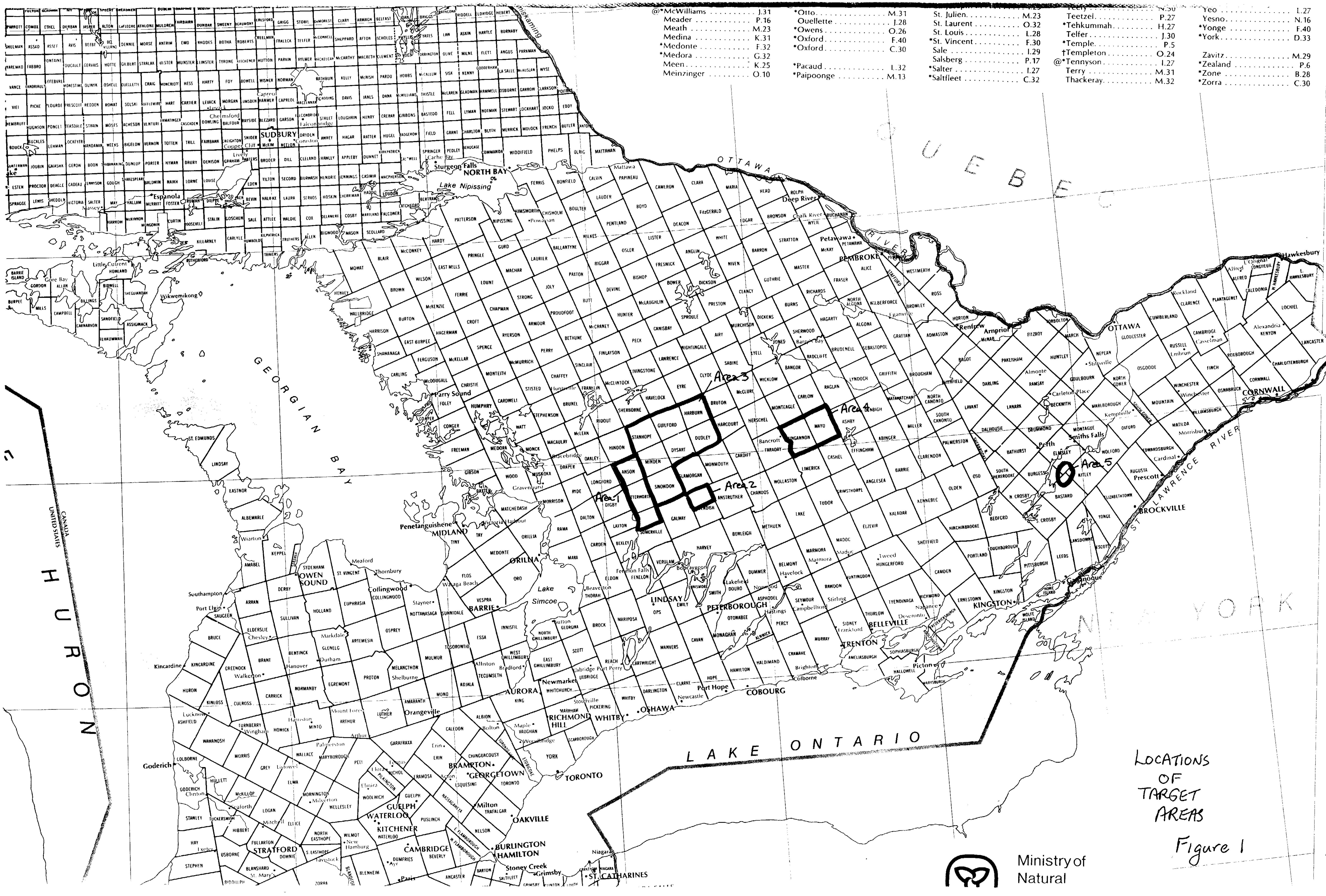
Area 3 (Figure 4) consists of marble terrane in Snowdon, Minden, Dysart, Dudley, Stanhope, Guilford and Harburn Townships. Regional geological compilation suggests that these rocks exist in a similar regional setting to the rocks in Lutterworth Twp. Initially preliminary reconnaissance will be carried out to determine if favourable stratigraphy exists within these townships. Follow-up work will be carried out if necessary.

Area 4 (Figure 5) consists of marble terrane in Dunagannon and Mayo Townships. Regional rock sampling by the OGS (MDC 28) returned 2 anomalous rock samples from this area. In addition lake sediment sampling by the GSC (OFR 899) returned a value of 370 ppm. Zn from Mayo Lake. Initially preliminary reconnaissance will be carried out to determine if favourable stratigraphy exists within these townships. Follow-up work will be carried out if necessary.

Area 5

Area 5 (Figure 6) consists of dolomitic marble terrane located in the southeast corner of South Burgess Twp. at its junction with South Elmsley Twp. and Kitly and Bastard Twps. A sample containing 360 ppm. zinc was collected by the GSC from Otter Lake during regional lake sediment sampling (sample 821197, OFR 899). Regional rock sampling by the OGS resulted in the collection of a sample containing 720 ppm. Zn from the east side of Otter Lake. (sample 1191, MDC 28).

Work under the 1990 OPAP program revealed the stratigraphy mapped in the Otter Lake area represents an extremely favourable environment for hosting base metal mineralization. It was recommended that a more detailed follow-up program consisting of regional drainage sampling, mapping and prospecting be carried out to better define the potential of this belt. This is proposed under the 1991 OPAP program.



LOCATIONS OF TARGET AREAS

Figure 1

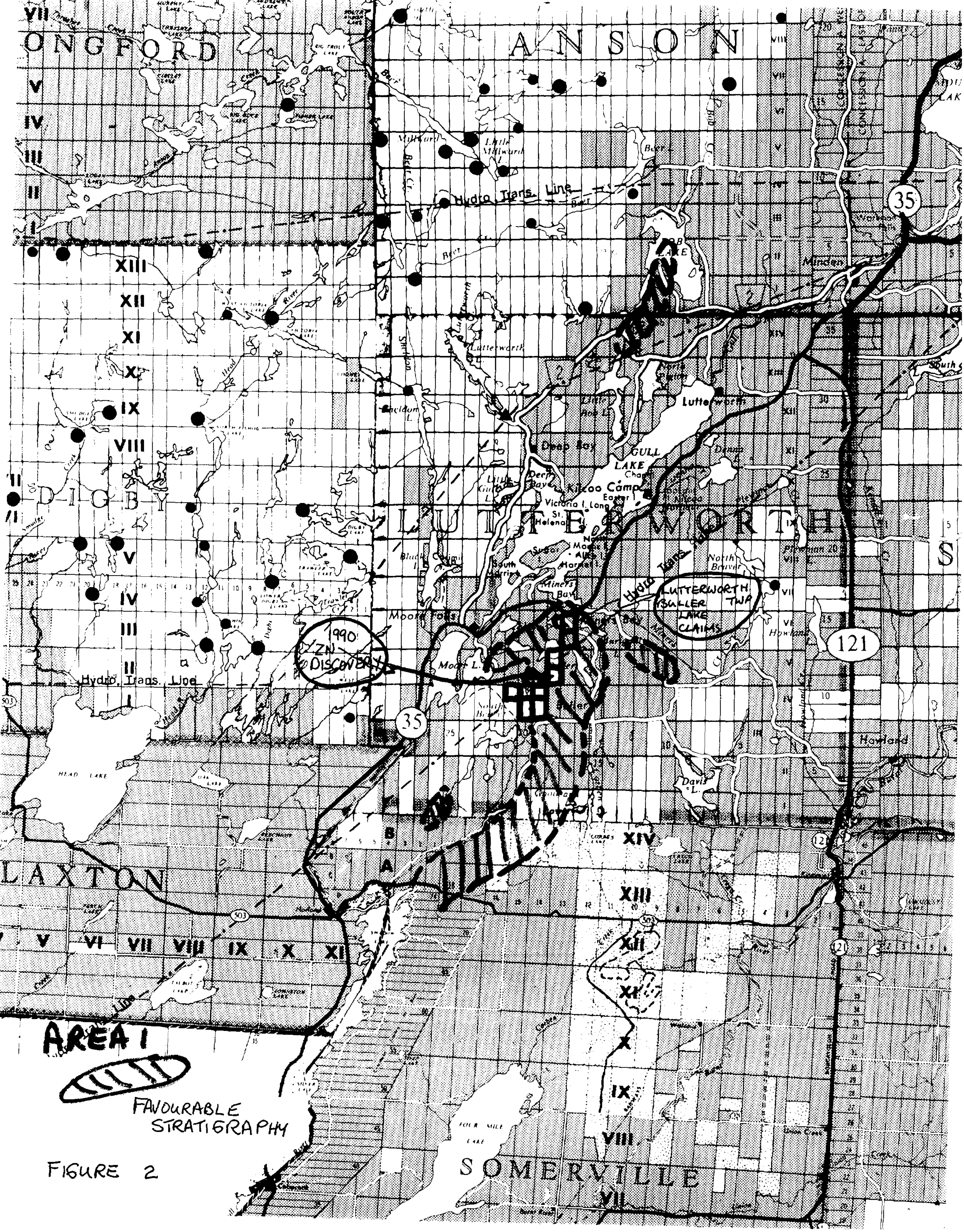
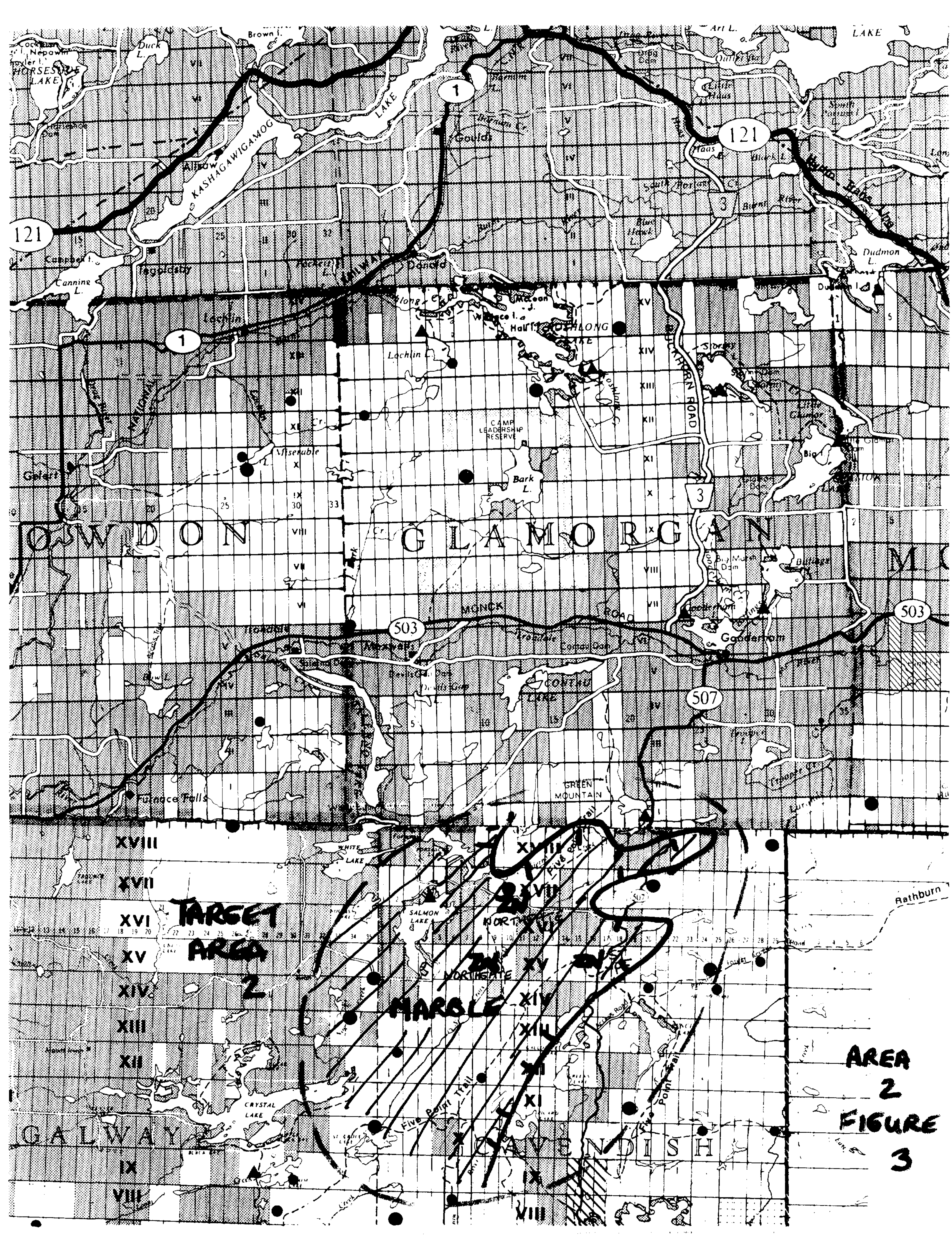
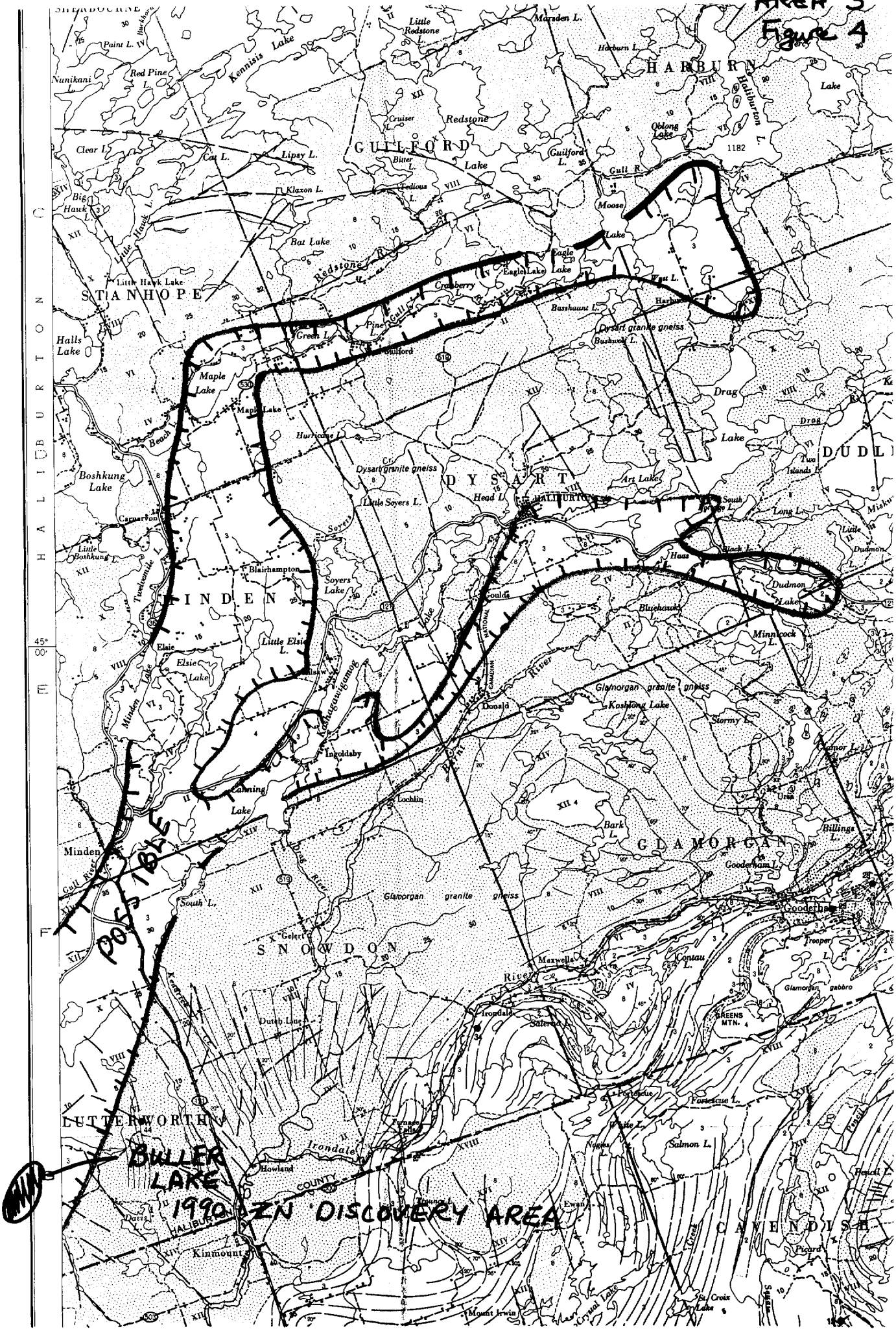

ONGFORD
ANSON
DIGBY
LUTTERWORTH
LAXTON
SOMERVILLE
Hydro Trans. Line
Hydro Trans. Line
Minden
Bob Lake
Lutterworth
Deep Bay
Gull Lake
Kilcoo Camp
Victoria I.
St. Helena I.
Miners Bay
Moore Falls
Moore L.
Head Lake
Four Mile Lake
Davis L.
35
35
121
503
990'
ZN
DISCOVERY
LUTTERWORTH
BULLER TWP
LAKE
CLAIMS
AREA I
FAVOURABLE
STRATIGRAPHY

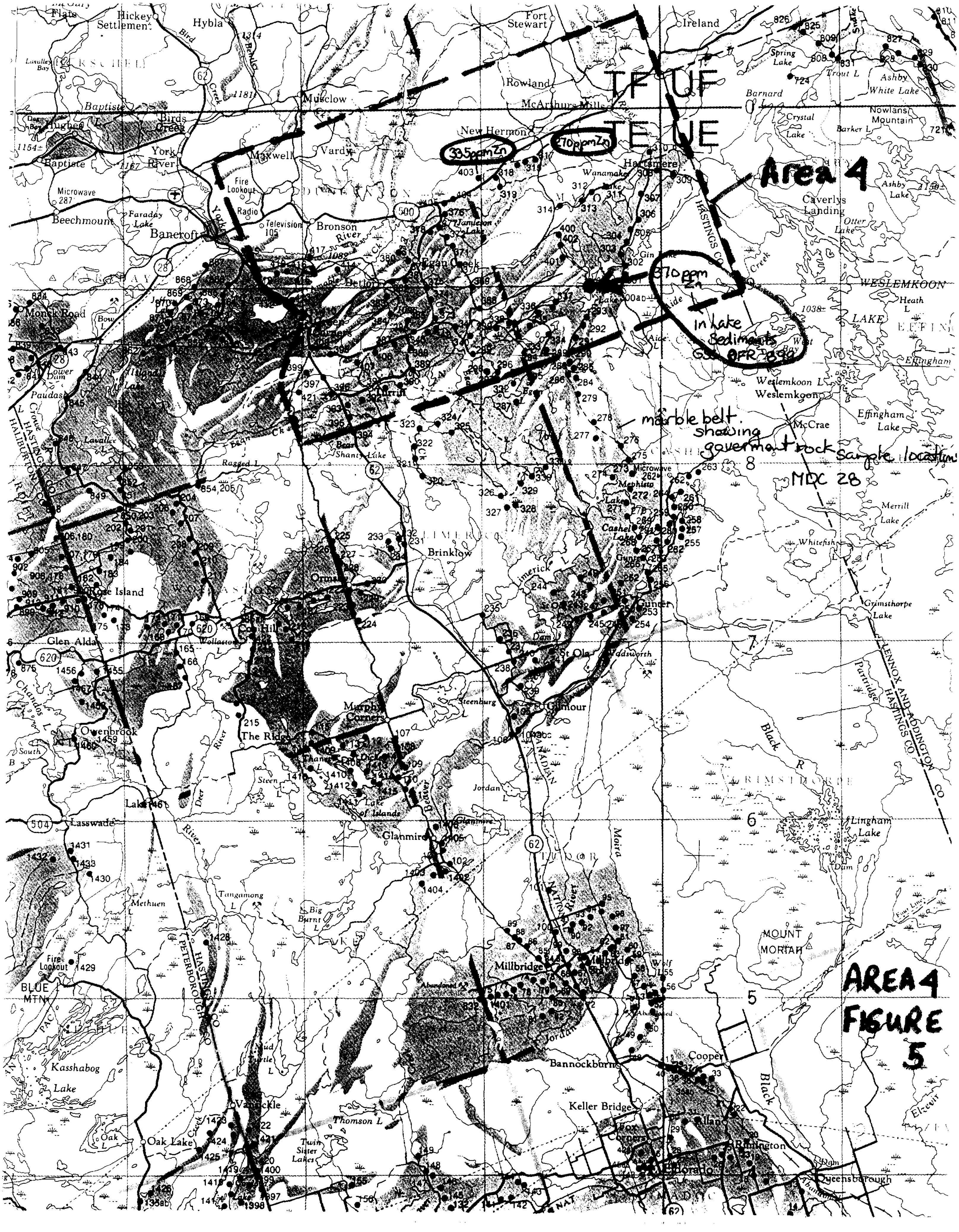
FIGURE 2

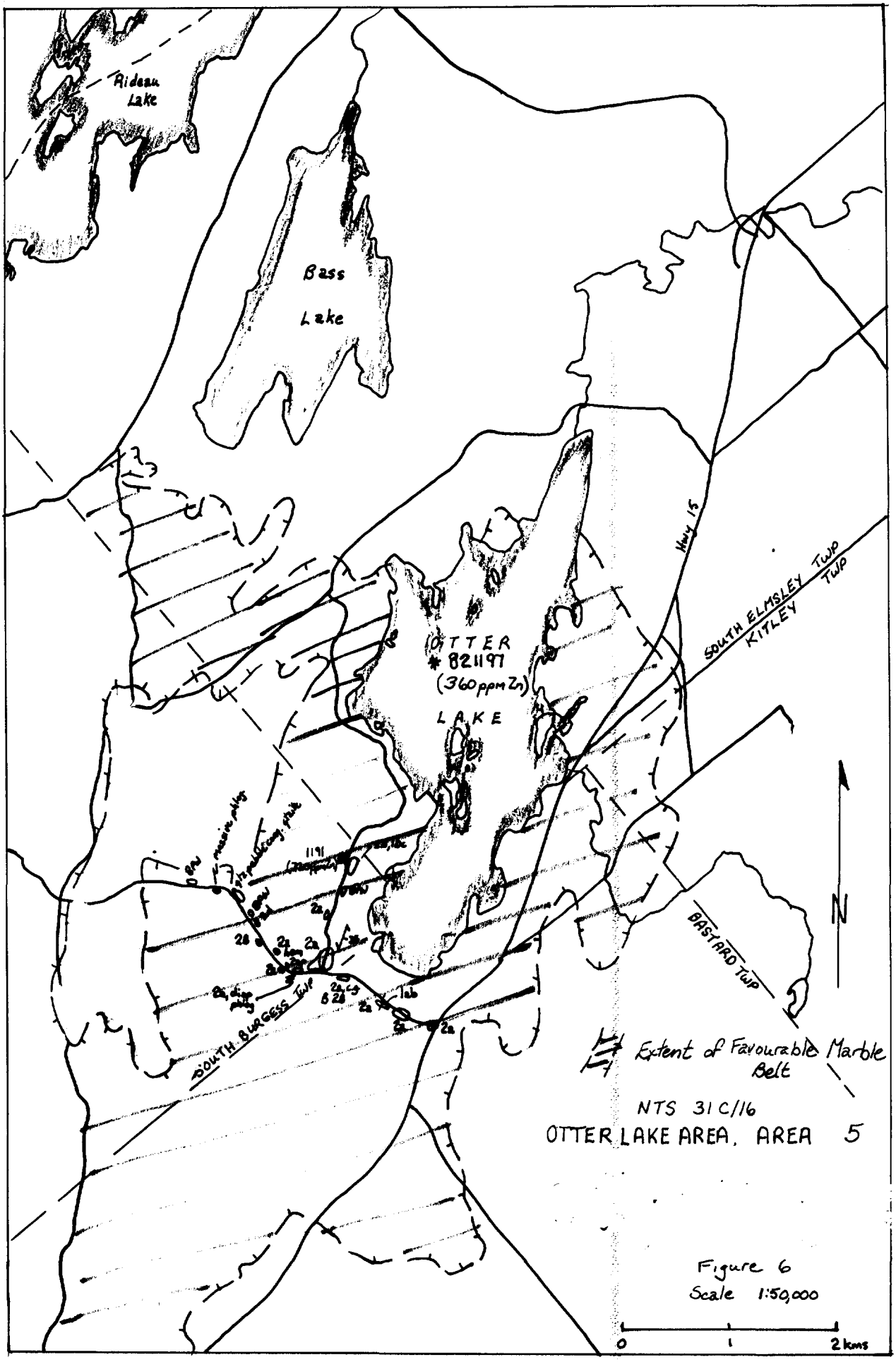


AREA 2 FIGURE 3

AREA 3
Figure 4




TF UF
TE UE
335ppm Zn
270ppm Zn
Area 4
570 ppm Zn in Lake Sediments GSC OFR 899
marble belt showing government rock sample locations
MDC 28
AREA 4
FIGURE 5
Bancroft
Hybla
Fort Stewart
Ireland
Maxwell
Vardy
New Hermon
Hartsmere
Musclow
Rowland
McArthurs Mills
Birds Creek
York River
Baptiste
Beechmount
Bronson
Egan Creek
Caverlys Landing
Weslemkoon
McCrae
Brinklow
Gunter
St Ola
Gilmour
Coe Hill
Rose Island
Glen Alda
Owenbrook
The Ridge
Murphy Corners
Glanmire
Lasswade
Millbridge
Bannockburn
Cooper
Keller Bridge
Eldorado
Queensborough
Vansickle
Oak Lake
Kasshabog Lake
Blue Mtn
Mount Moriah
Methuen
Monck Road
Steenburg
Thanet
Lake of Islands
Cashel Lake
Limerick
Paudash
Jordan
Lingham Lake
Grimsthorpe Lake
Effingham Lake
Merrill Lake
Ashby White Lake
Nowlans Mountain
Spring Lake
Trout L
Barnard
Crystal Lake
Hastings Co
Peterborough Co
Haliburton Co
Lennox and Addington Co
Hastings Co


Rideau Lake
Bass Lake
OTTER LAKE
* 821197
(360 ppm Zn)
Hwy 15
SOUTH ELMSLEY TWP
KITLEY TWP
BASTARD TWP
SOUTH BURGESS TWP
N
Extent of Favourable Marble Belt
NTS 31 C/16
OTTER LAKE AREA, AREA 5
Figure 6
Scale 1:50,000
0
1
2 kms

LAND TENURE

The applicants hold no mineral rights in any of the target areas at this time except for 9 claims in Lutterworth Township Lands within the proposed target areas are comprised of patented ground where both surface and mineral rights are held by the owner, patented ground where only surface rights are held by the owner, and some crown lands. Claims may be staked on the last two categories of land. An agreement with the landowner will have to be negotiated with the landowner to secure mineral rights to the first category of lands.

A large part of the early stages of the reconnaissance work proposed can be carried out by mapping and prospecting along public roads. Stream sediment sampling can also be carried out where drainages cross public access.

For more detailed follow-up work when access to private lands is required, it has been the applicants experience that permission to carry out preliminary prospecting, geologic mapping and stream sediment sampling on private lands can usually be readily obtained from the landowner. In over 8 years of carrying out reconnaissance exploration in southeastern Ontario the applicants have very seldom been refused permission to cross private lands once they explained the scope of their activities. Naturally, once something of interest is found on such lands by preliminary work, an option agreement will have to be negotiated with the owner.

PROPOSED PROGRAM

The proposed program consists of two phases of ground follow-up.

In areas without well defined targets initially a first pass of reconnaissance mapping, prospecting and stream sediment sampling will be carried out in each of the target areas largely along roads and concentrating in the immediate area of anomalous samples collected during the government geochemical surveys. Objectives will to be to define geological and structural favourability. Results of the stream sediment geochemistry will be used to further define the target area most favourable for hosting mineralization.

More detailed work will be carried out in areas where good potential has been demonstrated. This work will consist of more detailed mapping prospecting, and stream sediment and/or soil sampling generally at a scale of 1:5000 or 1:2000 in order to locate and define the extent of mineralization. This work may involve the establishment of a control grid.

The work is scheduled as follows.

Preliminary Reconnaissance

	Days by each applicant	Total man days
Area 2	3	6
Area 3	5	10
Area 4	5	10
Area 5	5	10

Detailed Reconnaissance

Area 1	7*	14*

* may be increased at expense of other areas to include detailed property work

Compilation,Interpretation and Reporting of Results

	5	10
TOTAL	30	60

PROGRAM BUDGET

	By each applicant	Project total
No. of working days @$100 (30 days)	$3000	(60) $6000
Analysis		
Stream sediments and soils by ICP for Sb,As,Bi,Co,Cu, Fe,Pb,Mn,Mo,Ni,Ag,Zn @$14.50 (200) samples	$2900	(400) $5800
Rocks geochem or assays for various elements as required	$1500	$3000
Travel by car @ $.30/km. (2000 km.)	$ 600	(4000) $1200
Food & Accommodation @ $55/day (25 days)	$1375	(50) $2750
Base maps, airphotos, misc. field supplies	$ 625	$1300
Total	$10000	$20000

Report of Activities

OPAP File Numbers OP91-613 & OP91-614
OPAP Grant Numbers OPG91-244 & OPG91-245

Toronto, Ontario
January 1992

A.T. Soever

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INTRODUCTION

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Despite the obvious mineral potential supported by the above examples, the Grenville has been avoided or explored only superficially by mineral exploration companies. It is believed that exploration geologists have generally been discouraged by the structural complexity and high metamorphic grade. As a result much of the Grenville province has not been intensely explored and excellent untested potential remains for a major discovery.

The exploration target is a metamorphosed sediment hosted base metal deposit and possible associated gold mineralization, similar in character to the deposits listed above. Given the strong structural controls imposed on these deposits during metamorphism and deformation, and the lack of intensive exploration, prospecting using structural geologic mapping and stream sediment geochemistry as a guide has proven in the past to have been very successful in locating surface mineralization.

A phased exploration program was initiated to follow up the existing government data base in order to locate new mineralization and define areas of high exploration potential within the Grenville Province.

Preliminary work, consisting of compilation of existing government data, was initiated during January 1990.

This compilation encompassed

1)GSC lake sediment geochemical data (OFR 899)
2)GSC till geochemical data (OFR 947)
3)OGS rock geochemical data (MDC 28)
4)regional geology from government mapping
5)assessment work data

This compilation work identified a number of target areas for exploration. The highest priority targets were followed-up by work under the 1990 OPAP program.

The follow-up program consisted of two phases of ground follow-up. Initially a first pass of reconnaissance mapping, prospecting and sampling was carried out in each of the target areas largely along roads and concentrating in the immediate area of anomalous samples collected during the government geochemical surveys. Objectives were to define geological and structural favourability of the target areas for hosting mineralization.

A second phase of more detailed work was carried out in the Buller Lake area where sphalerite mineralization had been discovered and good potential had been demonstrated by results of the first pass work. Four claims had been staked in this area prior to initiation of the Phase 1 Preliminary Reconnaissance program. These claims covered soil geochemical anomalies that had been defined by Northgate the previous holders of the ground. An additional three claims were staked in early June as a result of the discovery of mineralization during Phase 1 work.

A program consisting of linecutting, detailed structural mapping and soil sampling was carried out in 1990 to delineate the extent of the mineralization on the claims comprising the Buller Lake Property and adjacent ground where permission had been obtained to carry out work. A limited amount of regional work consisting of reconnaissance mapping and drainage sampling was also carried out. Results of the above work are described in Report of Activities, Grenville Reconnaissance Program, OPAP File Numbers OP90-207 and OP90-208 by A. Soever and R.G. Jackson, January 1991.

Attempts were made to option the property in the winter and spring of 1990-1991 in order to finance further work. These efforts however, were not successful.

An application was made for OPAP assistance in 1991 by A. Soever and R. Jackson explore the extensions of the Buller Lake stratigraphy in Lutterworth, Anson and Somerville Townships. In addition 4 other areas were proposed for preliminary reconnaissance work. Provision was also made to carry out further exploration work on the Buller Lake Property should an agreement to finance work on the property, which was being negotiated at the time of the 1991 OPAP application, not be successfully concluded.

Due to the fact that R. Jackson accepted a contract in August of 1991 to work outside the country and returned the unused portion of his OPAP grant (OPG91-245), the remainder of the proposed 1991 program was carried out entirely on (OPG91-244) by A.Soever. Because of the loss of manpower and funding it was impossible to tackle all of the 5 areas in the original proposal. As well, the inability to option the Buller Lake Property, a possibility considered in the original proposal, made it desirable to do some additional detailed work on and around our claims to increase their saleability.

In light of the above, a modification of the original program was filed with OPAP by letter dated August 16, 1991 proposing modifying the original program to include only work in Area 1, the Buller Lake Area.

The modified work program consisted of

1) detailed 1:1000 scale structural mapping and prospecting to extend the mineralization discovered in 1990 on the Buller Lake Property
2) rock geochemical sampling to determine metal zonation patterns and alteration in and around the mineralization
3) extension of 1:2000 scale mapping coverage to determine extent of favourable geology and structure
4) possible soil geochemical sampling if warranted to trace mineralization and favourable stratigraphy
5) reconnaissance mapping, prospecting and geochemical sampling further along strike in the favourable stratigraphy

Completion of the above modified work program was expected to take at least the originally budgeted 30 days, except that all work was concentrated in Area 1, in and around the Buller Lake Area.

Results of the work are described in detail below. Work carried out is summarized in the time summary and detailed on the daily traverse report forms, both included as Appendix A. Complete sample analyses and descriptions are included as Appendix B.

BULLER LAKE PROPERTY

Introduction

Work on the Buller Lake Property in 1991 consisted of detailed geologic mapping and prospecting to follow-up results of 1990 work. Detailed 1:1000 scale mapping and prospecting was carried out in the central part of the property on the north half of Lot 19, Concession IV, Lutterworth Twp where 1990 soil sampling had defined several soil geochemical anomalies. In addition, 1:2000 scale mapping was carried out over extensions of the host marble stratigraphy on Lots 17 and 18, Con. IV (the Winkelaar and Gaspick Properties) and Lot 17, Con VI (claims staked in 1991).

Aim of this work was to

1) investigate the nature of the soil geochemical anomalies obtained in 1990
2) determine the extent of the mineralization discovered in 1990
3) further define the structural setting of the mineralization
4) define trace element zonation patterns in the mineralization in order to define the location of the centre of the mineralizing system.

Location and Access

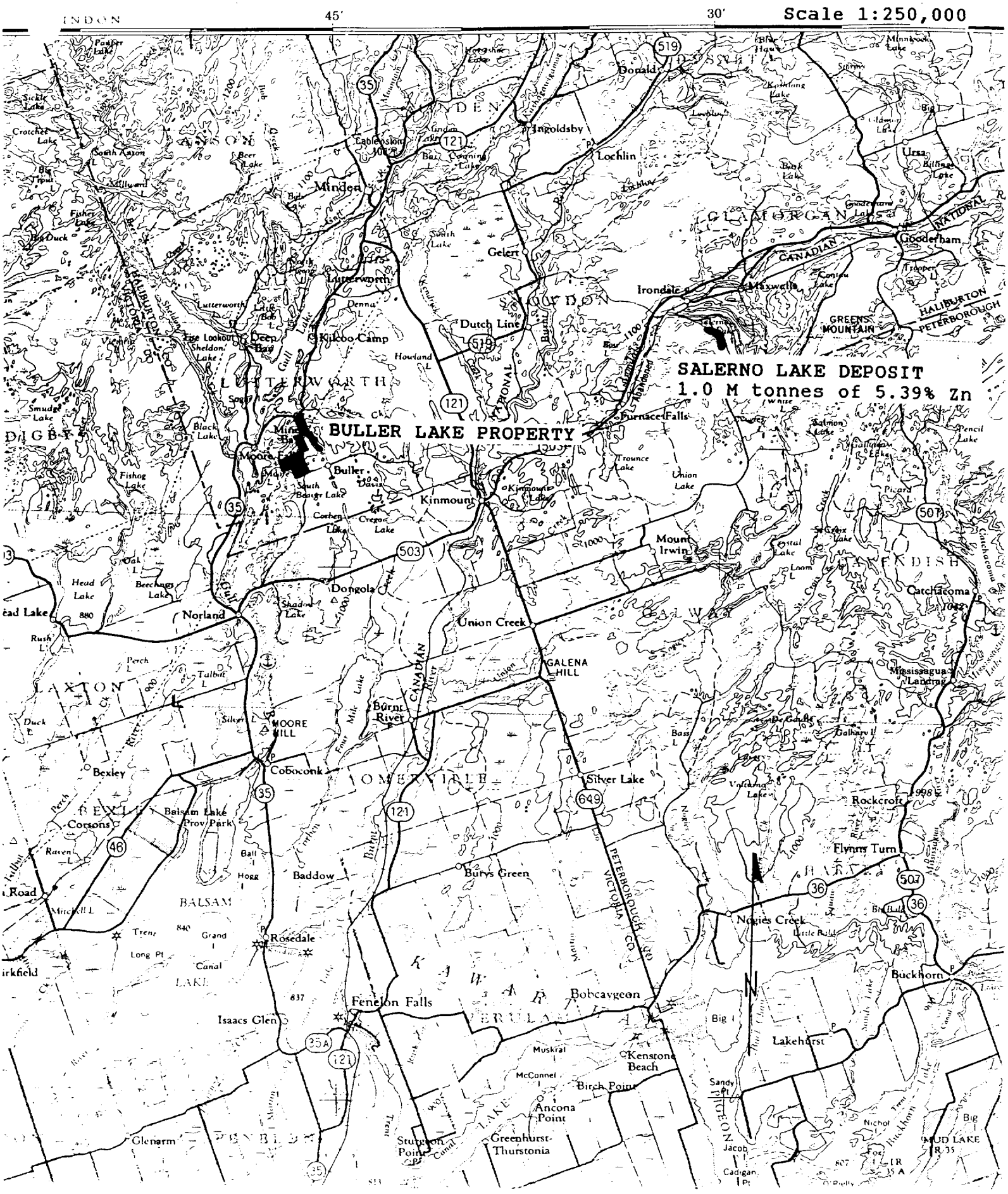
The Buller Lake Property is located in Lutterworth Township, Haliburton County about 140 kilometres northeast of Toronto, Ontario. The property is located 9 km. northeast of the town of Norland.

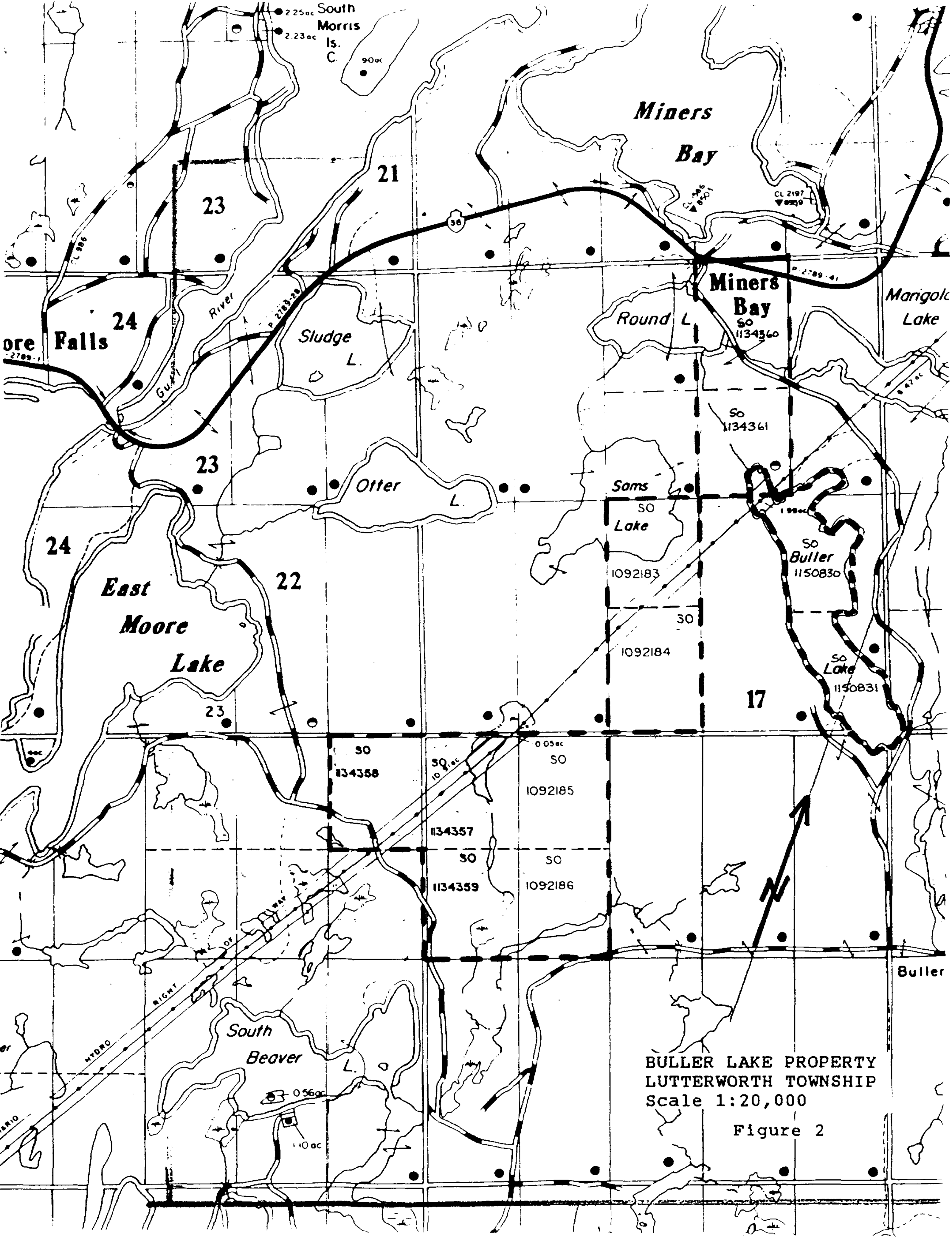
Access is via Highway 503 to a point about 2 km. east of Norland, thence northerly along the Buller Lake Road for about 6.4 km to a point where the road runs along the southern edge of the claim group. Property location and access is shown on Figure 1.

Property

The property consists of eleven unpatented mining claims located on crown lands. These total 210.37 hectares (520 acres). Permission was obtained from the Wessell family (Lots 19 to 22, Con. V), Mr. & Mrs. F. Winkelaar (Lot 18, Con.IV) and Mr.& Mrs. N. Gaspick (Lot 17, Con IV) to carry out prospecting and detailed geologic mapping on their properties adjacent to the claims. The property status is shown on Figure 2 and Table 1.

BULLER LAKE PROPERTY, LOCATION Figure 1





BULLER LAKE PROPERTY
LUTTERWORTH TOWNSHIP
Scale 1:20,000

Figure 2

Buller Lake Property, Lutterworth Township Table 1
Property Status

Claim	Lot	Concession	Acres	Hectares
SO 1092183	N 1/2 18	V	50	20.2
SO 1092184	S 1/2 18	V	50	20.2
SO 1092185	N 1/2 19	IV	50	20.2
SO 1092186	S 1/2 19	IV	50	20.2
SO 1134357	N 1/2 20	IV	50	20.2
SO 1134358	N 1/2 21	IV	50	20.2
SO 1134359	S 1/2 20	IV	50	20.2
SO 1134360	N 1/2 17	VI	50	20.2
SO 1134361	S 1/2 17	VI	50	20.2
SO 1150830	N 1/2	Buller Lake	+/-40	16.2
SO 1150831	S 1/2	Buller Lake	+/-30	12.1
TOTAL			520	210.4

Previous Work

The claims forming part of the property have previously seen exploration by a number of companies. Most recently the claims were explored for zinc mineralization by St. Joseph Explorations in the late 1970's early 1980's, and Northgate Exploration Ltd. in the mid 1980's.

St. Joseph carried out magnetometer, VLF, soil geochemical, and geological surveys. Northgate carried out magnetometer, VLF, soil geochemical and geological surveys on the claims. Some of the soil geochemical anomalies were later trenched.

The results of St. Joseph's geological and geochemical work were not filed for assessment so are not available. Analysis of Northgate's work revealed that the quality of the work in general was poor. The quality of the geologic mapping is such that it does little to define the setting of their geochemical anomalies with respect to specific rock units or structures. Most of the trenching carried out as a follow-up to the soil geochemistry was carried out over rusty paragneiss bands in the calcitic marbles while anomalies over the geologically more favourable dolomitic marbles appear to have been unexplored.

In March 1990 four claims were staked covering Lot 18, Concession V and Lot 19, Concession IV to secure the anomalies.

Permission to prospect the intervening ground was obtained from the Wessel family, owners of Lots 19-22, Concession V. In May 1990 reconnaissance mapping and prospecting was carried out in the area of the Northgate soil geochemical anomalies and their strike extension onto the Wessel ground. This work resulted in the discovery of significant new zinc mineralization on the south part of Lot 19, Concession V. Analysis of a grab sample of this mineralization gave

5.43% Zn. Anomalous levels of Cu, Cd, Hg, Pb, and Sb were also present.

An additional three claims were staked in June 1990 to cover the possible strike extensions of the mineralization and to provide additional ground for future access and infrastructure.

Linecutting was carried out on the claims in September-October 1990, followed by 1:2000 scale mapping covering the claims and the south part of Lot 19, Concession V. Detailed soil geochemical surveys were carried out over the mineralization and strike extensions in November 1990.

Evaluation of soil geochemical results showed that, as expected anomalous zinc values were obtained over the mineralized dolomitic marble horizon. Zinc values over the showings in the central part of Lot 18, Con. V ranged up to 1916 ppm. and are locally associated with Pb values.

Another strong zinc anomaly was located over minor zinc mineralization on the northern limit of Lot 19, Con. IV. This anomaly has multiple values > 1000 ppm. Zn and has a much stronger Pb, Cu, Sb, and Hg association than the anomaly over the mineralization in Lot 18, Con V. There appears to be a halo of high background to anomalous values in Zn, Pb and Sb in the soils over the adjacent rocks.

Regional Geology

The Buller Lake Property is located over the northwestern edge of Grenville supergroup rocks near their contact with gneisses of the middle Precambrian Central Gneiss Belt. The property is underlain by a sequence of dolomitic marbles, which appear to overly a sequence of calcitic marbles, quartzites, rusty paragneisses and amphibolites. Structure is complex as the area is situated within the Denna Lake Structural Complex, a highly deformed zone at the contact between the supergroup rocks and the Central Gneiss Belt.

Current Work Program

The 1991 OPAP funded work program on the Buller Lake Property consisted of detailed mapping and prospecting.

Work was concentrated in 5 areas on the property. These are shown on Sheet 1 (in Pocket) and are tabulated below.

AREA 1

Area 1 is located in the central part of the Buller Lake Claims largely on the north half of Lot 19, Con IV.

The area was covered by a soil geochemical survey in 1990 (see Figure 3)which located an unusually strong zinc anomaly over minor zinc mineralization on the northern limit of Lot 19, Con. IV. 1:2000 scale mapping and prospecting in 1990 had shown this area to be structurally complex. It was felt that the mineralization observed did not fully account for the soil geochemical results.

Detailed 1:1000 scale mapping and prospecting was carried out covering this area to determine the cause of the 1990 soil geochemical values and to better define the structure.

AREA 2

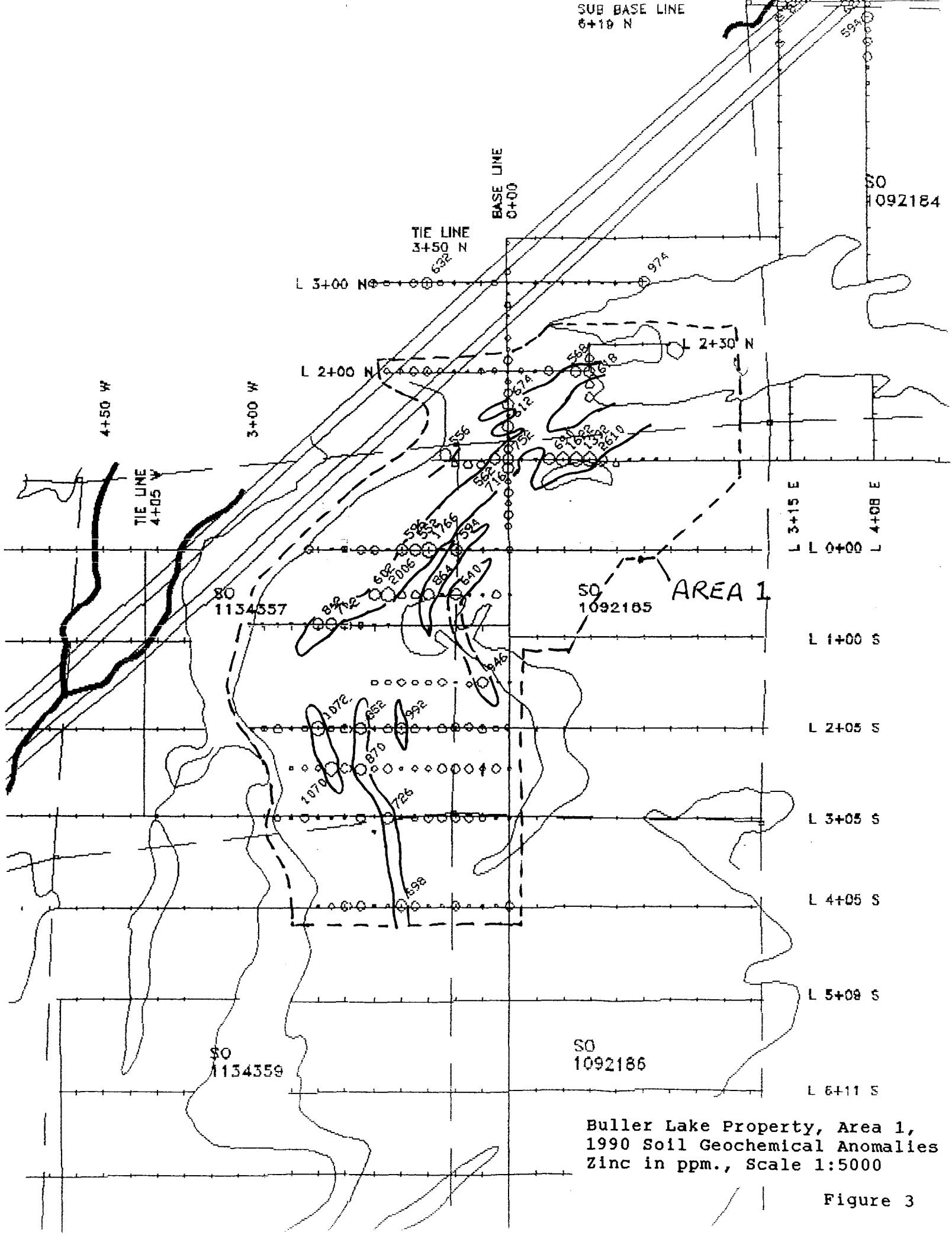
Area 2 is comprised of patented ground located to the southeast of the Buller Lake claims. Permission was obtained from Mr. & Mrs. F. Winkelaar (Lot 18, Con.IV) and Mr.& Mrs. N. Gaspick (Lot 17, Con IV) to carry out prospecting and detailed geologic mapping on their properties.

This area was mapped and prospected at 1:2000 scale to explore the extensions of the Buller Lake stratigraphy which extend onto this ground and to better determine the structural geologic setting of the mineralization.

AREA 3

Area 3 is comprised of the south half of Lot 17, Con. VI. This is covered by mining claims staked in the spring of 1991.(Miner's Bay Lodge Claims)

This area was mapped and prospected at 1:2000 scale to explore the extensions of the Buller Lake stratigraphy which extend onto this ground and to better determine the structural geologic setting of the mineralization.



Buller Lake Property, Area 1,
1990 Soil Geochemical Anomalies
Zinc in ppm., Scale 1:5000

Figure 3

AREA 4

Area 4 is located on mining claim SO 1134361 located on Lot 18, Con. V.

Fill in 1:2000 scale mapping and prospecting was carried out in this area to better define the structure and stratigraphy in this area.

AREA 5

Area 5 is located just south of Area 1.

Fill in 1:2000 scale mapping and prospecting was carried out in this area to trace the geology of Area 1 to the southeast.

Linecutting

During the period from July 9, 1991 to July 11, 1991, and on September 14, 1991 a total of 8 man days were spent establishing 10,399 metres of grid line in the 5 above areas on the Buller Lake claims and adjacent ground, where permission to map and prospect had been obtained. The lines were established by flagging, chaining and compassing. In Area 1 the grid lines were spaced at 50m and the lines were chained and flagged at 30m intervals. In Areas 2 and 3 the grid lines were spaced at 100m and the lines were chained and picketed at 30m intervals. Existing grid lines were used for mapping control in areas 4 and 5.

BULLER LAKE 1991 LINECUTTING Table 2

AREA	LINE	FROM	TO	METRES
1	L 2+40E	100	196	96
1	L 1+80E	100	173	73
1	L 1+20E	0	174	174
1	L 0+60E	-100	200	300
1	L 0+47W	-100	200	300
1	L 1+02W	-100	91	191
1	L 1+50W	-100	74	174
1	L 2+17W	-100	10	110
1	L 1+50S	-300	0	300
1	L 2+55S	-263	0	263
1	L 3+55S	-235	0	235
2	L 1+00N	660	1079	419
2	L 3+00E	100	195	95
2	L 3+30E	-600	100	700
2	L 3+50E	100	206	106
2	L 4+00E	-660	184	844
2	L 4+50E	100	176	76
2	L 5+00E	-720	145	865
2	L 5+50E	100	180	80
2	L 6+00E	-300	198	498
2	L 6+50E	100	180	80

BULLER LAKE 1991 LINECUTTING

Table 2
contd.

AREA	LINE	FROM	TO	METRES
2	L 7+00E	-480	100	580
2	L 8+00E	-282	100	382
2	L 9+00E	-300	100	400
2	L 10+00E	-345	100	445
3	L 6+04E	1110	1200	90
3	L 12+00N	600	900	300
3	L 7+00E	1200	1740	540
3	L 13+00N	700	870	170
3	L 14+00N	700	1091	391
3	L 15+00N	700	1100	400
3	L 16+00N	700	1102	402
3	L 17+00N	700	1020	320
		TOTAL		10399

Geologic Mapping

Detailed geologic mapping was carried out on the grid. In Area 1 the mapping was carried out at a scale of 1:1000. In the other areas mapping was carried out at 1:2000 scale. All outcrops, including those between lines were mapped.

Where mineralization or potentially mineralized rock was noted, rock samples were collected. In addition a representative suite of rocks was collected from the various rock units on the property. Forty-nine rock samples were collected from the grid. The rocks were analyzed for major and trace elements, so as to define the character of the host rocks and the mineralization.
The rocks were analyzed for Al2O3%, BaO%, CaO%, Fe2O3%, K2O%, MgO%, MnO%, Na2O%, P2O5%, SiO2%, TiO2%, LOI%, Ag ppm., As ppm., Bi ppm., Cu ppm., Cd ppm., Hg ppb., Mo ppm., Pb ppm., Sb ppm., Se ppm., and Zn ppm. by a variety of methods.

Drainage Sampling

During the geologic mapping, organic bank samples were collected from streams and bogs in the area of the observed mineralization to determine the geochemical signature in this sample medium. A total of 15 samples were collected from the property.
The -80° fraction of the samples was digested using a nitric-aqua regia acid mixture and then analyzed for Co, Cu, Fe, Mn, Mo, Ni, Pb, and Zn using inductively coupled plasma spectrometry and for Ag, As, Bi, and Sb using atomic absorption spectrophotometry.

A breakdown of the time spent on the activities described above is presented in the time summary and detailed on the daily traverse report forms, both included as Appendix A. Complete sample analyses and descriptions are included as Appendix B.

Results

General Property Geology

Results of the geologic mapping carried out on the Buller Lake Property are compiled on the Buller Lake Area, Geology Map (Sheet 2, in pocket).

The eastern part of the property is underlain by a sequence of dolomitic marbles, silicated dolomitic marbles and quartzites. These appear to conformably overly a sequence of calcitic marbles with interbands of rusty paragneiss and granitic gneiss. The calcitic marble sequence has been intruded by a number of pegmatite bodies. A few pegmatites have also intruded the dolomitic marble sequence most commonly in the noses of folds.

Structure is complex. All the rock units generally strike north-south and dip easterly at 20-30 degrees on the southern part of the claims. On the central part of the claims regional strike is northeasterly and dip is 20-30 degrees to the southeast. On the northern part of the claims north of Buller Lake strike is north-northwest and dip varies from southwesterly to northeasterly.

Detailed structural mapping on the property and regional geology seems to suggest that the rocks have undergone at least four phases of folding. The earliest phase of folding appears to have been isoclinal about N-S trending shallowly east dipping axial planes. These first phase folds were then refolded by a second phase of isoclinal or nearly isoclinal folding about generally east-west trending fold axes. This was followed by a third phase of open folding about generally northeast-southwest fold axes. These fold axes have been gently warped about the northwest-southeast trending axes of fourth phase folds.

This structural interpretation seems to best explain the distribution of rock types on the property and regionally. Further work is required to confirm this structural hypothesis and to more precisely define the locations of fold axes.

The distribution of rock types on the property when unravelled using the structural hypothesis above seems to suggest that the property is underlain by a fairly narrow stratigraphic interval.
Stratigraphy of the property is shown on Table 3.

Buller Lake Property Stratigraphy — Table 4

Unit	Estimated Thickness
Silicated Dolomitic Marbles	Unknown, top of sequence not seen in map area
Quartzite/Silicated Dolomitic Marbles	1 - 15 metres
Dolomitic Marble (Mineralized unit)	10 - 50 metres
Quartzite/Massive Diopside (Lower Quartzite)	1 - 10 metres
Fe-rich Dolomitic Marbles	Unknown, bottom of sequence not seen
Fault Contact	
Calcitic Marble & Paragneiss	Unknown, bottom of sequence not seen in map area

Zinc mineralization has been discovered within the dolomitic marble unit in several areas on the property.

Disseminated sphalerite occurs within the dolomitic marbles in the area extending from 1+20 W to 1+50 E at about 2+30 N. Best values were obtained from samples from the eastern end of this showing on the edge of a large swamp. Grab samples grading 2.17% Zn, 3.25% Zn and 4.68% Zn were collected from this area in 1990. Minor disseminated sphalerite was also discovered along strike in the same dolomitic marble unit along the edges of the swamp for an additional distance of 550 m. to the east. Besides zinc, the mineralization contains anomalous levels of Pb, Cu, Sb, Bi, Ag and Hg.

Scattered disseminated sphalerite mineralization also occurs within the dolomitic marbles in the area from 6+00 N to 6+90 N from 2+50 E to 5+50 E.

Other occurrences of sphalerite mineralization occur between L 0, 0+75N and L 1+00N, 0+75E south of the main showing. Small isolated occurrences of disseminated sphalerite also occur at 2+17 S, 1+54 W and 8+84 S, 0+52 E.

Minor sphalerite mineralization also occurs on the northern part of the property just east of Sam's Lake and north of Buller Lake.

Area 1 Geology

The detailed geology of Area 1 at 1:1000 scale is shown on Sheet 3 (in pocket).

The mineralized dolomitic marble which hosts the main Buller Lake zinc mineralization was traced south through area 1. It is overlain to the east by a sequence of silicated dolomitic marbles, quartz-diopside rock and quartzite. It is underlain by a silicated dolomitic marble/quartzite unit(Lower quartzite). This unit is exposed in the nose of a third phase antiform between L0 and L2N west of BL 0 and along the edge of a swamp on the west end of L 4+05S. This unit is not exposed between the dolomitic marbles and the underlying calcitic marbles on L 2+05S indicating they are in fault contact with the overlying dolomitic marbles. A unit of Fe-rich dolomitic marbles is exposed beneath this silicated dolomitic marble/quartzite marble/quartzite unit in the nose of the third phase antiform between L0 and L2N west of BL 0. This unit is unique in that it contains an average of >1% Fe_2O_3 versus typical values of 0.4 to 0.7% for the other dolomitic marbles.

Several new occurrences of sphalerite mineralization were found during mapping of Area 1. Significant zinc mineralization was discovered on the north edge of a small swamp at L 1+00N, 0+75E associated with a strong zinc soil geochemical anomaly defined in 1990. The mineralization consists of disseminated sphalerite and pyrite in a diopsidic dolomitic marble. A grab sample of this mineralization (sample 4117) returned a value of 5400 ppm. Zn with anomalous values in Ag, As, Cu, Cd, Hg, Pb and Sb.

Another significant zinc occurrence was discovered on the south edge of a large swamp at L 1+63N, 1+38E. The mineralization consists of disseminated sphalerite and sulphosalts in a diopsidic dolomitic marble. Grab samples of this mineralization (samples 4121 and 4122) returned a values of 1.30% and 1.34% zinc with anomalous values in Ag, As, Bi, Cu, Cd, Hg, Pb and Sb.

Minor zinc occurrences were also discovered at 1+60N, 0+27E, and 0+03S, 0+93W within Area 1.

Area 2 Geology

The detailed geology of Area 2 at 1:2000 scale is shown on Sheet 4 (in pocket).

The central part of Area 2, the Winkelaar and Gaspick Properties is underlain by a white medium grained serpentinous dolomitic marble. Appreciable amounts of diopside are present within this unit so it verges on being classified as a silicated dolomitic marble. Geologic mapping suggests that this marble may be the lateral equivalent of the mineralized dolomitic marble as exposed in this area. This marble is overlain to the south by a sequence of rusty gneisses and calcitic

marbles. The contact between the two rock types is marked by a unit of rusty schist which has a mylonitic fabric indicating that the overlying unit is in fault contact with the dolomitic marbles. Two samples of this rusty gneiss
(samples 4124 and 4125) show this unit is anomalous in Cd, Hg, Sb and Zn relative to other rusty gneisses sampled in the rest of the area. This may indicate that the inferred fault zone has intersected mineralization at depth.

The eastern strike extension of the mineralized dolomitic marble unit is exposed along the south edge of a swamp in the northern edge of Area 2. Several new zinc occurrences were located within this unit during the current mapping. These occur at 3+45E, 1+97N, (sample 4131) 1500 ppm. Zn, 4+43E, 1+66N, (sample 4132) 330 ppm. Zn, 5+52E, 1+57N, (sample 4133) 3200 ppm. Zn, and 6+74E, 1+75E, (samples 4134,4135) 2150 and 2050 ppm. Zn.

The exposure of the mineralized unit is restricted to the edge of the swamp. The mineralized dolomite dips gently south and is overlain by a unit of silicated dolomitic marbles and quartzites.

Area 3 Geology

The detailed geology of Area 3 at 1:2000 scale is shown on Sheet 5 (in pocket). The entire Buller Lake stratigraphic section is exposed in Area 3. The area covers a section of the northern part of the Buller Lake marble belt.

The northeastern corner of Area 3 is underlain by paragneisses and granitic intrusive rocks of the lower part of the Buller Lake stratigraphy. The contact of these rocks with the dolomitic marbles is marked by a mylonitic unit which trends northwest and has been folded by third phase open folds. This unit is overlain by a section of dolomitic marbles which are a strike extension of the dolomitic marbles seen in the central part of Area 2. Minor sphalerite mineralization was discovered in these marbles between lines 15N and 16N, between 8+10E and 9+00E.
These dolomitic marbles are overlain by a synform of silicated dolomitic marbles and quartzites. To the southwest, these rocks overly the mineralized dolomitic marble horizon as exposed east of Sam's Lake. Minor sphalerite mineralization was observed in this unit at 6+89E 12+60N (sample 4137, 1400 ppm. Zn).

The Fe- rich dolomitic marbles, the lowest part of the Buller Lake stratigraphy are exposed along the shore of Sam's Lake.

Area 4 Geology

The detailed geology of Area 4 at 1:2000 scale is shown on Sheet 6 (in pocket).

Fill in mapping was carried out in this area to resolve complex

structure. Outcrops more than 25m off-line which were not mapped in 1990 were mapped in order to be able to trace units between lines. The 1991 mapping was able to resolve some of the complex structure in this area.

Fe-rich dolomitic marbles of the lower part of the stratigraphy are exposed on the southeast shore of Sam's Lake in the northern part of the area. The lower silicated dolomitic marble/quartzite unit and the mineralized dolomitic marble overly this unit to the south. The southern part of the area is underlain by silicated dolomitic marbles which are complexly folded. Chalcopyrite-sulphosalt mineralization was observed within a serpentinous dolomitic marble unit interfolded with the quartzites of the silicated dolomitic marble unit at 5+31E, 4+43N (sample 4148, 800 ppm. Cu, 28 ppm. Bi, 98 ppm. Sb, and 3.5 ppm. Ag.

Area 5 Geology

The detailed geology of Area 5 at 1:2000 scale is shown on Sheet 6 (in pocket).

Limited mapping and prospecting was carried out in this area to tracing the lower quartzite unit and the mineralized dolomitic marble unit south of Area 1.

Bedrock Geochemistry

Geochemical results from the forty-nine rocks collected from the grid in 1991 were merged with the results of sampling carried out in 1990 resulting in a database of 88 samples. The rocks were grouped by rock type and average values for each rock type were calculated.

Results of this analysis are presented in Table 5 below.

TABLE 5

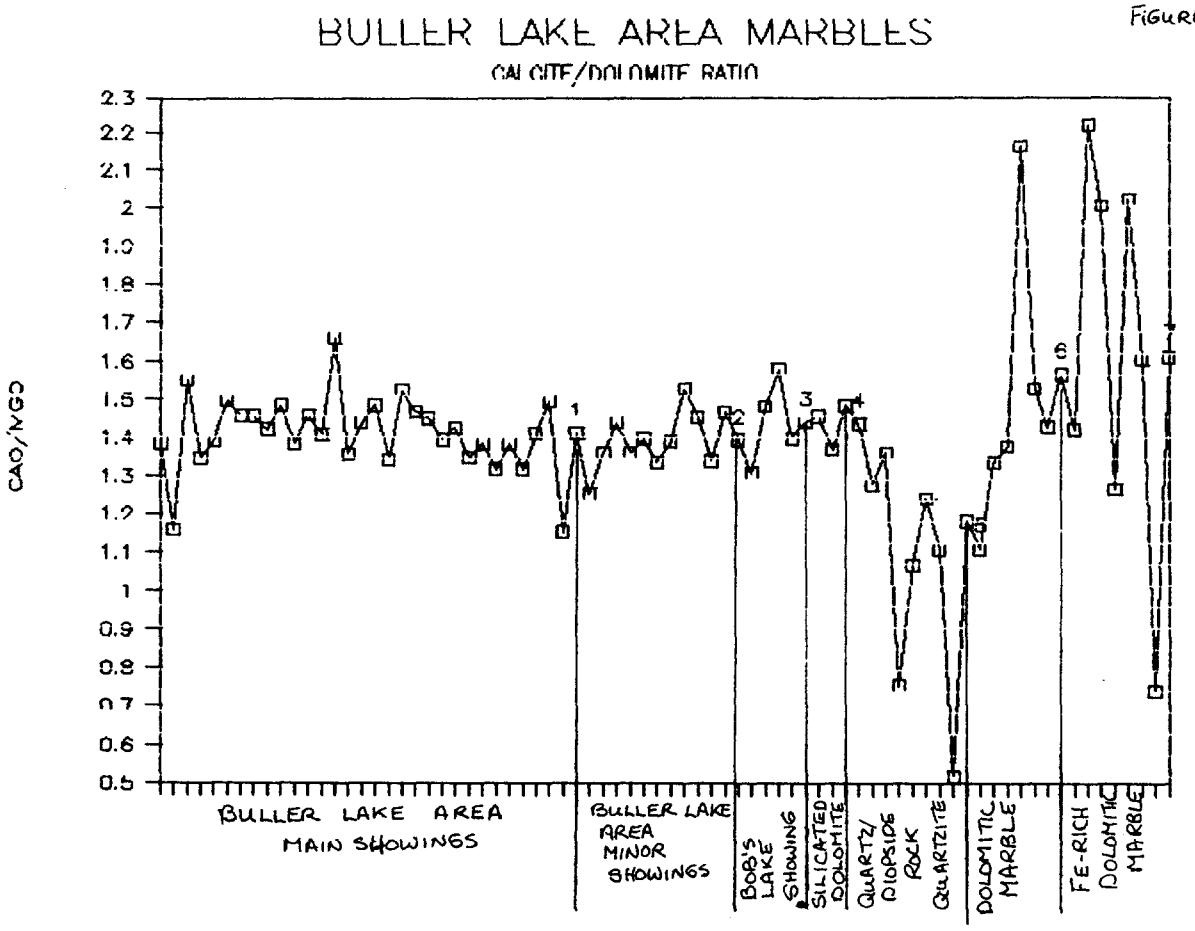
BULLER LAKE AREA BEDROCK GEOCHEMISTRY COMPILATION

AVERAGE COMPOSISTION OF VARIOUS ROCK TYPES

		MINERALIZATION		NON- MINERALIZED ROCKS								
		BULLER LAKE MAIN SHOWINGS	SCATTERED MINOR SHOWINGS	BOB'S LAKE SHOWING	SILICATED DOLOMITIC MARBLES	QUARTZITE DIOPSIDE ROCK	DOLOMITIC MARBLES	FE-RICH DOLOMITIC MARBLES	HORNBLENDE BIOTITE GNEISS	CALCITIC MARBLE	OTHER ROCKS	RUSTY GNEISSES
NUMBER OF SAMPLES		31	11	4	3	8	5	7	4	2	3	10
ELEMENT												
AL203	%	0.24	0.22	0.64	0.12	0.27	0.23	1.76	12.35	2.52	16.39	11.55
BAO	%	0.009	0.010	0.049	0.005	0.043	0.005	0.017	0.156	0.008	1.410	0.100
CAO	%	29.93	29.11	27.60	29.31	13.76	31.23	28.27	5.66	36.03	2.27	2.18
FE203	%	0.47	0.65	1.92	0.60	0.85	0.37	3.42	8.92	0.56	0.89	7.98
K20	%	0.18	0.22	0.31	0.04	0.14	0.06	0.63	4.83	0.50	4.02	4.66
MGO	%	21.17	20.91	19.12	20.37	12.38	20.28	18.91	6.77	11.34	4.04	1.83
MNO	%	0.03	0.07	0.12	0.06	0.04	0.03	0.11	0.05	0.04	0.02	0.04
NA20	%	0.12	0.16	0.11	0.06	0.25	0.07	0.28	1.54	0.83	5.00	1.76
P205	%	0.019	0.020	0.081	0.048	0.091	0.028	0.065	1.035	0.060	0.103	0.194
SI02	%	6.77	6.32	8.05	19.20	69.12	5.00	9.86	51.83	11.30	62.57	63.16
TI02	%	0.011	0.010	0.030	0.006	0.009	0.008	0.076	1.760	0.015	0.050	0.681
LOI	%	40.17	41.73	39.20	30.80	1.81	43.41	35.94	4.08	37.80	3.49	5.27
AG	PPM	1.2	0.5	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
AS	PPM	13.1	1.1	1.8	0.5	0.8	0.7	1.4	0.9	0.5	0.7	1.9
BI	PPM	0.60	2.80	0.13	0.05	0.05	0.05	0.12	0.21	0.05	0.05	0.63
CU	PPM	74	91	23	8	22	20	36	62	15	14	77
CD	PPM	36.50	5.30	13.25	0.10	0.10	0.05	0.32	0.30	0.05	0.05	0.15
HG	PPM	13278	398	413	20	44	20	46	190	70	53	177
MO	PPM	2.0	1.3	6.8	1.3	2.1	0.9	5.6	11.5	2.0	1.6	27.3
PB	PPM	212	48	6702	3	5	5	8	7	8	10	8
SB	PPM	29.0	10.0	1.7	0.1	0.3	0.1	0.2	0.7	0.7	0.2	0.7
SE	PPM	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.3	0.1	0.1	1.3
ZN	PPM	8208	1213	5350	23	26	38	63	112	30	26	57
CAO/MGO		1.41	1.39	1.44	1.44	1.11	1.58	1.61				

Individual samples were compared against the average values and the range of values for each rock type was examined. CaO/MgO ratios for the marbles were calculated to analyze the ratio of calcite to dolomite in the rocks. The range of CaO/MgO ratios in the marble units is shown on Figure 4 below.

FIGURE 4



Results of the above analysis indicate that the Buller Lake zinc mineralization is hosted within a uniformly pure unit of dolomitic marble. The average value of 1.41 for the CaO/MgO ratio is very close to the theoretical value of 1.39 for pure dolomite. Relatively low values of Al2O3, SiO2, K2O and Na2O also attest to the purity of this dolomitic marble. The trace element signature of the mineralization shows the mineralization to be enriched in Ag, As, Bi, Cd, Hg, Pb and Sb relative to the other rocks. No strong metal zonation patterns are obvious in the analysis of the data carried out to date. Examination of individual sample data indicates an increase in As and Hg values in

the area of the best showings at the west end of the swamp on the south edge of Lot 19 Con. 5.
Analysis of silicated dolomitic marbles showed a very similar composition to the dolomitic marbles except, as expected a higher percentage of SiO2.

Examination of data on the quartz-diopside rocks and quartzites mapped on the property showed very few pure quartzites. Almost all these rocks have a significant CaO- MgO component, indicating significant carbonate in the original rock. CaO/MgO ratios are all anomalously low indicating an overabundance of MgO relative to CaO. This may be due to the presence of $MgCO_3$ in the original rock or may indicate selective removal of $CaCO_3$ during the silicification process.

Evaluation of the data on the unmineralized dolomites on the property showed that they can be divided into two groups based on Fe content, an Fe-rich group and an Fe-poor group. The Fe-rich dolomites occur exclusively in the lower part of the Buller Lake stratigraphy and thus the Fe-content of these marbles is a valuable stratigraphic marker.

Analyses of samples of hornblende-gneiss collected from the underlying and overlying? stratigraphy indicate these rocks are probably of volcanic derivation, probably mafic to intermediate sills. Two of the samples collected were quite potassic indicating some degree of alteration. The fact that only four samples of these rocks were collected due to the fact that they are not intimately associated with the mineralization makes it difficult to quantify the nature and extent of the alteration.

Ten samples of rusty gneiss were analyzed. Invariably these rock units are located at the contacts of the dolomitic marble belt with the surrounding rocks. Locally they show what appears to be a mylonitic fabric. These composition of these rocks differs significantly from that of the hornblende -biotite gneisses in that they are more felsic in composition. Over half of the samples showed highly anomalous levels of Mo, with elevated levels of Cu, Bi, +/-As and Ag. Two samples collect from a rusty schist unit on the Gaspick property, Lot 17, Con IV also contained anomalous levels of Hg and Zn.

Drainage Sampling Results

Results of drainage sampling on the property are shown on Sheet 9 (in pocket).

Sample 5014 collected from the Winkelaar Property 5+40E, 2+78 S contained an highly anomalous value of zinc. (928 ppm.) The sample also contained anomalous amounts of Sb (3.4 ppm.), Pb 234 ppm., and Cu 180 ppm. Several other samples from drainages in the vicinity of this sample also contained slightly elevated values of some of these elements. These samples are listed below.

Sample 5003 208 ppm. Cu

Sample 5005 308 ppm. Zn, 1.8 ppm. Sb
Sample 5015 148 ppm. Pb, 1.0 ppm. Sb
Sample 5016 296 ppm. Zn, 114 ppm. Cu, 1.0 ppm. Bi
Sample 5017 334 ppm. Zn, 114 ppm. Cu, 1.4 ppm. Bi

No mineralization was observed in the area to explain these values.

Another anomalous drainage sample was collected on the western edge of Lot 17, Con. VI at 6+70E, 15+95N (sample 5007). It contained 343 ppm. Cu and 380 ppm. Zn. Source of this anomaly remains unexplained.

Recommendations

Results of work carried out to date indicates widespread zinc mineralization is present within a dolomitic marble unit on the property. The host dolomitic marble occurs at the contact of the underlying calcitic marble sequence and the overlying dolomitic and silicated dolomitic marbles and quartzites. Structure is complex with at least four phases of folding, the first two of which are isoclinal in style or close to it. Regional dips are very flat ranging from 10-30 degrees to the southeast. Plunges on the folds are also very shallow.

Sampling of the mineralization discovered to date has returned values of up to 5.43% Zn in grab samples. In addition to Pb, unusually high levels of Ag, Cu, Cd, Hg, and Sb are present.

Mapping of the host dolomitic marble unit on the property has demonstrated that significant zinc mineralization is present within the host dolomitic marble unit along the edges of a large swamp on the south part of Lot 19, Concession IV. The mineralization appears to occur within an antiformal structure which lies beneath the swamp. The mineralization has been traced along strike for a distance of approximately 800 metres along the edge of the swamp. Examination of individual sample data indicates an increase in As and Hg values in the area of the best showings at the west end of the swamp on the south edge of Lot 19 Con. 5. Diamond drilling is recommended to test this mineralization down plunge

Due to the flat dips and plunges it can be expected that the host unit occurs at relatively shallow depths (<200 metres) over most of the property. Excellent drill targets exist in the host dolomitic marble at relatively shallow depths (<200 metres) down-plunge of the mineralization at the west end of the large swamp and also down-plunge of mineralization discovered in 1991 along L1+00N at 0+75E.

Soil sampling and more detailed mapping and prospecting is recommended in the area of anomalous drainage samples collected in 1991.

RECONNAISSANCE MAPPING AND PROSPECTING

Current Work

A limited amount of reconnaissance mapping and prospecting was carried out beyond the limits of the Buller Lake Property. Two and one-half man days were spent exploring the southward extension of the Buller Lake dolomitic marbles. Initially roadside mapping was carried out. More detailed mapping and prospecting was carried out on the properties of Mrs. H. Cynoweth (Lot 1, Con. A, Somerville Township), Mr. F. Porter (Lot 18, Con. XIII,Somerville Township), and Mr. Ted Clark, (Lot 18, Con. XIII,Somerville Township).

Two man days were spent prospecting and mapping soil geochemical anomalies which had been previously located by Northgate Exploration along the western limit of Lot 26, Concession 1, Lutterworth Township.

One half-day was spent mapping and prospecting along the shore of Buller Lake. Another half day was spent mapping and prospecting a marble belt along the shore of Bob's Lake in northern Lutterworth Twp. and southern Anson Twp. Zinc mineralization had been discovered along a township road just west of the lake in 1990.

Location of these reconnaissance areas is shown on Figure 4.

Where mineralization or potentially mineralized rock was noted rock samples were collected. Twelve rock samples were collected during the reconnaissance work. The rocks were analyzed for major and trace elements, so as to define the character of the host rocks and the mineralization.
The rocks were analyzed for Al2O3%, BaO%, CaO%, Fe2O3%, K2O%, MgO%, MnO%, Na2O%, P2O5%, SiO2%, TiO2%, LOI%, Ag ppm., As ppm., Bi ppm., Cu ppm., Cd ppm., Hg ppb., Mo ppm., Pb ppm., Sb ppm., Se ppm., and Zn ppm. by a variety of methods.

A breakdown of the time spent on the activities described above is presented in the time summary and detailed on the daily traverse report forms, both included as Appendix A. Complete sample analyses and descriptions are included as Appendix B.

Results of Reconnaissance Mapping and Prospecting

Buller Lake Area (South)

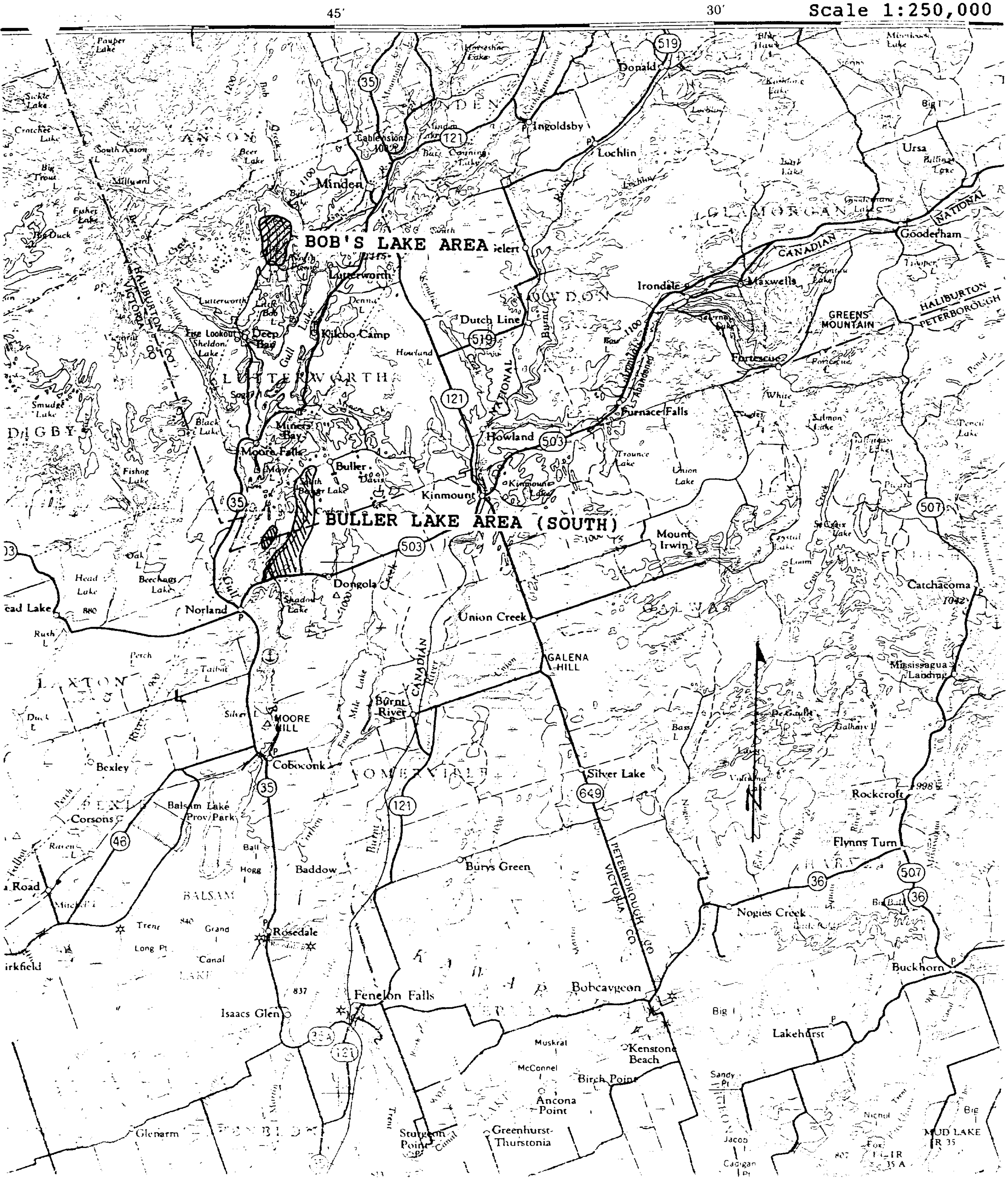
Results of the reconnaissance mapping and prospecting carried out south of the Buller Lake Property are shown on Sheet 7 (in pocket).

This work demonstrated that the Buller Lake dolomitic marble belt narrows considerably immediately south of the property area. The marble belt again widens immediately north of Highway 503 in northern Somerville Township, likely due to the result of folding. Mapping in this area showed that rock types present in that area are very similar

BULLER LAKE AREA 1991 RECONNAISSANCE AREAS

Figure 5

Scale 1:250,000



to those encountered on the Buller Lake Property. Here, as at Buller Lake the dolomitic marble belt is bounded by units of rusty gneiss, discussed previously. A sample of this rusty gneiss collected along Hwy. 503 (sample 4129) contained 270 ppm. Cu and 46 ppm. Mo. Similar units of rusty gneiss bound interbands of hornblende-gneiss within the marble belt. These are believed to represent shear zones.

Prospecting on the Cynoweth Property (Lot 1, Con. A, Somerville Township), led to the discovery of a boulder of serpentinous dolomitic marble containing visible sphalerite. This boulder analyzed 4100 ppm. Zn. (sample 4144). Another hematitic serpentinous dolomitic marble boulder from the Porter property (Lot 18, Con. XIII,Somerville Township) was also analyzed, (sample 4153) but did not return any anomalous values.

Lot 26, Con. I, Lutterworth Twp.

Prospecting along the western limit of Lot 26, Con. 1, Lutterworth Twp. where previous soil sampling by Northgate Exploration had returned values up to 1420 ppm. Zn., demonstrated the area is underlain by dolomitic marbles. These consist of white to grey weakly graphitic dolomitic marble interlayered with white weakly silicated dolomitic marble. These are bounded to the north by granitic gneisses and calcitic marbles. Rock samples collected from the area of the soil anomalies did not contain any anomalous zinc values.

Bob's Lake Area

Results of the reconnaissance mapping and prospecting carried out in the Bob's Lake Area are shown on Sheet 8 (in pocket).

Prospecting along the shore of Bob's Lake resulted in the discovery of zinc mineralization in a band of grey to white coarse grained dolomitic marbles exposed along the east shore of the lake. The mineralization consists of red- oxidized sphalerite. Two samples of this mineralization returned values of 5500 ppm. Zn (sample 4157) and 300 ppm. Zn (sample 4159). This marble belt appears to parallel the marble belt west of the lake where zinc mineralization was discovered last year. Analysis of the intervening rock unit, a quartz-feldspar-sillimanite- garnet gneiss (sample 4156) indicates it is an altered felsic volcanic unit.

Recommendations

Discovery of a mineralized boulder on the Cynoweth Property in northern Somerville Twp. and the presence of similar rock units to those seen on the Buller Lake Property indicate that more detailed mapping and prospecting is warranted in this area.
Discovery of additional zinc mineralization and the recognition of altered volcanic rocks at Bob's Lake indicates the potential is good here for Montauban style mineralization. Additional mapping and prospecting is warranted

APPENDIX A

Time Summary and Daily Report Forms

OPAP 1991 TIME SUMMARY

DATE	PROJECT	AREA	MAN DAYS A.SOEVER OPAP FILE OP91-613 OPG91-244	MAN DAYS R.JACKSON OPAP FILE OP91-614 OPG91-245	TYPE OF WORK
JULY 9	BULLER	1	1	1	FLAGGING LINE
JULY 10	BULLER	1	1	1	FLAGGING LINE
JULY 11	BULLER	1	1	1	FLAGGING LINE
JULY 12	AREA 1 RECON		1	1	PROSPECTING SOIL GEOCHEM ANOMALIES
JULY 24	BULLER	1	1		DETAILED 1:1000 SCALE MAPPING AND PROSPECTING
JULY 25	BULLER	1	1		DETAILED 1:1000 SCALE MAPPING AND PROSPECTING
JULY 26	BULLER	1	1		DETAILED 1:1000 SCALE MAPPING AND PROSPECTING
AUG 18	BULLER	1	1		DETAILED 1:1000 SCALE MAPPING AND PROSPECTING
AUG 19	BULLER	1	1		DETAILED 1:1000 SCALE MAPPING AND PROSPECTING
AUG 20	BULLER	1	1		DETAILED 1:1000 SCALE MAPPING AND PROSPECTING
AUG 21	BULLER	1	1		DETAILED 1:1000 SCALE MAPPING AND PROSPECTING
AUG 22	BULLER	1	1		DETAILED 1:1000 SCALE MAPPING AND PROSPECTING
AUG 23	BULLER	1	1		DETAILED 1:1000 SCALE MAPPING AND PROSPECTING
AUG 27	GENERAL		0.5		TOUR FOR RALPH HUGGINS, OPAP
SEPT 7	BULLER	5	1		FILL IN MAPPING AND ROCK SAMPLING
SEPT 8	BULLER	2	1		1:2000 SCALE MAPPING AND PROSPECTING
SEPT 9	BULLER	2	1		1:2000 SCALE MAPPING AND PROSPECTING
SEPT 10	AREA 1 RECON		1		1:15,480 SCALE RECON MAPPING AND PROSPECTING
SEPT 11	BULLER	2	1		1:2000 SCALE MAPPING AND PROSPECTING
SEPT 12	BULLER	2	1		1:2000 SCALE MAPPING AND PROSPECTING
SEPT 13	BULLER	2	1		1:2000 SCALE MAPPING AND PROSPECTING
SEPT 14	BULLER	2,3	1		FLAGGING LINE
OCT 21	BULLER	2	1		1:2000 SCALE MAPPING AND PROSPECTING
OCT 22	BULLER	2	1		1:2000 SCALE MAPPING AND PROSPECTING
OCT 23	BULLER	3	1		1:2000 SCALE MAPPING AND PROSPECTING
OCT 24	BULLER	3	1		1:2000 SCALE MAPPING AND PROSPECTING
OCT 25	BULLER	3	1		1:2000 SCALE MAPPING AND PROSPECTING
OCT 28	BULLER	3	1		1:2000 SCALE MAPPING AND PROSPECTING
OCT 29 AM	BULLER		0.5		1:2000 SCALE MAPPING AND PROSPECTING
OCT 29 PM	AREA 1 RECON		0.5		1:15,480 SCALE RECON MAPPING AND PROSPECTING
OCT 30	BULLER	4	1		FILL IN MAPPING, ORGANIC BANK AND ROCK SAMPLING
OCT 31	AREA 1 RECON		1		1:15,480 SCALE RECON MAPPING AND PROSPECTING
NOV 22	AREA 1 RECON		1		LAKESHORE MAPPING AND PROSPECTING
NOV 23	BULLER	4	1		FILL IN MAPPING, ORGANIC BANK AND ROCK SAMPLING
DEC 12			1		DRAUGHTING
DEC 16			1		DRAUGHTING
JAN 9			1		DRAUGHTING
JAN 12			0.5		DRAUGHTING
JAN 13			1		DRAUGHTING
JAN 14			1		DRAUGHTING
JAN 16			1		DRAUGHTING
JAN 20			1		DRAUGHTING
JAN 23			1		DRAUGHTING
JAN 24			1		DRAUGHTING
JAN 26			1		REPORT WRITING
JAN 27			1		REPORT WRITING
JAN 28			1		REPORT WRITING
JAN 29			1		REPORT WRITING
	TOTAL		46	4	

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE PROPERTY
NTS: 31 D/15
AREA: LUTTER WORTH TWP

DATE: JULY 9, 1991

TYPE OF WORK: compass & flag line

PERSONNEL: ROBERT G JACKSON, ALAR SOEVER

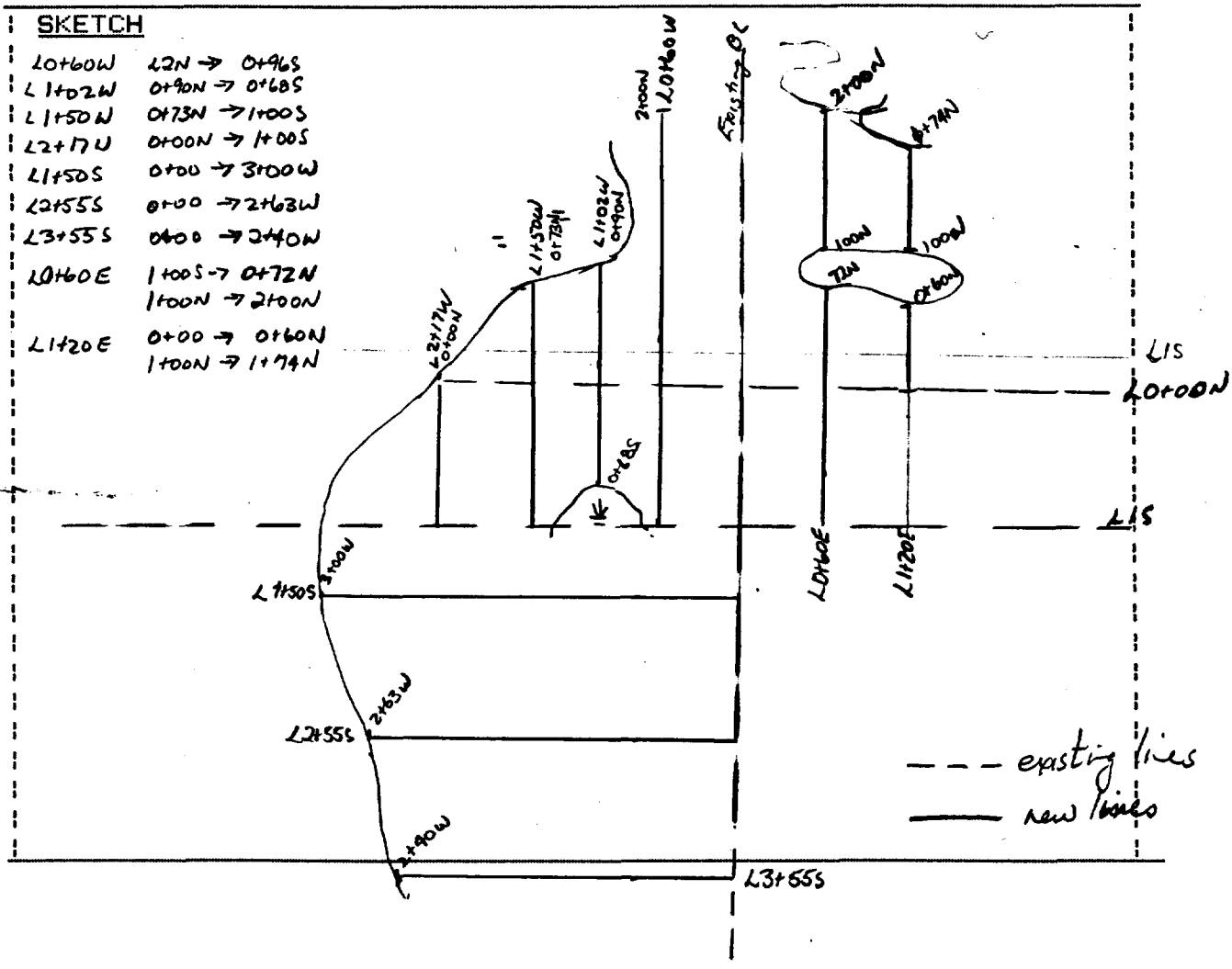
AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: N/A

SCALE: 1:5000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:		

SKETCH

L0+60W L2N → 0+96S
L1+02W 0+90N → 0+68S
L1+50N 0+73N → 1+00S
L2+17N 0+00N → 1+00S
L1+50S 0+00 → 3+00W
L2+55S 0+00 → 2+63W
L3+55S 0+00 → 2+40W
L0+60E 1+00S → 0+72N
1+00N → 2+00N
L1+20E 0+00 → 0+60N
1+00N → 1+74N



DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE PROPERTY.
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: JULY 10, 1991

TYPE OF WORK: Compass & flag line

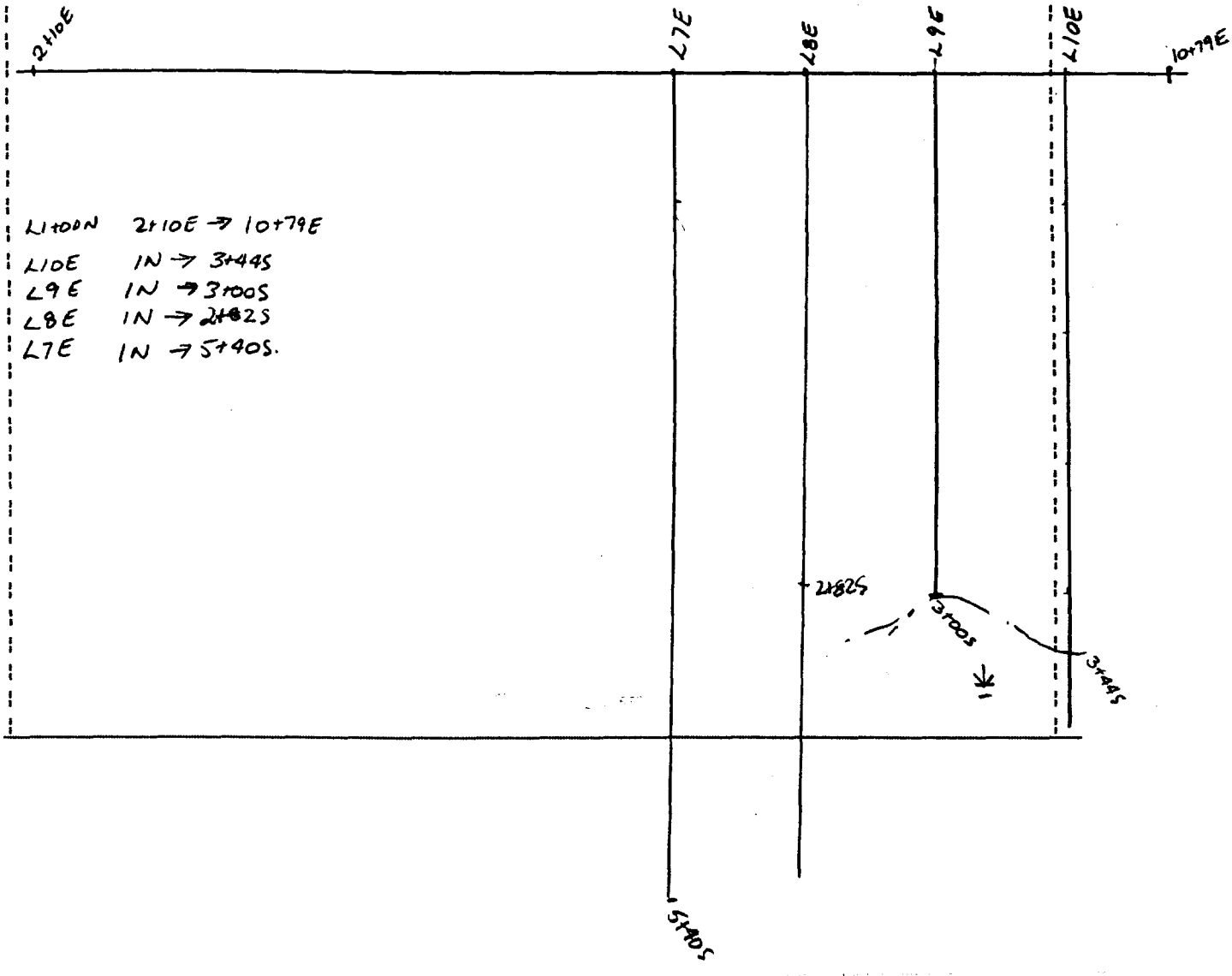
PERSONNEL: ROBERT G JACKSON, A. SOEVER

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: N/A

SCALE: 1:5000

SAMPLES TAKEN:	SAMPLE NUMBERS	SAMPLE TYPE

SKETCH



L1+00N 2+10E → 10+79E
L10E IN → 3+44S
L9E IN → 3+00S
L8E IN → 2+82S
L7E IN → 5+40S.

DAILY TRAVERSE REPORT

PROJECT: DPAP BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP.

DATE: JULY 11, 1991

TYPE OF WORK: flagging & chaining line

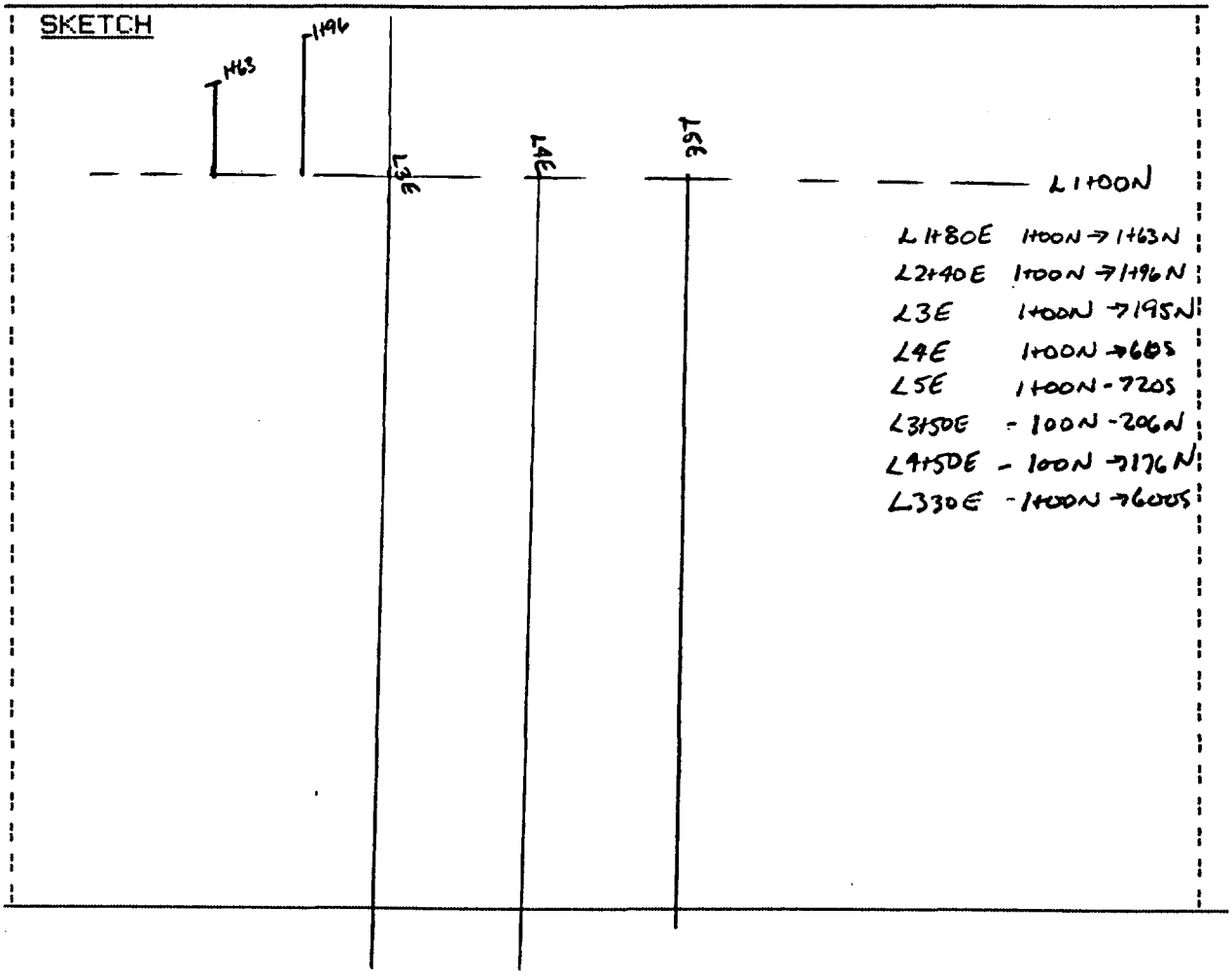
PERSONNEL: A. SOEVER & R G. JACKSON.

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: _____

SCALE: 1:5000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:		

SKETCH



DAILY TRAVERSE REPORT

PROJECT: OPAP AREA 1 RECON
NTS: 31 D/15
AREA: LOT 26 CON I BUTTERWORTH TWP

DATE: Friday July 12, 1991

TYPE OF WORK: -detailed prospecting of Northgate soil anomalies

PERSONNEL: A. SOEVER & R.G. JACKSON

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Northgate Geochem map

SCALE: _____

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4001 – 4005	rocks.

SKETCH

plotted on Buller Lake (south) recon map 1:15,480

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP.

DATE: WED. JULY 24, 1991

TYPE OF WORK: Detailed Mapping & Prospecting

PERSONNEL: Alar Soever.

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: mapping sheet BUL 91-01

SCALE: 1:1000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	1/01	rock.

SKETCH

- see mapping sheet BUL 91-01
- 1:1000 scale detailed geology map.
- L2+40E → L1+20E L1+00N → Swamp.

plotted on sheet 3

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: JULY 25, 1991

TYPE OF WORK: - detailed mapping & prospecting

PERSONNEL: A. Soever

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Mapping Sheet BUL 91-01

SCALE: 1:1000

SAMPLES TAKEN:	SAMPLE NUMBERS	SAMPLE TYPE

SKETCH

- plotted on BUL 91-01
- 1:1000 scale geology map.

℄ 1+20E → BL 0 ℄ 0+60N → 2+00N.

-

plotted on Sheet 3

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE
NTS: 31 D/15
AREA: BUTTERWORTH TWP

DATE: July 26, 1991

TYPE OF WORK: detailed mapping & prospecting

PERSONNEL: A. Seven

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Bul 91-01

SCALE: 1:1000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:		

SKETCH

- plotted on Bul 91-01 & 1:1000 scale geology map.
L2100N 0100 → 2100E & island in swamp.

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP.

DATE: AUGUST 18, 1991

TYPE OF WORK: - detailed mapping & prospecting

PERSONNEL: A. Soewn

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL 91-01, BUL 91-02

SCALE: 1:1000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4102	silt.

SKETCH

- plotted on BUL 91-01, 91-02.
- L2N 0 → 1+35W
- L0+47W → L0+00; L0+00N → L2+00N
- L0+60E L0 → L1N
- L1+20E L0 → L1N
- BL0 L0 → 1N.

DAILY TRAVERSE REPORT

PROJECT: DPAP BULLER LAKE
NTS: 31 O/15
AREA: NUTTERWORTH TWP

DATE: AUGUST 19, 1991

TYPE OF WORK: detailed mapping & prospecting

PERSONNEL: A. SOEVER

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Bul 91-02

SCALE: 1:1000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:		

SKETCH

- plotted on Bul 91-02, 1:1000 scale geology maps

L 1+02W 1S → 0+90N.

L 0+60E L0 – L1+00S.

L 1+00S 0+60E → 0+47W

L 0+47W 1+00S → L 0+00N.

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE
NTS: 31 D/15
AREA: BUTTERWORTH TWP

DATE: AUGUST 20, 1991

TYPE OF WORK: detailed mapping & prospecting

PERSONNEL: A. Soewi.

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL 91-02 91-03

SCALE: _____

SAMPLES TAKEN:	SAMPLE NUMBERS	SAMPLE TYPE
	4103	rock.

SKETCH

- plotted on 91-02,03 1:1000 scale geology maps

L 1+50 W L1+00S → 1+74N

L 2+17 N L 0+00 → 1+00S.

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP.

DATE: AUGUST 01, 1991

TYPE OF WORK: draughting, detailed mapping & prospecting

PERSONNEL: A. Soewer

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Buller 91-04

SCALE: _____

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4104	rock

SKETCH

- plotted on BUL 91-04, 1:1000 scale geology map
- rain in am. ~~plotting~~ inking geology & colouring

L2+17W 3+05S → L1+00S.
L1+50W 2+83W → BL 0.

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: AUGUST 22, 1991

TYPE OF WORK: detailed mapping & prospecting

PERSONNEL: A. Sowa

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Bul. 91-04

SCALE: 1:1000.

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4105	

SKETCH

- see Bul 91-04 @ 1:1000 scale geology map.
- L 2+05 S BL → 2+83 W
  L 2+55 S BL → 2+46 W

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE
NTS: 31 D/15
AREA: BUTTERWORTH TWP

DATE: AUG 23, 1991

TYPE OF WORK: -detailed mapping & prospecting

PERSONNEL: A. Sevier

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL 91-04, 05

SCALE: 1:1000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:		

SKETCH

-see BUL 91-04, 05, plotted on 1:20000 scale Sheet 4

- L3+05S BL → 2+83W
- L3+55S 2+40W → 0+60W
- L4+05S 2+40W → 1+80W

DAILY TRAVERSE REPORT

PROJECT: OPAP BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: AUG 27, 1991 1/2 DAY.

TYPE OF WORK: PROPERTY VISIT FOR RALPH HUGGINS OPAP.

PERSONNEL: _____

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: _____

SCALE: _____

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:		

SKETCH

DAILY TRAVERSE REPORT

PROJECT: BULLER
NTS: 31 D/15
AREA: BUTTERWORTH TWP

DATE: SEPT 7, 1991

TYPE OF WORK: DETAILED MAPPING & ROCK SAMPLING

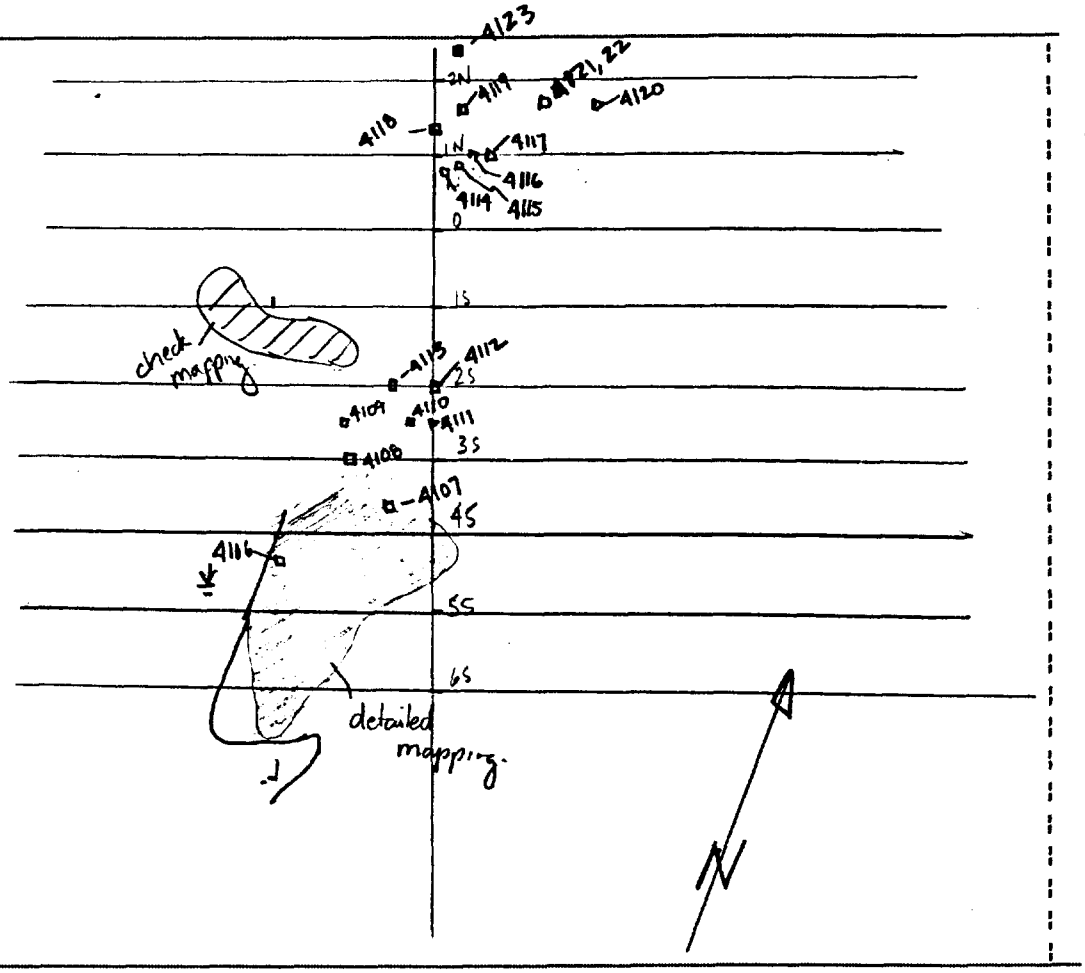
PERSONNEL: A.SOBER

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: 1:1000 MAPPING SHEETS BUL 91-01 -05
1:2000 MAP OVERLAY 91-06

SCALE:

SAMPLES TAKEN:	SAMPLE NUMBERS	SAMPLE TYPE
	4106 - 4123	rocks.

SKETCH



DAILY TRAVERSE REPORT

PROJECT: BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP CONT W S½ LOT 17 (GAGPICK)

DATE: SEPT 8, 1991

TYPE OF WORK: Mapping 1:2000 scale & prospecting

PERSONNEL: A. Socher

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Photo blowups south part 87-4433-07-244 S-1 → S-6

SCALE: 1:2000

SAMPLES TAKEN:	SAMPLE NUMBERS	SAMPLE TYPE
	4124 - 4125	rock.

SKETCH

See photo blowups - south part photo. 87-4433-07-244

DAILY TRAVERSE REPORT

PROJECT: BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP CON IV S½ LOT 18 (WINKELAAR)

DATE: SEPT 9, 1991

TYPE OF WORK: 1:2000 scale mapping & prospecting

PERSONNEL: A. Soewn.

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: photo blowups South part S1→S-6

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4126 - 28.	rock

SKETCH

See photo blowups south part photo 874433-07-244

DAILY TRAVERSE REPORT

PROJECT: ~~Roadside~~ Area 1 Recon.
NTS: 31 O/15 31O/10
AREA: Somerville Twp & Lutterworth Twp

DATE: Sept 10, 1991

TYPE OF WORK: 1:15,480 scale mapping & prospecting

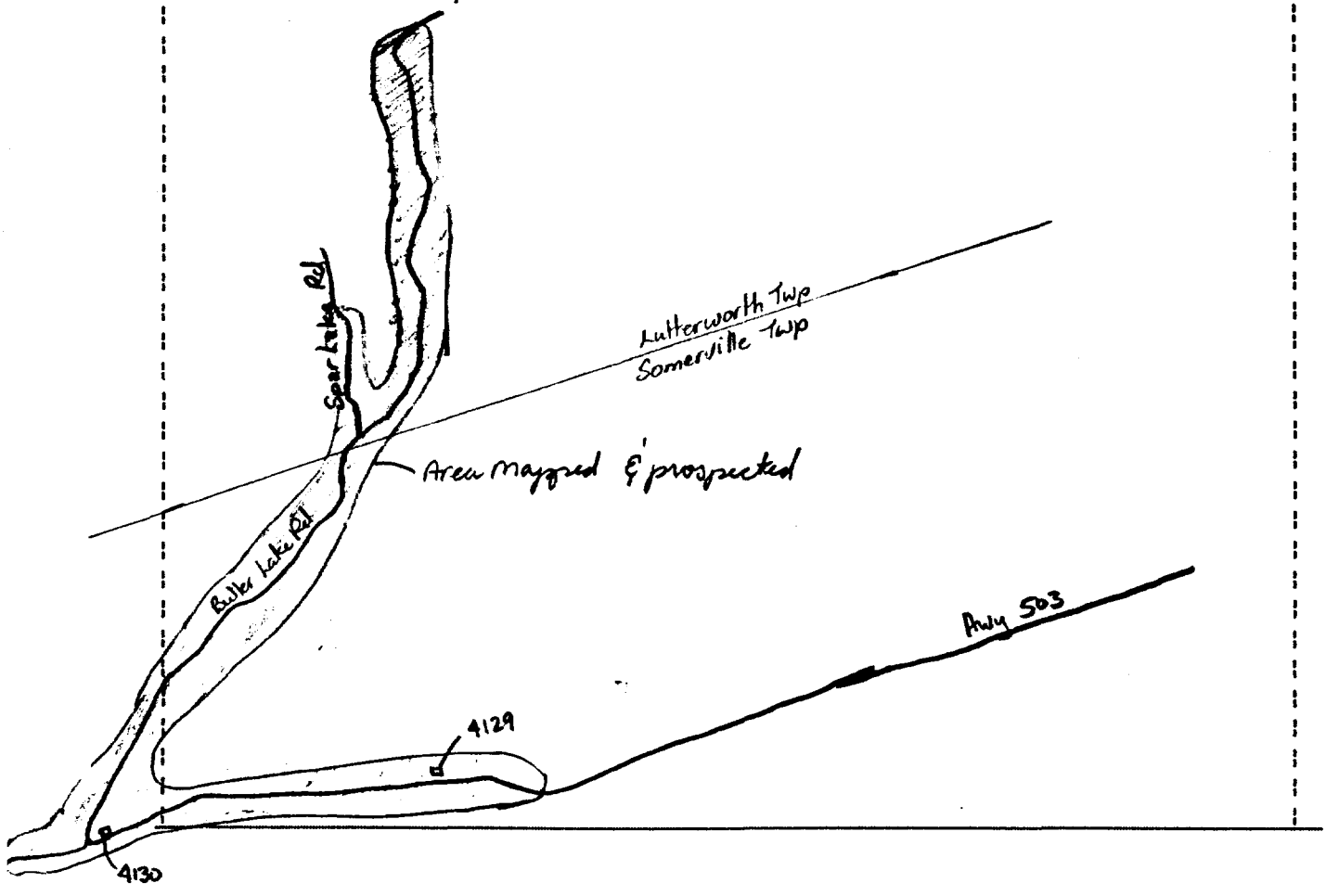
PERSONNEL: A Sevon.

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: 87-4431-07-146, 144
87-4432-07-059
87-4433-07-244

SCALE: 1:15480

SAMPLES TAKEN:	SAMPLE NUMBERS	SAMPLE TYPE
	4129- 4130	rock.

SKETCH at 1:50,000



DAILY TRAVERSE REPORT

PROJECT: Buller Lake Property
NTS: 31 O/15
AREA: Lutterworth Twp Con IV Lot 18

DATE: Sept 11, 1991

TYPE OF WORK: mapping & prospecting

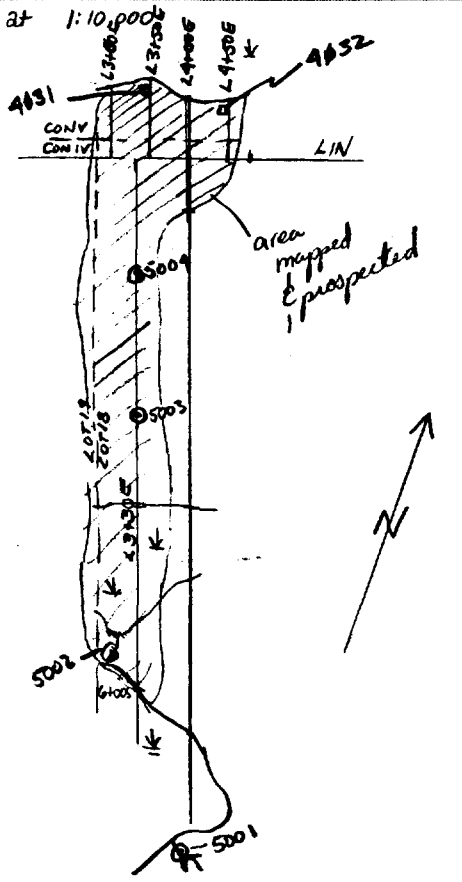
PERSONNEL: A. Soever

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Mapping Sheet: BUL 91-07, 91-08

SCALE: 1:2000

SAMPLES TAKEN:	SAMPLE NUMBERS	SAMPLE TYPE
	4131 - 4132	rock
	5001 - 5004	organic bank

SKETCH at 1:10,000



L 3+00E	IN → 1+95N
L 3+30 E	IN → 6+00S
L 3+50E	IN → 2+65N
L 4E	IN → 1+80N
L 4+50E	IN → 1+80N
L 4E	IN → 0+30N

SCALE 1:10,000

DAILY TRAVERSE REPORT

PROJECT: BULLER LAKE PROPERTY.
NTS: 31 O/15
AREA: Lutterworth Twp Lot 18 Con IV

DATE: Sept 12, 1991

TYPE OF WORK: mapping & prospecting

PERSONNEL: A Sowerby

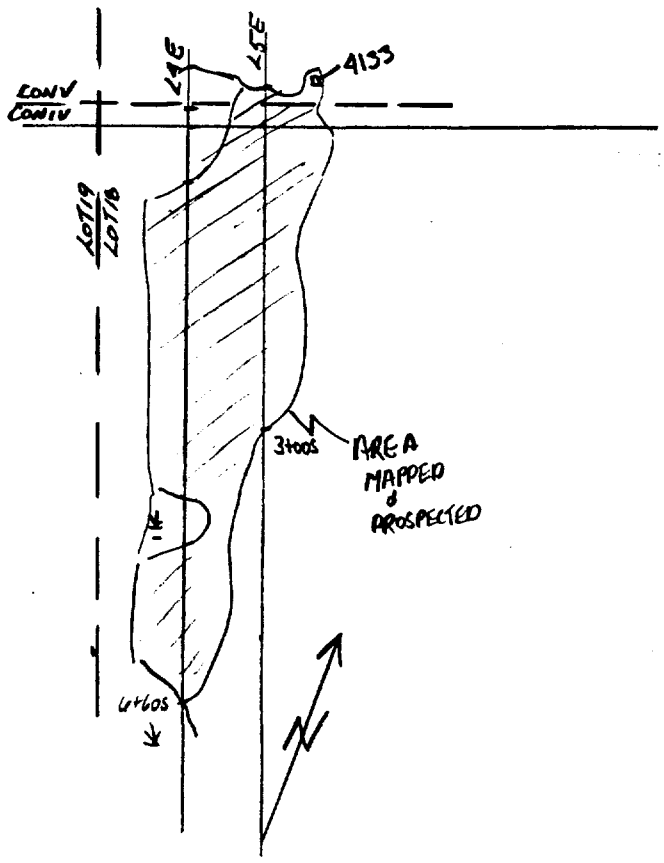
AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Bul 91-07, 91-08

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	9133	rock

SKETCH

L4E 6+60S → 0+30N
L5E 1+50N → 3+00S



SCALE 1:10,000

DAILY TRAVERSE REPORT

PROJECT: BULLER LAKE
NTS: 31D/15
AREA: LUTTERWORTH TWP LOT 17 CON IV

DATE: Sept 13, 1991

TYPE OF WORK: mapping & prospecting

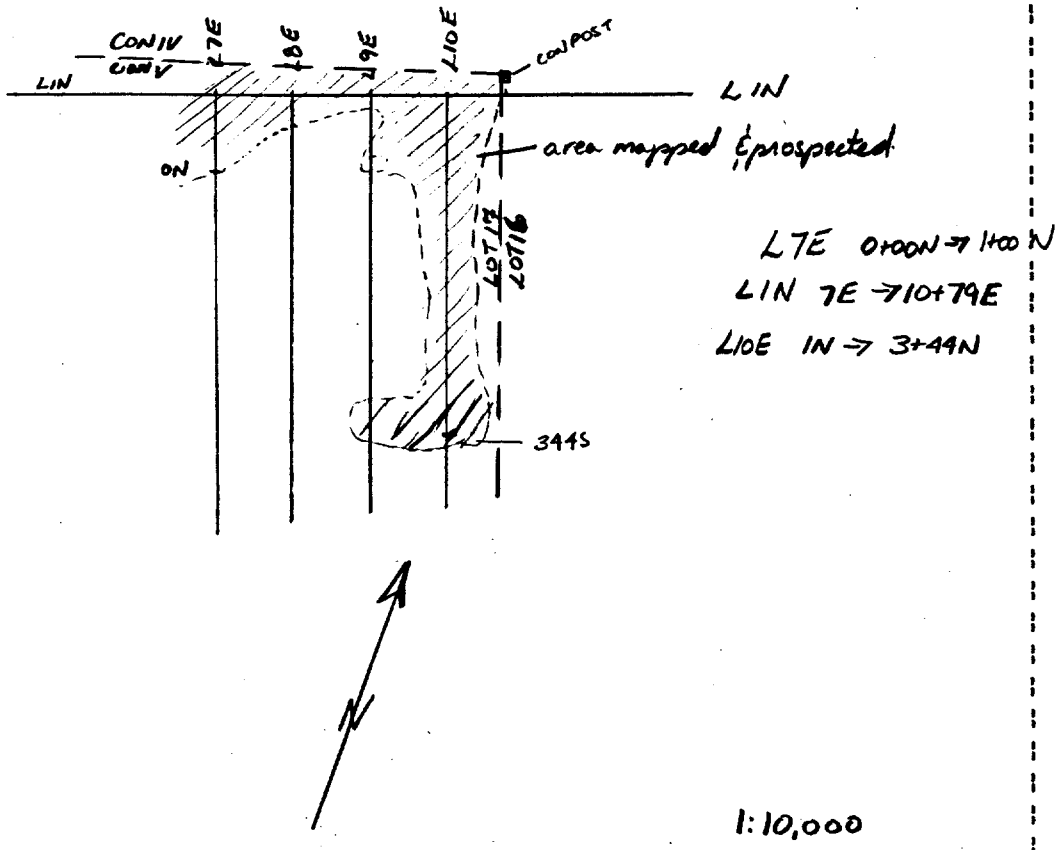
PERSONNEL: A. Seven

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL 91-09

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	None	

SKETCH



DAILY TRAVERSE REPORT

PROJECT: BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: SEPT 14, 1991

TYPE OF WORK: flagging line

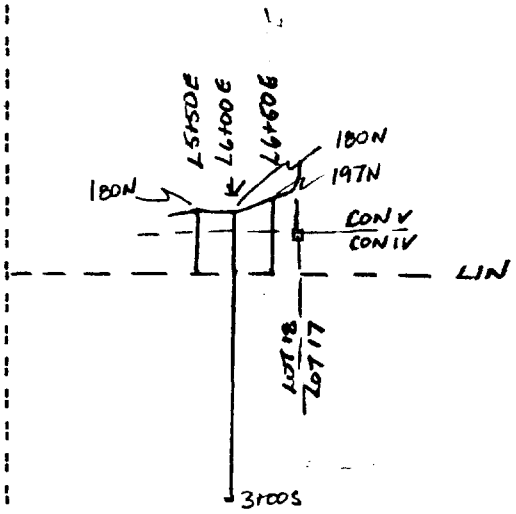
PERSONNEL: A. Soewe & Shayne Hartin

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: ~~A~~ 87-4434 - 09-060

SCALE: _____

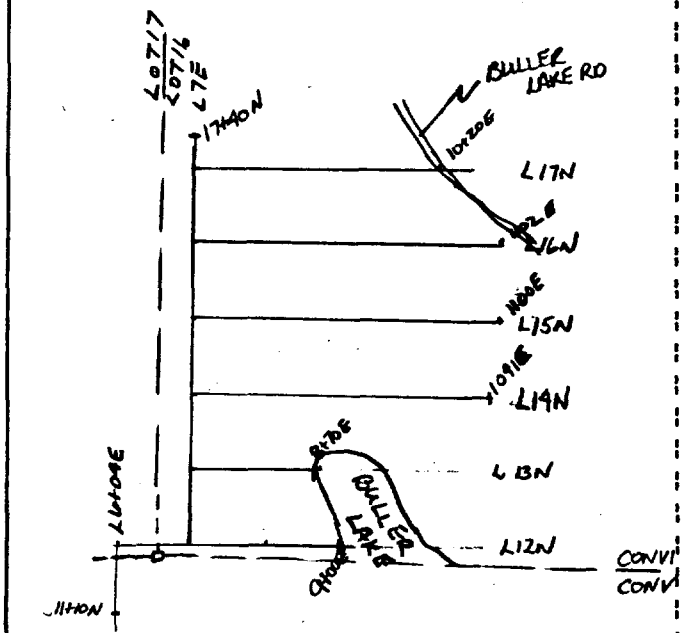
	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:		

SKETCH LOT 17 CON IV



L5+50E 1N → 1+80N
L6+00E 1+80N → 3+00S
L6+50E 1+97N → 1N

LOT 16 CON VI



L6+04E 11+10N → 12+00N
L12N 6+04E → 9+00E
L7E 12N → 17+40N
L13N 7E → 8+70E
L19N 7E → 10+91E
L15N 7E → 11E
L16N 7E → 11+02E
L17N 7E → 10+20E

DAILY TRAVERSE REPORT

PROJECT: BULLER
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: OCT 21, 1991

TYPE OF WORK: Detailed mapping & prospecting Gaspick property.

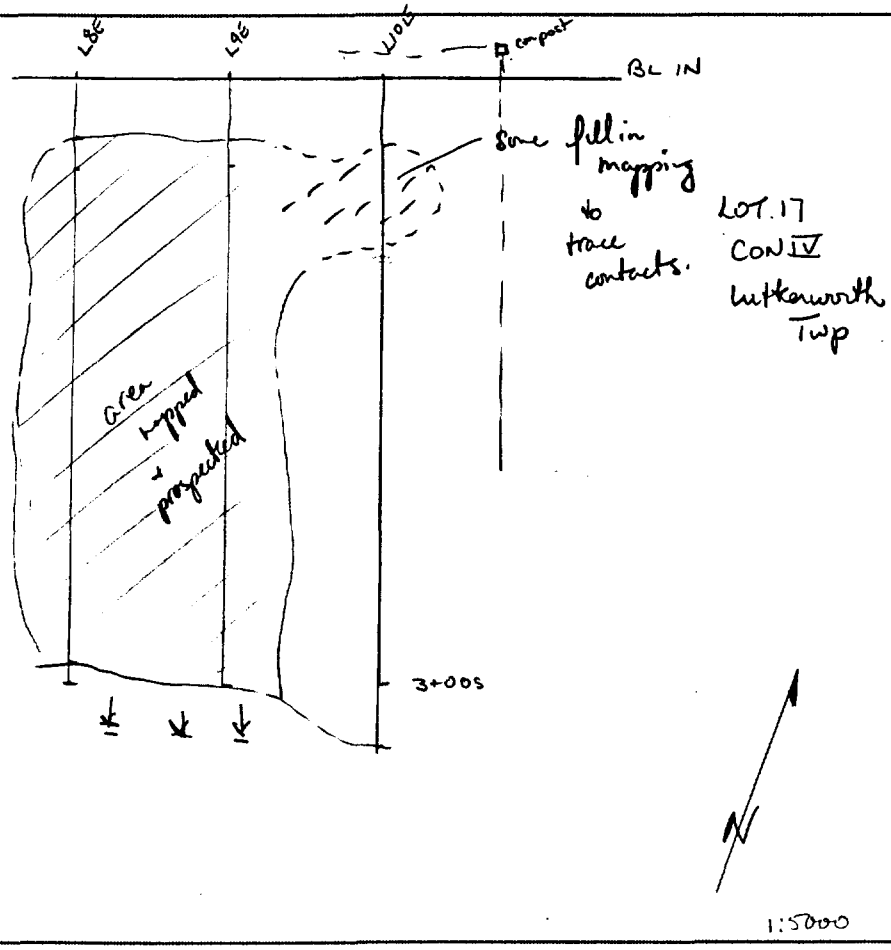
PERSONNEL: A. Soever.

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Mapping Sheet 91-09.

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	none.	

SKETCH



DAILY TRAVERSE REPORT

PROJECT: BULLER
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: Oct 22, 1991

TYPE OF WORK: mapping & prospecting, Winkelaar Property

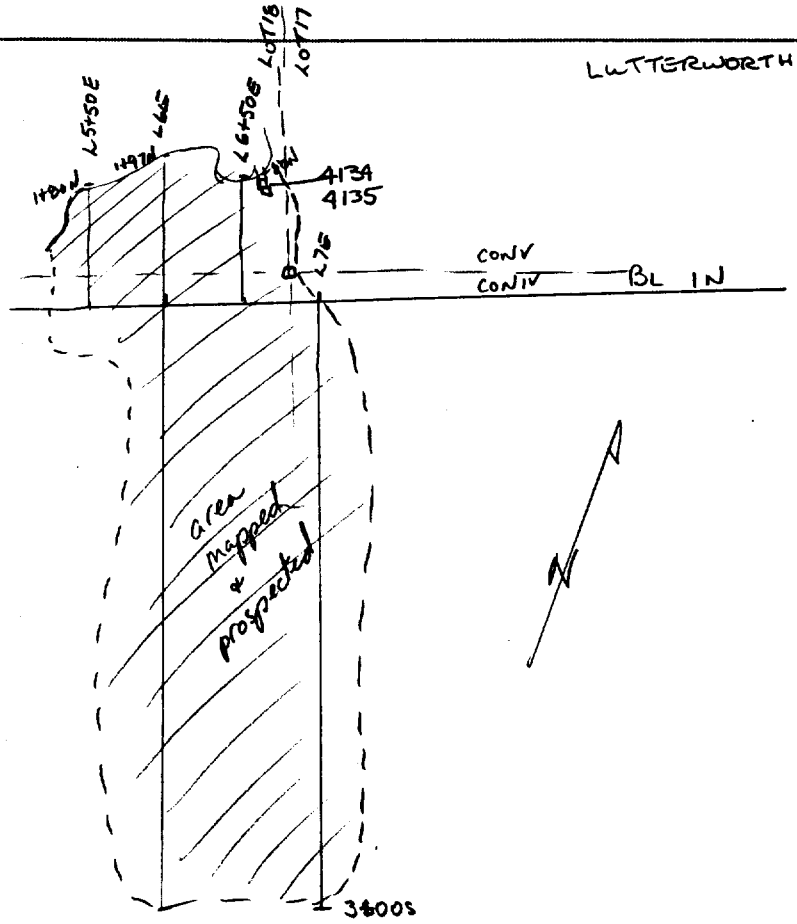
PERSONNEL: A Sowa

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Mapping Sheet BUL 91-07

SCALE: _____

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4134, 4135	rocks

SKETCH



Scale 1:5000

DAILY TRAVERSE REPORT

PROJECT: BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: Oct 23, 1991

TYPE OF WORK: detailed mapping & prospecting, Miners Bay Claim

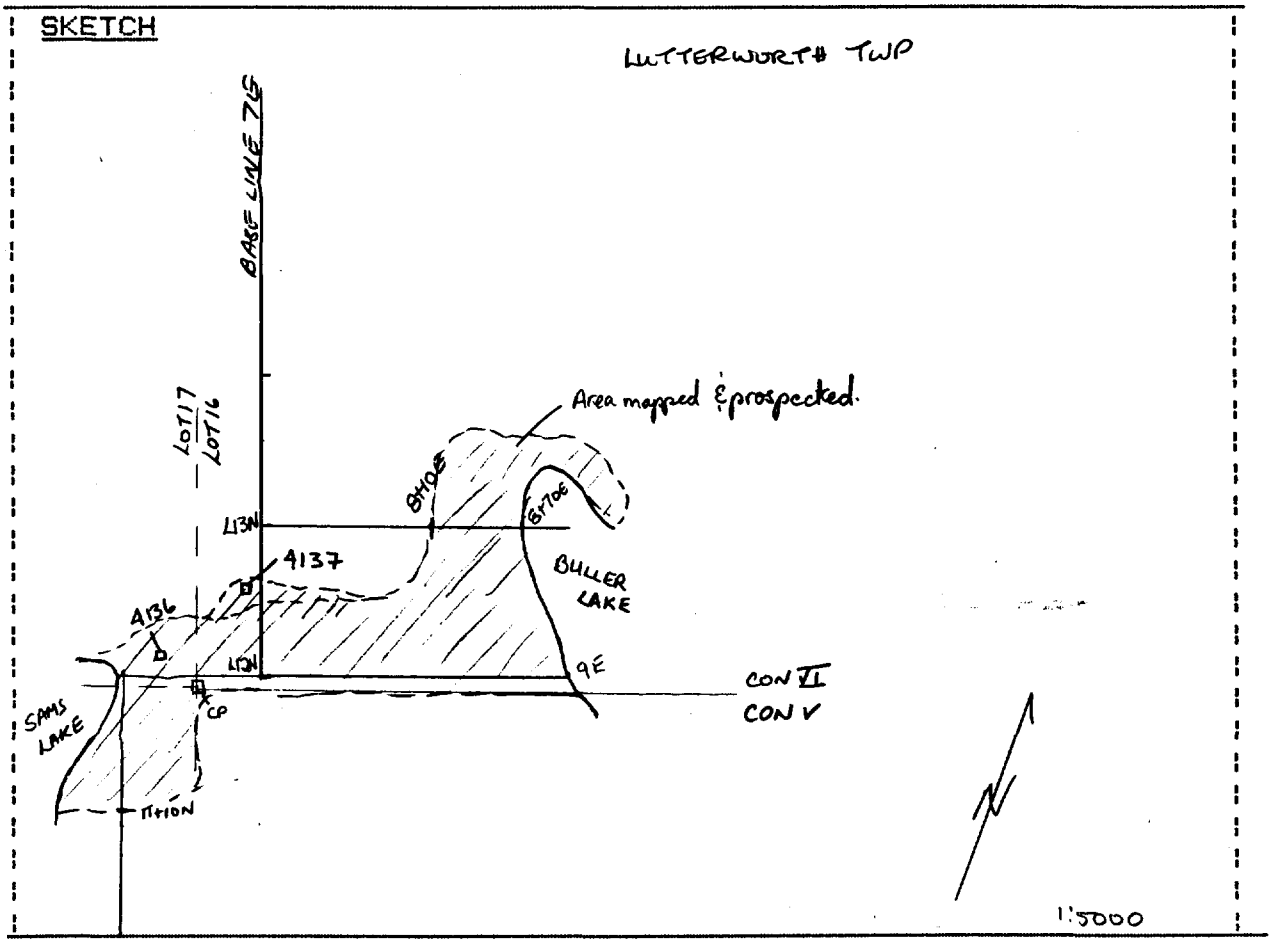
PERSONNEL: A. Soever

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Mapping Sheet Bul 91-10

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	~~None~~ 4136, 4137	rocks.

SKETCH



DAILY TRAVERSE REPORT

PROJECT: BULLER LAKE
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: Oct 24, 1991

TYPE OF WORK: detailed mapping & prospecting, Mnrs Bay Claims

PERSONNEL: A. Soever

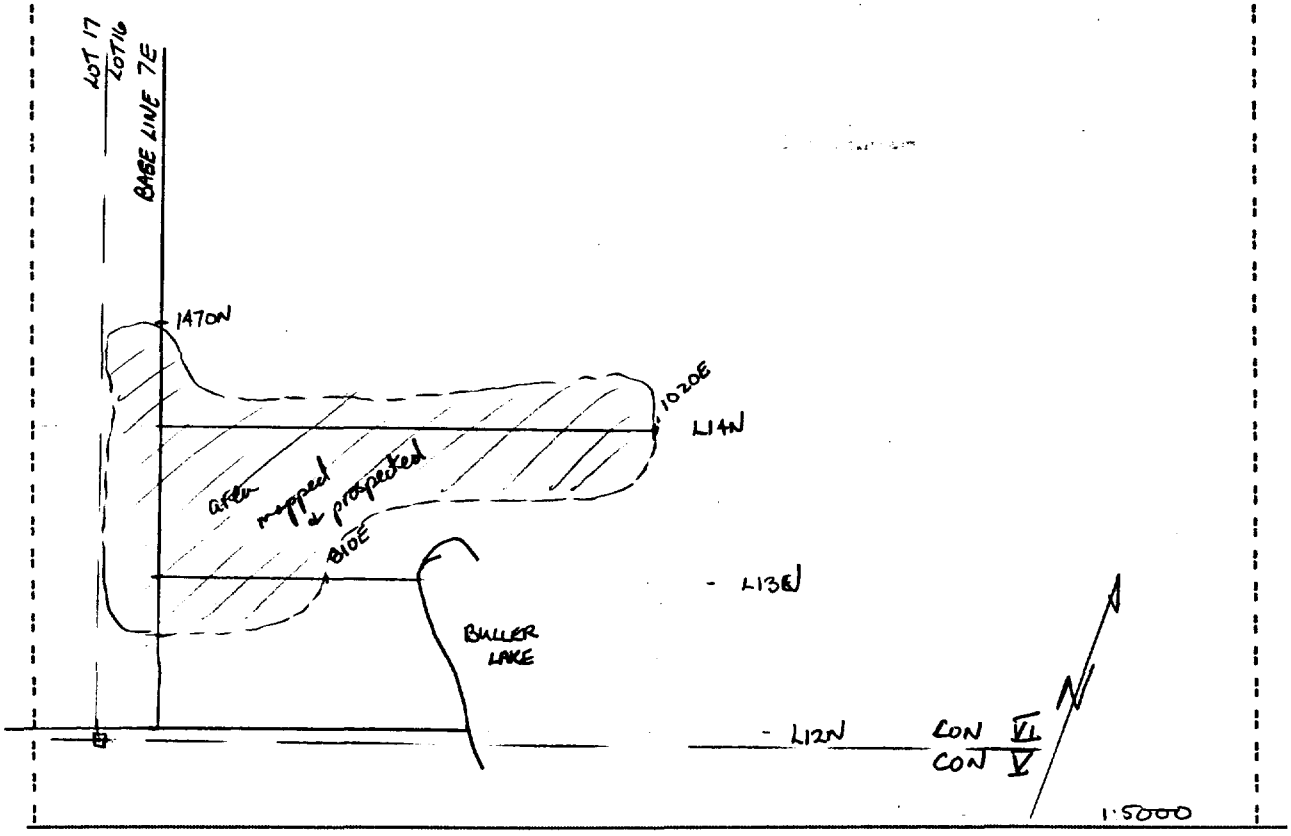
AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL 91-10

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	None	

SKETCH

LOT 16 CON VI LUTTERWORTH TWP



DAILY TRAVERSE REPORT

PROJECT: BULLER
NTS: 31 D/15
AREA: LUTTERWORTH TWP

DATE: Oct 25, 1991 1/2 DAM, HEAVY RAIN IN PM. DRIVE TO TORONTO

TYPE OF WORK: detailed mapping + prospecting, Miners Bay Claims

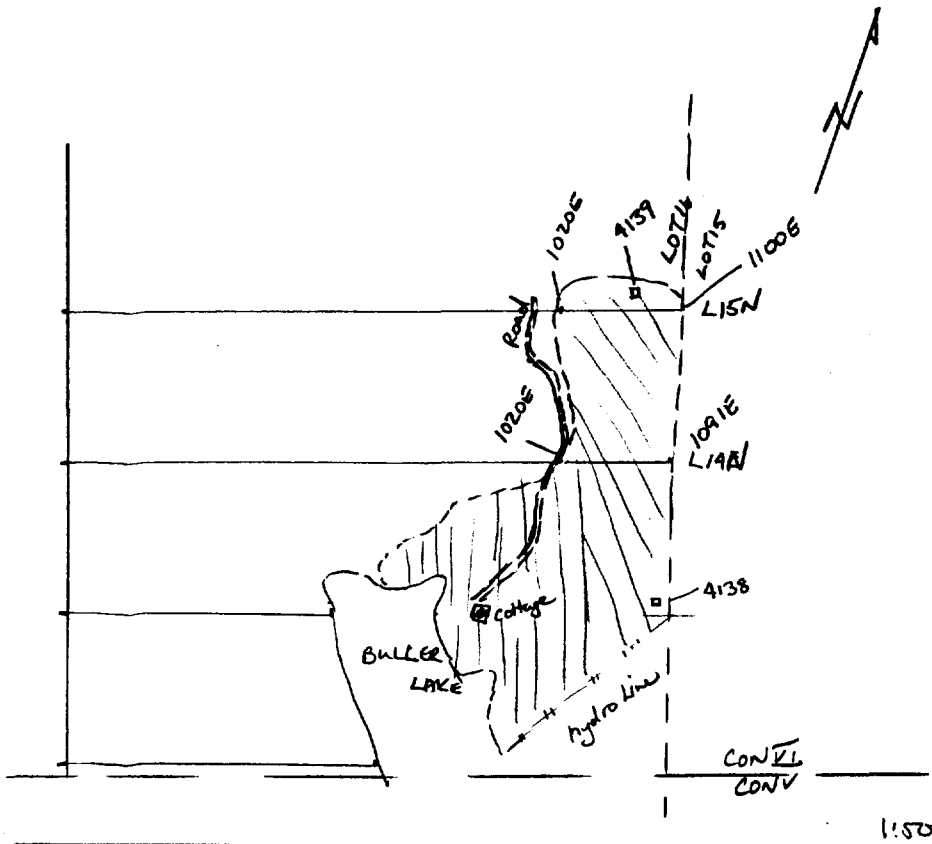
PERSONNEL: A. Socon.

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL 91-10

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4138, 4139	rocks

SKETCH LOT 16 CON VI LUTTERWORTH TWP



1:5000

DAILY TRAVERSE REPORT

PROJECT: BULLER
NTS: 31P/15
AREA: LUTTERWORTH

DATE: Oct 28, 1991

TYPE OF WORK: drive to Kinmont, Mapping + prospecting Miners Bay Claims

PERSONNEL: A Socrates

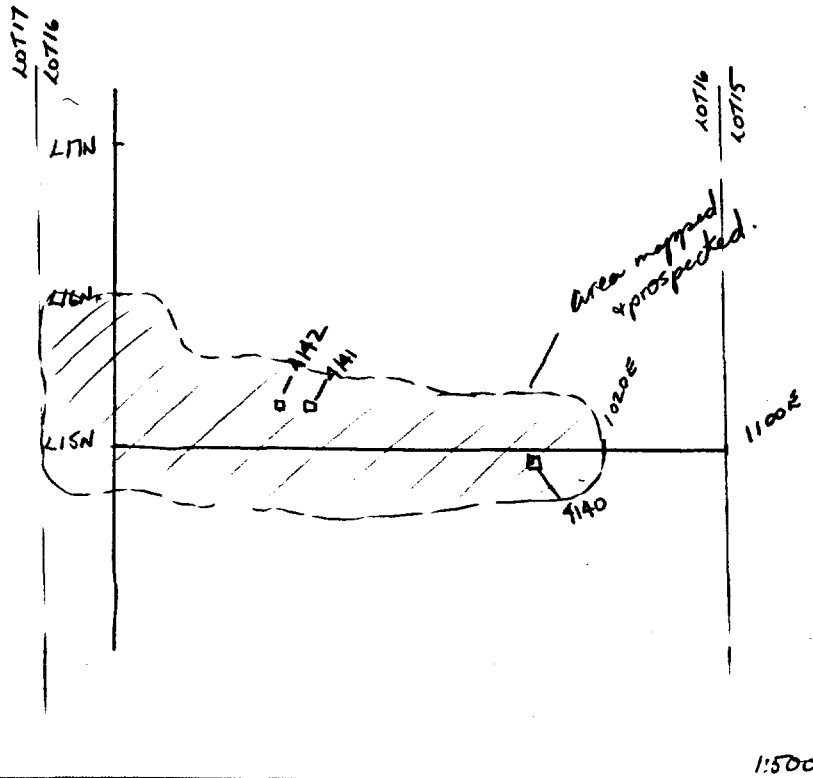
AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL 91-10

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4140, 4141, 4142	rocks

SKETCH

LOT 16, CON VI LUTTERWORTH TWP



DAILY TRAVERSE REPORT

PROJECT: BULLER,
NTS: 31 D/15
AREA: LUTTERWORTH TWP,

DATE: Oct 29, 1991 AM

TYPE OF WORK: Mapping & Prospecting

PERSONNEL: A. Soever

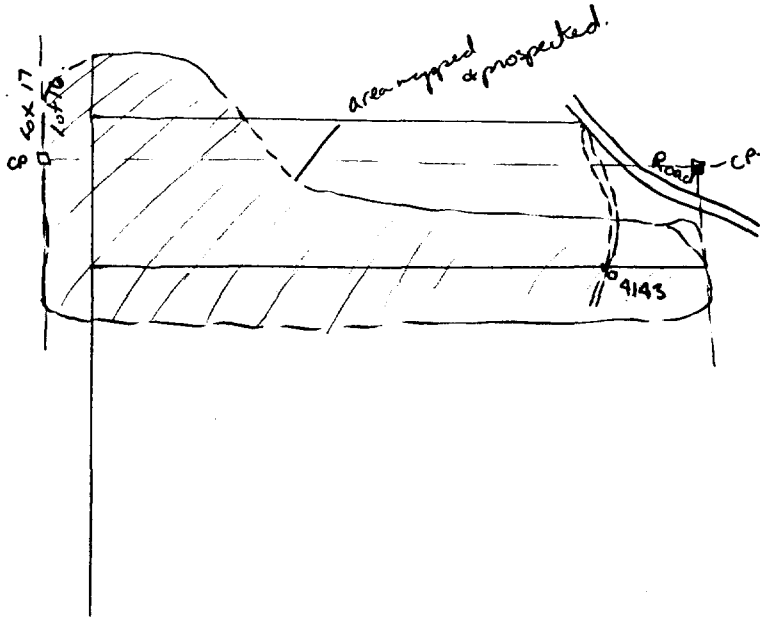
AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL 91-10.

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4143	rock

SKETCH

LOT 16, CON VI
LUTTERWORTH TWP.



N

1:5000

DAILY TRAVERSE REPORT

PROJECT: AREA 1 RECON
NTS: 31 D/1B
AREA: SOMERVILLE TWP.

DATE: Oct 29, 1991 pm.

TYPE OF WORK: prospecting & geologic mapping, Cynorwith Property.

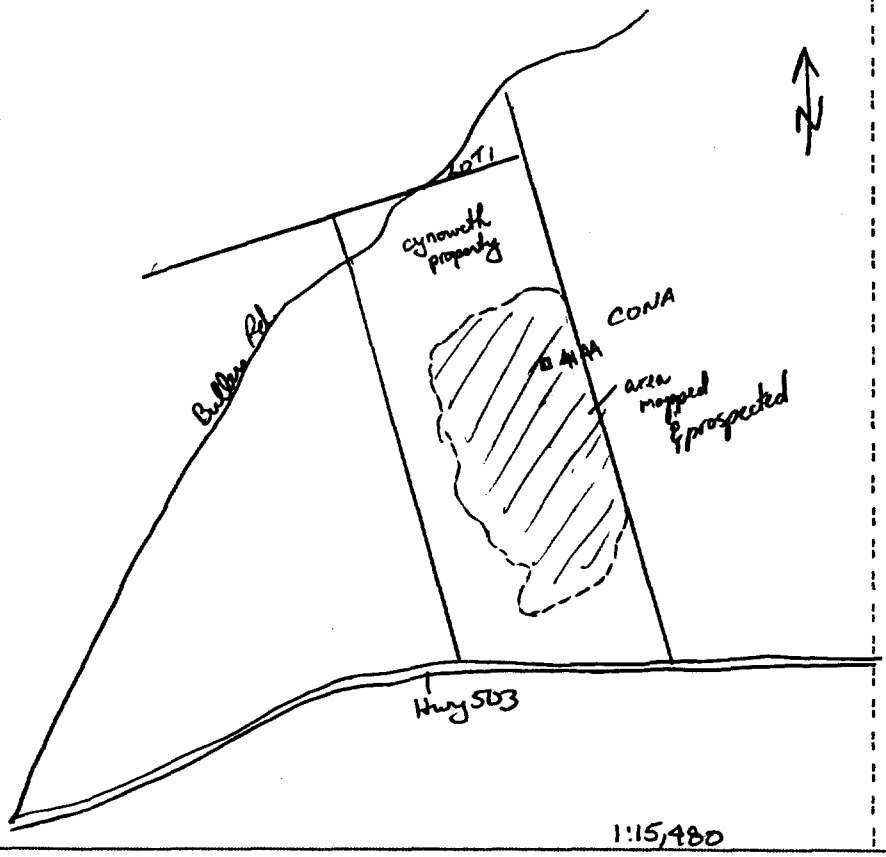
PERSONNEL: A. Soever.

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: 87-4431-07 144

SCALE: 1:15,480

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:		

SKETCH



DAILY TRAVERSE REPORT

PROJECT: BULLER
NTS: 31 D/15
AREA: HUTTERWORTH TWP

DATE: OCT 30, 1991

TYPE OF WORK: bank sampling, rock sampling & fill in mapping

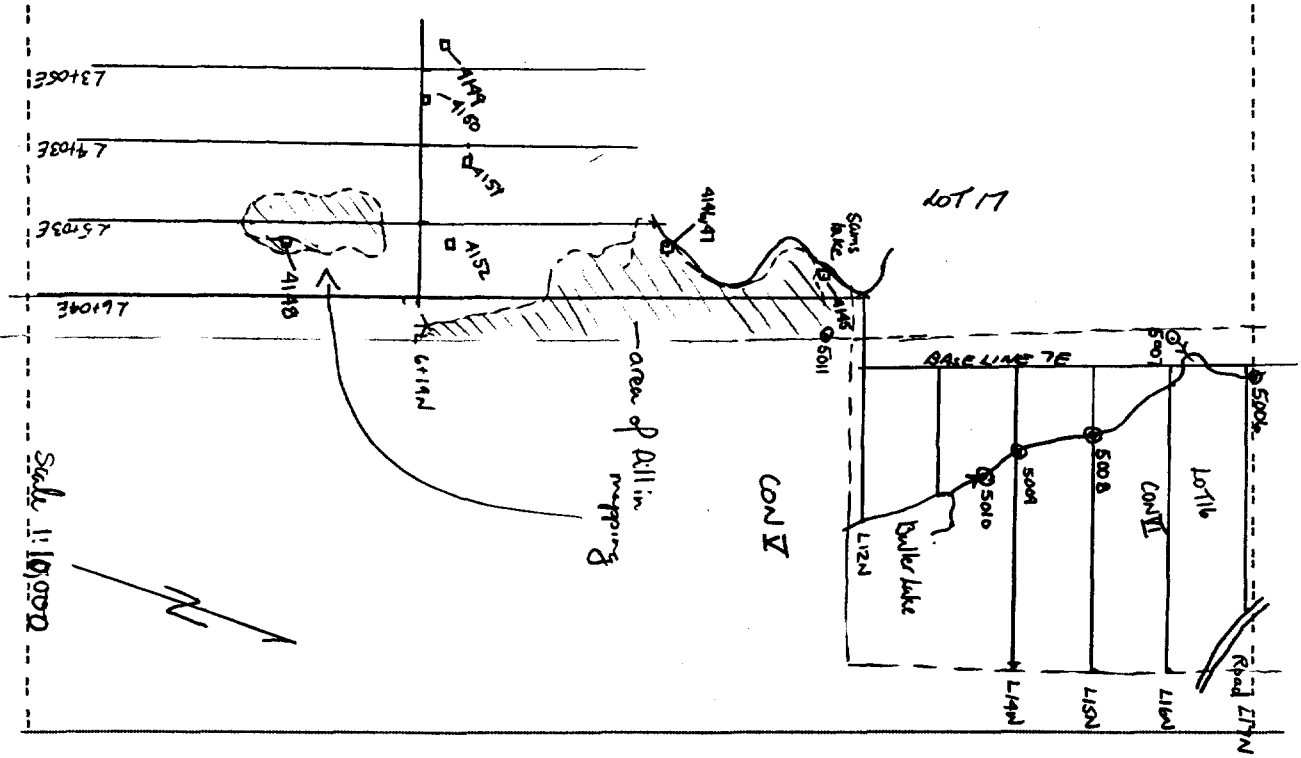
PERSONNEL: A. Soever

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL 91-10, BUL 91-11, BUL 91-12 old maps.

SCALE:

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	5006 - 5011	organic banks
	4145 - 4152	rocks.

SKETCH



DAILY TRAVERSE REPORT

PROJECT: AREA 1 RECON.
NTS: 31 D/16
AREA: FRANK PORTER PROPERTY. SOMERVILLE TWP.

DATE: OCT 31, 1991

TYPE OF WORK: mapping & prospecting

PERSONNEL: A. Sowa.

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: 87-4431-07-144→146

SCALE: 1:15,480.

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	9153	rock
	5012, 5013	organic, bank

SKETCH

DAILY TRAVERSE REPORT

PROJECT: AREA 1 RECON

NTS: 31 D/15

AREA: BULLER LAKE, BOBS LAKE

DATE: Nov 22, 1991

TYPE OF WORK: -shoreline mapping & prospecting

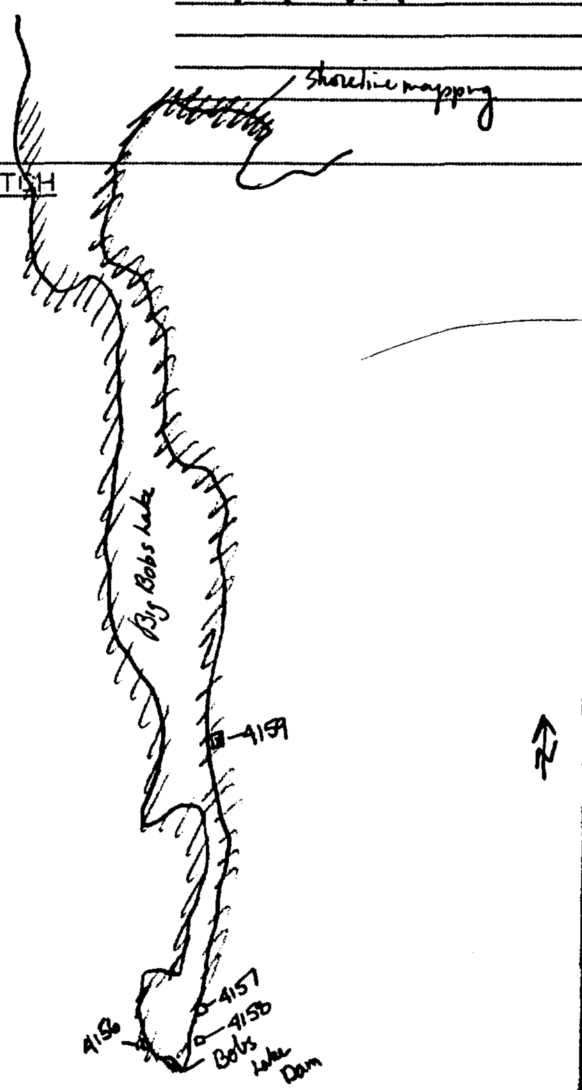
PERSONNEL: A. Soever

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: Buller Lake (blowups) 1:15000 of 87-4484-8-061; Bobs Lake, 87-4437-17-212, 87-4438-15-101

SCALE: 1:15,000 Buller Lake, 1:15480 Bobs Lake

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	4154 - 4159	rocks

SKETCH



Bobs Lake
1:15,480

Buller Lake
1:

DAILY TRAVERSE REPORT

PROJECT: BULLER
NTS: 31 D/15
AREA: Gaspard Property & claim

DATE: Nov 23, 1991

TYPE OF WORK: - organic bank sampling, rock sampling, fill in mapping

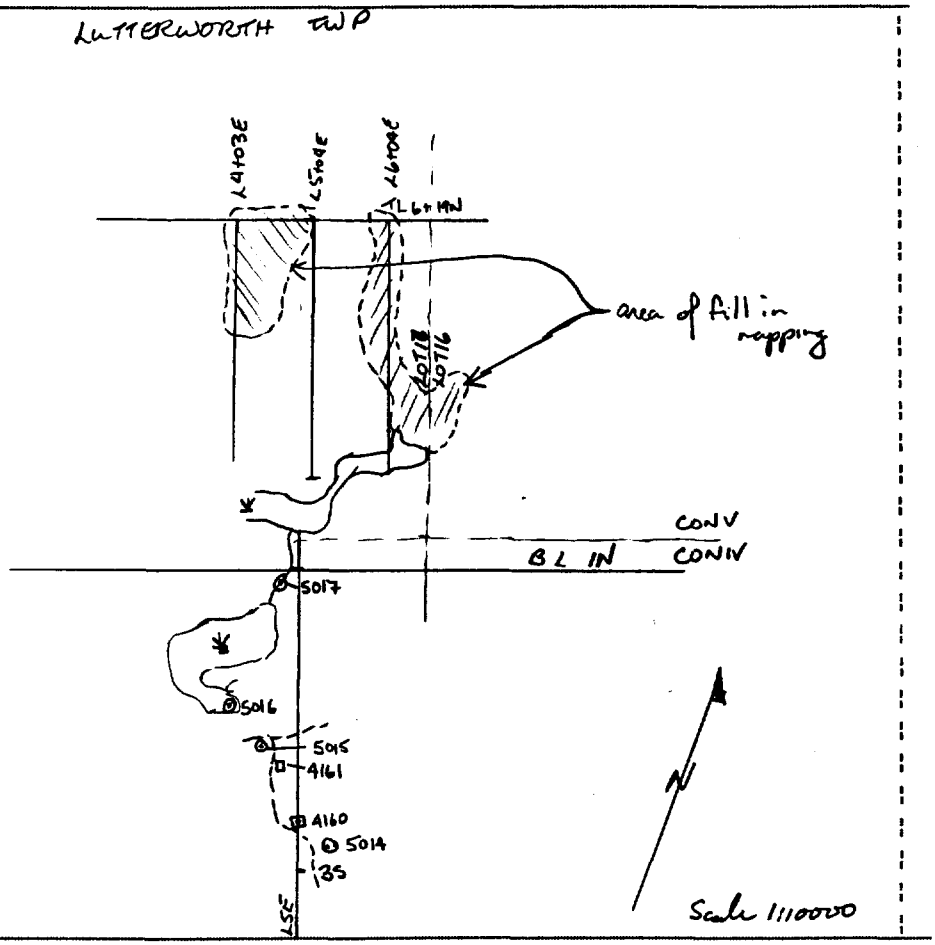
PERSONNEL: A. Soever

AIR PHOTO OR MAPPING SHEET WHERE PLOTTED: BUL91-07, BUL 91-12

SCALE: 1:2000

	SAMPLE NUMBERS	SAMPLE TYPE
SAMPLES TAKEN:	5014 - 5017	organic banks
	4160, 4161	rocks.

SKETCH



APPENDIX B

Sample Descriptions, Locations and Analyses

ROCK SAMPLE DATA

1991 ROCK SAMPLE LOCATIONS AND DESCRIPTIONS

			utm coords			
sample	easting	northing	east	north	area	description
4001	100000	100000	674350	4958685	recon	grey to white dolomitic mb,
4002	100000	100000	674320	4958705	recon	calcitic silicated dolomitic mb
4003	100000	100000	674300	4958720	recon	granitic gneiss
4004	100000	100000	674250	4958705	recon	calcitic marble
4005	100000	100000	674380	4958600	recon	grey to white dolomitic mb
4101	236	175	676204	4963144	buller	dolomitic mb
4102	-62	170	675930	4963027	buller	serpentinous grey and buff dol. mb
4103	-129	-59	675953	4962790	buller	rusty white pegmatite with quartz eyes, qfp
4104	-199	-289	675975	4962550	buller	fetid dol. mb, tr zn
4105	-141	-214	676000	4962642	buller	grey fetid dol mb, tr zn
4106	-213	-440	676018	4962405	buller	banded quartz diopside rock
4107	-55	-369	676138	4962530	buller	serpentinous diopsidic dol. mb
4108	-120	-305	676054	4962565	buller	quartzite
4109	-122	-260	676035	4962606	buller	silicated dol. mb
4110	-33	-255	676116	4962644	buller	massive diopside rock
4111	0	-255	676147	4962657	buller	quartz-diopside rock
4112	-5	-208	676124	4962698	buller	c.g. diopside-tremolite rock
4113	-40	-205	676091	4962688	buller	white dolomitic mb with serpentine
4114	15	75	676037	4962968	buller	white dol. mb, Zn
4115	28	80	676047	4962978	buller	diopsidic dol. mb, tr Zn, py
4116	51	100	676061	4963005	buller	dol. mb, tr oxidized Zn
4117	73	100	676081	4963013	buller	silicated dol. mb with diss Zn, py, sulphosalts
4118	4	135	676004	4963020	buller	white dol. mb, Zn
4119	27	160	676016	4963051	buller	dol. mb Zn
4120	205	173	676176	4963130	buller	fetid dol. mb, tr py, Zn
4121	138	163	676118	4963096	buller	silicated dol. mb, Zn
4122	138	163	676118	4963096	buller	silicated dol. mb, clots sulphosalts
4123	25	229	675988	4963115	buller	dol mb, Zn
4124	840	-542	677033	4962705	buller	rusty quartzofeldspathic schist, fg
4125	793	-540	676989	4962689	buller	rusty quartzofeldspathic schist
4126	406	-846	676744	4962261	buller	calcitic dol. mb with serp'd. forsterite
4127	100000	100000	676720	4962170	s of grid	sheared calcitic mb with green mica
4128	100000	100000	676650	4962100	s of grid	hornblende biotite gneiss
4129	100000	100000	676420	4956620	hwy 503	rusty gneiss
4130	100000	100000	674420	4956170	hwy 503	rusty gneiss

1991 ROCK SAMPLE LOCATIONS AND DESCRIPTIONS cont'd.

			utm coords			
sample	easting	northing	east	north	area	
4131	345	197	676297	4963205	buller	dol. mb, zn
4132	443	166	676400	4963213	buller	dol mb, zn
4133	552	157	676504	4963245	buller	dol mb, zn
4134	674	175	676610	4963308	buller	dol. mb fg diss py, ox zn
4135	674	175	676610	4963308	buller	dol mb fg diss py, zn
4136	624	1226	676170	4964263	buller	fg laminated quartzite
4137	689	1260	676218	4964319	buller	dol mb Zn
4138	1081	1311	676562	4964513	buller	rusty graphitic quartzofeldspathic rusty gneiss
4139	1059	1527	676461	4964706	buller	rusty calcsilicate gneiss
4140	973	1488	676396	4964637	buller	sheared rusty qtz-carbonate schist, mylonite
4141	827	1527	676246	4964619	buller	dol mb, zn
4142	808	1528	676228	4964612	buller	weakly silicated dol mb, zn
4143	1030	1594	676409	4964757	buller	weathered dol mb with biotite schist, hem stain
4144	100000	100000	675360	4957140	cynoweth	bldr serpentinous dol mb, zn
4145	570	1146	676150	4964169	buller	cg calcitic dol mb, green mica hematite
4146	534	945	676192	4963969	buller	phlogopitic hornblende biotite gneiss,narrow bands in dol mb
4147	534	945	676192	4963969	buller	dol mb interlayered with 4146
4148	531	443	676377	4963503	buller	serpentinous dol mb, cpy, sulphosalts
4149	284	636	676076	4963589	buller	grey banded dolomitic marble, tr zn
4150	332	622	676126	4963594	buller	silicated dol mb tr Zn
4151	414	675	676182	4963674	buller	dol mb, tr zn
4152	525	655	676292	4963697	buller	grey dol mb, tr zn zap
4153	100000	100000	676080	4956670	frank porter	hematitic serpentinous dol mb
4154	100000	100000	677010	4963050	buller lake	rusty sheared graphitic calcitic marble
4155	100000	100000	677010	4963050	buller lake	rusty siliceous gossan with massive sulphides
4156	100000	100000	674360	4973390	bobs lake	quartz-feldspar-sillimanite-garnet gneiss
4157	100000	100000	674410	4973450	bobs lake	grey banded dolomitic marble
4158	100000	100000	674415	4973380	bobs lake	rusty paragneiss
4159	100000	100000	674490	4974020	bobs lake	pale grey dolomitic marble
4160	500	-233	676602	4962864	buller	serpentinous silicated dolomitic marble
4161	470	-150	676543	4962930	buller	tremolitic quartz diopside rock

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9122179

Comments: ATTN: A. SOEVER

CERTIFICATE A9122179

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BUL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 18-OCT-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
299	38	Sample split from other certif
200	38	Whole rock fusion

* NOTE 1:

Code 1000 is used for repeat gold analyses
It shows typical sample variability due to coarse gold effects. Each value is correct for its particular subsample.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
594	38	Al2O3 %: Whole rock	ICP-AES	0.01	99.99
542	38	BaO %: Whole rock	ICP-AES	0.01	99.99
588	38	CaO %: Whole rock	ICP-AES	0.01	99.99
586	38	Fe2O3(total) %: Whole rock	ICP-AES	0.01	99.99
821	38	K2O %: Whole rock	ICP-AES	0.01	99.99
593	38	MgO %: Whole rock	ICP-AES	0.01	99.99
596	38	MnO %: Whole rock	ICP-AES	0.01	99.99
599	38	Na2O %: Whole rock	ICP-AES	0.01	99.99
597	38	P2O5 %: Whole rock	ICP-AES	0.01	99.99
592	38	SiO2 %: Whole rock	ICP-AES	0.01	99.99
595	38	TiO2 %: Whole rock	ICP-AES	0.01	99.99
475	38	L.O.I. %: Loss on ignition	FURNACE	0.01	99.99
540	38	Total %	CALCULATION	0.01	105.00

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BUL
Comments: ATTN: A. SOEVER

Certificate Date: 07-OCT-91
Invoice No. :19122179
P.O. Number :

CERTIFICATE OF ANALYSIS A9122179

SAMPLE	PREP CODE		Al2O3 %	BaO %	CaO %	Fe2O3 %	K2O %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	TiO2 %	LOI %	TOTAL %
4001	299	200	0.37	< 0.01	29.74	0.47	0.07	21.54	0.02	0.09	0.01	3.00	0.01	45.43	100.75
4002	299	200	0.22	< 0.01	29.65	0.48	0.08	22.18	0.02	0.05	0.05	2.87	0.01	45.50	101.15
4003	299	200	15.09	0.09	1.21	0.65	4.46	0.57	< 0.01	4.68	0.09	72.58	0.09	1.44	100.95
4004	299	200	4.70	0.01	38.05	0.55	0.86	3.81	0.02	1.60	0.09	18.89	0.02	31.48	100.10
4005	299	200	0.27	< 0.01	30.12	0.24	0.11	21.07	0.01	0.07	0.01	1.71	< 0.01	45.94	99.56
4101	299	200	0.30	< 0.01	30.72	0.36	0.04	20.05	0.02	0.13	0.03	4.60	0.01	44.55	100.80
4102	299	200	0.11	< 0.01	20.65	1.89	0.03	27.91	0.11	0.04	< 0.01	5.22	< 0.01	44.25	100.20
4103	299	200	15.63	1.55	0.90	0.73	4.82	1.04	0.01	5.27	0.09	69.68	0.02	2.53	102.25
4104	299	200	0.31	0.03	29.56	0.30	0.10	21.23	0.06	0.12	0.01	1.98	< 0.01	46.38	100.10
4105	299	200	0.19	0.01	30.54	0.22	0.09	21.20	0.04	0.05	< 0.01	0.87	< 0.01	46.49	99.71
4106	299	200	0.29	0.01	9.19	1.55	0.03	7.78	0.04	0.22	0.12	77.81	< 0.01	1.61	98.65
4107	299	200	< 0.01	< 0.01	30.13	0.40	0.01	20.66	0.05	< 0.01	0.02	14.89	< 0.01	34.57	100.80
4108	299	200	< 0.01	0.04	8.50	0.42	0.03	6.84	0.01	0.01	0.13	81.88	< 0.01	1.04	98.93
4109	299	200	0.03	< 0.01	27.45	0.46	0.02	20.03	0.04	0.09	0.12	38.60	< 0.01	13.48	100.35
4110	299	200	< 0.01	< 0.01	25.43	0.44	0.03	19.88	0.05	0.07	0.07	52.52	< 0.01	1.12	99.64
4111	299	200	< 0.01	0.04	5.25	0.47	0.03	4.73	0.01	< 0.01	0.14	86.82	< 0.01	0.61	98.13
4112	299	200	0.04	0.10	25.93	0.48	0.07	19.02	0.05	0.16	0.06	48.71	< 0.01	5.03	99.64
4113	299	200	< 0.01	< 0.01	35.92	0.28	0.02	16.57	0.08	< 0.01	0.04	12.81	< 0.01	35.64	101.40
4114	299	200	< 0.01	< 0.01	29.88	0.32	0.02	21.56	0.03	0.02	0.02	7.64	< 0.01	39.78	99.29
4115	299	200	< 0.01	< 0.01	31.53	0.39	0.10	21.89	0.03	< 0.01	< 0.01	2.31	< 0.01	44.60	100.90
4116	299	200	0.10	0.01	31.08	0.35	0.04	20.92	0.05	0.02	< 0.01	1.32	< 0.01	46.59	100.50
4117	299	200	0.18	0.01	30.98	0.83	0.12	21.22	0.04	0.05	< 0.01	2.94	0.01	43.19	99.57
4118	299	200	0.04	< 0.01	30.77	0.30	0.03	21.55	0.02	0.05	< 0.01	1.28	< 0.01	45.83	99.91
4119	299	200	0.01	< 0.01	31.40	0.25	0.03	21.36	0.02	0.02	< 0.01	0.31	< 0.01	46.53	99.97
4120	299	200	0.03	< 0.01	31.73	0.34	0.05	21.37	0.02	0.02	< 0.01	0.56	< 0.01	46.30	100.45
4121	299	200	0.07	< 0.01	27.31	0.52	0.04	19.70	0.03	0.05	0.05	36.70	< 0.01	13.82	98.30
4122	299	200	0.10	< 0.01	31.56	0.48	0.06	20.31	0.03	0.05	0.03	11.42	< 0.01	35.40	99.46
4123	299	200	0.05	< 0.01	32.34	0.34	0.05	21.19	0.02	0.01	< 0.01	0.47	< 0.01	46.11	100.60
4124	299	200	10.20	0.06	0.70	1.33	6.15	0.63	< 0.01	1.48	0.17	75.60	0.50	3.19	100.00
4125	299	200	10.23	0.06	1.54	7.19	6.03	1.28	< 0.01	1.12	0.38	64.77	0.54	6.16	99.31
4126	299	200	2.05	0.02	33.33	2.61	0.99	16.59	0.11	0.15	0.05	7.52	0.21	38.76	102.40
4127	299	200	0.33	< 0.01	34.00	0.57	0.13	18.88	0.06	0.05	0.03	3.71	0.01	44.12	101.90
4128	299	200	12.80	< 0.01	12.22	13.79	1.04	7.75	0.17	2.29	0.24	44.40	1.85	1.66	98.22
4129	299	200	8.78	0.14	0.69	8.18	4.66	1.90	< 0.01	1.15	0.26	68.17	0.43	5.07	99.45
4130	299	200	14.69	0.11	1.79	5.09	7.79	3.86	0.01	2.10	0.10	61.87	0.95	2.63	100.95
4131	299	200	0.54	< 0.01	30.07	0.56	0.18	21.52	0.03	0.08	0.01	2.59	0.03	45.83	101.45
4132	299	200	0.41	< 0.01	29.37	0.62	0.21	21.83	0.03	0.05	0.01	4.33	0.03	44.15	101.05
4133	299	200	0.16	< 0.01	31.00	0.46	0.05	21.97	0.02	0.08	0.02	2.58	0.01	45.12	101.45

CERTIFICATION: B. Caplan

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9122178

Comments: ATTN: A. SOEVER

CERTIFICATE A9122178

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BUL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 27-SEP-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	38	Geochem ring to approx 150 mesh
294	38	Crush and split (0-10 pounds)
238	38	NITRIC-AQUA REGIA DIGESTION
287	38	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
6	38	Ag ppm: HNO3-aqua regia digest	AAS-BKGD CORR	0.2	100.0
13	38	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
23	38	Bi ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.1	1000
2	38	Cu ppm: HNO3-aqua regia digest	AAS	1	10000
7	38	Cd ppm: HNO3-aqua regia digest	AAS-BKGD CORR	0.1	200
20	38	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
3	38	Mo ppm: HNO3-aqua regia digest	AAS	1	1000
4	38	Pb ppm: HNO3-aqua regia digest	AAS-BKGD CORR	1	10000
22	38	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
16	38	Se ppm: HCl-KClO3 digest, ext	AAS-BKGD CORR	0.2	100.0
5	38	Zn ppm: HNO3-aqua regia digest	AAS	1	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS **

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BUL
Comments: ATTN: A. SOEVER

Certificate Date: 27-SEP-91
Invoice No. :I9122178
P.O. Number :

CERTIFICATE OF ANALYSIS A9122178

SAMPLE DESCRIPTION	PREP CODE		Ag ppm Aqua R	As ppm	Bi ppm	Cu ppm	Cd ppm	Hg ppb	Mo ppm	Pb ppm	Sb ppm	Se ppm	Zn ppm			
4001	205	294	< 0.2	1	< 0.1	24	< 0.1	30	< 1	7	< 0.2	< 0.2	80			
4002	205	294	< 0.2	1	< 0.1	24	< 0.1	20	2	6	< 0.2	< 0.2	36			
4003	205	294	< 0.2	< 1	< 0.1	27	< 0.1	20	< 1	4	< 0.2	< 0.2	10			
4004	205	294	< 0.2	< 1	< 0.1	17	< 0.1	20	2	7	< 0.2	< 0.2	18			
4005	205	294	< 0.2	< 1	< 0.1	14	< 0.1	20	< 1	3	< 0.2	< 0.2	29			
4101	205	294	< 0.2	< 1	< 0.1	17	< 0.1	20	1	7	< 0.2	< 0.2	26			
4102	205	294	< 0.2	< 1	< 0.1	21	< 0.1	20	< 1	1	< 0.2	< 0.2	24			
4103	205	294	< 0.2	< 1	< 0.1	15	< 0.1	20	< 1	5	< 0.2	< 0.2	7			
4104	205	294	< 0.2	2	0.4	20	< 0.1	20	< 1	69	< 0.2	< 0.2	45			
4105	205	294	< 0.2	< 1	< 0.1	10	0.5	40	< 1	4	< 0.2	< 0.2	105			
4106	205	294	< 0.2	2	< 0.1	7	< 0.1	20	11	9	< 0.2	< 0.2	22			
4107	205	294	< 0.2	< 1	< 0.1	10	< 0.1	20	< 1	1	< 0.2	< 0.2	10			
4108	205	294	< 0.2	< 1	< 0.1	8	< 0.1	10	< 1	< 1	< 0.2	< 0.2	8			
4109	205	294	< 0.2	< 1	< 0.1	10	< 0.1	10	< 1	2	< 0.2	< 0.2	17			
4110	205	294	< 0.2	< 1	< 0.1	4	< 0.1	10	< 1	4	< 0.2	< 0.2	18			
4111	205	294	< 0.2	< 1	< 0.1	11	< 0.1	10	< 1	< 1	< 0.2	< 0.2	7			
4112	205	294	< 0.2	< 1	< 0.1	25	< 0.1	5	< 1	5	< 0.2	< 0.2	12			
4113	205	294	< 0.2	< 1	< 0.1	21	< 0.1	10	< 1	4	< 0.2	< 0.2	18			
4114	205	294	< 0.2	< 1	< 0.1	20	54.0	2200	< 1	9	< 0.2	< 0.2	9000			
4115	205	294	< 0.2	< 1	< 0.1	18	5.0	230	< 1	16	< 0.2	< 0.2	1000			
4116	205	294	0.4	3	0.7	23	2.1	850	2	220	2.6	< 0.2	330			
4117	205	294	1.6	14	< 0.1	138	30.0	5700	3	78	16.5	< 0.2	5400			
4118	205	294	< 0.2	1	< 0.1	28	4.6	270	3	9	0.6	< 0.2	1000			
4119	205	294	< 0.2	5	< 0.1	26	11.9	300	3	5	0.2	< 0.2	2000			
4120	205	294	0.2	1	0.6	16	0.8	70	4	71	1.8	< 0.2	105			
4121	205	294	1.0	22	0.4	90	51.0	35000	< 1	100	67	< 0.2	>10000			
4122	205	294	9.8	230	5.1	420	63.0	32000	2	1600	520	0.6	>10000			
4123	205	294	< 0.2	3	0.2	26	23.0	7000	5	24	7.4	< 0.2	3500			
4124	205	294	0.4	5	1.3	12	0.8	1300	65	20	5.4	2.0	167			
4125	205	294	< 0.2	1	0.7	117	1.0	600	43	14	2.4	0.8	230			
4126	205	294	< 0.2	1	0.4	98	< 0.1	80	5	21	0.8	< 0.2	82			
4127	205	294	< 0.2	< 1	< 0.1	12	< 0.1	120	2	8	1.2	< 0.2	42			
4128	205	294	< 0.2	< 1	< 0.1	51	< 0.1	70	< 1	2	0.2	< 0.2	64			
4129	205	294	< 0.2	1	0.4	270	0.3	110	46	15	0.6	1.0	118			
4130	205	294	< 0.2	< 1	< 0.1	49	< 0.1	80	2	2	0.2	0.2	58			
4131	205	294	0.5	5	0.2	34	11.0	640	3	55	4.2	< 0.2	1500			
4132	205	294	1.5	2	1.3	22	1.3	320	2	67	3.6	< 0.2	330			
4133	205	294	0.7	2	0.2	21	14.9	4200	2	205	7.8	< 0.2	3200			

CERTIFICATION: Stuart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9122933

Comments: ATTN: A. SOEVER

CERTIFICATE A9122933

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BULL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 11-OCT-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
214	2	Received sample as pulp

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
316	2	Zn %: HClO4-HNO3 digestion	AAS	0.01	100.0

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: GRENVILLE EXPLORATION CONSULTANTS **

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BULL
Comments: ATTN: A. SOEVER

Page Number :1
Total Pages :1
Certificate Date: 11-OCT-91
Invoice No. :I9122933
P.O. Number :

CERTIFICATE OF ANALYSIS A9122933

SAMPLE	PREP CODE	Zn %
4121	214 --	1.30
4122	214 --	1.34

CERTIFICATION: A Christie

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9124505

Comments: ATTN:ALAR SOEVER

CERTIFICATE A9124505

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BUL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 21-NOV-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
299	20	Sample split from other certif
200	20	Whole rock fusion
* NOTE	1:	

Code 1000 is used for repeat gold analyses
It shows typical sample variability due to coarse gold effects. Each value is correct for its particular subsample.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
594	20	Al2O3 %: Whole rock	ICP-AES	0.01	99.99
542	20	BaO %: Whole rock	ICP-AES	0.01	99.99
588	20	CaO %: Whole rock	ICP-AES	0.01	99.99
586	20	Fe2O3(total) %: Whole rock	ICP-AES	0.01	99.99
821	20	K2O %: Whole rock	ICP-AES	0.01	99.99
593	20	MgO %: Whole rock	ICP-AES	0.01	99.99
596	20	MnO %: Whole rock	ICP-AES	0.01	99.99
599	20	Na2O %: Whole rock	ICP-AES	0.01	99.99
597	20	P2O5 %: Whole rock	ICP-AES	0.01	99.99
592	20	SiO2 %: Whole rock	ICP-AES	0.01	99.99
595	20	TiO2 %: Whole rock	ICP-AES	0.01	99.99
475	20	L.O.I. %: Loss on ignition	FURNACE	0.01	99.99
540	20	Total %	CALCULATION	0.01	105.00

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BUL
Comments: ATTN:ALAR SOEVER

Certificate Date: 21-NOV-91
Invoice No. :19124505
P.O. Number :
Account :JKH

CORRECTED COPY FOR ELEMENT P205

CERTIFICATE OF ANALYSIS A9124505

SAMPLE	PREP CODE		Al2O3 %	BaO %	CaO %	Fe2O3 %	K2O %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	TiO2 %	LOI %	TOTAL %	
4134	299	200	0.42	0.02	28.80	1.41	0.38	21.33	0.06	0.33	< 0.01	3.13	0.01	42.34	98.23	
4135	299	200	0.08	0.02	29.72	0.38	0.21	21.45	0.06	0.27	< 0.01	3.06	< 0.01	44.53	99.79	
4136	299	200	1.00	0.01	2.92	0.70	0.67	5.63	0.01	0.78	0.05	85.91	0.01	1.10	98.77	
4137	299	200	0.18	0.01	28.75	0.12	0.35	21.12	0.01	0.29	< 0.01	7.13	0.01	42.25	100.25	
4138	299	200	7.23	0.13	1.06	12.19	2.84	1.46	< 0.01	1.99	0.22	65.20	0.34	5.79	98.44	
4139	299	200	13.76	0.03	9.10	11.93	1.80	4.40	0.07	2.68	0.23	45.57	2.32	6.27	98.16	
4140	299	200	10.56	0.06	0.47	4.51	3.50	1.04	< 0.01	3.01	0.23	71.75	0.52	4.03	99.69	
4141	299	200	0.32	< 0.01	28.60	0.34	0.39	20.98	0.04	0.39	< 0.01	5.11	0.02	43.71	99.93	
4142	299	200	0.36	0.01	29.66	0.17	0.60	19.38	0.04	0.04	< 0.01	8.61	0.01	39.66	98.55	
4143	299	200	0.16	< 0.01	29.01	3.30	0.32	20.38	0.16	0.02	< 0.01	1.66	0.01	44.89	99.92	
4144	299	200	0.11	< 0.01	29.70	0.45	0.34	20.41	0.03	0.02	< 0.01	8.23	< 0.01	39.29	98.61	
4145	299	200	0.18	< 0.01	34.96	1.66	0.37	17.26	0.12	0.04	< 0.01	0.12	0.01	45.78	100.50	
4146	299	200	10.44	0.50	7.20	9.08	4.30	15.62	0.03	0.89	3.35	36.64	3.73	7.11	98.90	
4147	299	200	1.24	0.07	26.48	2.24	1.11	20.90	0.10	0.33	0.10	9.05	0.10	39.60	101.30	
4148	299	200	0.14	< 0.01	27.41	0.37	0.23	20.43	0.03	0.29	< 0.01	14.28	< 0.01	37.96	101.15	
4149	299	200	0.17	< 0.01	27.94	0.05	0.34	21.16	0.02	0.29	< 0.01	6.24	0.01	43.63	99.86	
4150	299	200	0.10	< 0.01	27.91	0.41	0.29	18.65	0.06	0.39	< 0.01	26.66	0.01	23.77	98.29	
4151	299	200	0.04	< 0.01	30.33	< 0.01	0.36	21.48	0.01	0.30	< 0.01	3.26	< 0.01	45.20	101.00	
4152	299	200	0.09	< 0.01	29.89	0.04	0.42	21.55	0.01	0.03	< 0.01	3.50	< 0.01	44.23	99.78	
4153	299	200	8.12	0.01	22.35	3.69	1.38	10.05	0.10	1.29	0.02	35.69	0.19	14.05	96.95	

CERTIFICATION: B. Eagle

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9124504

Comments: ATTN:ALAR SOEVER

CERTIFICATE A9124504

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BUL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 19-NOV-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	20	Geochem ring to approx 150 mesh
294	20	Crush and split (0-10 pounds)
238	20	NITRIC-AQUA REGIA DIGESTION
287	20	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
6	20	Ag ppm: HNO3-aqua regia digest	AAS-BKGD CORR	0.2	100.0
13	20	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
23	20	Bi ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.1	1000
2	20	Cu ppm: HNO3-aqua regia digest	AAS	1	10000
7	20	Cd ppm: HNO3-aqua regia digest	AAS-BKGD CORR	0.1	200
20	20	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
3	20	Mo ppm: HNO3-aqua regia digest	AAS	1	1000
4	20	Pb ppm: HNO3-aqua regia digest	AAS-BKGD CORR	1	10000
22	20	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
16	20	Se ppm: HCl-KClO3 digest, ext	AAS-BKGD CORR	0.2	100.0
5	20	Zn ppm: HNO3-aqua regia digest	AAS	1	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS *

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BUL
Comments: ATTN:ALAR SOEVER

Certificate Date: 19-NOV-91
Invoice No. :19124504
P.O. Number :
Account :JKH

CERTIFICATE OF ANALYSIS A9124504

SAMPLE	PREP CODE		Ag ppm Aqua R	As ppm	Bi ppm	Cu ppm	Cd ppm	Hg ppb	Mo ppm	Pb ppm	Sb ppm	Se ppm	Zn ppm			
4134	205	294	6.8	48	4.6	475	14.0	7000	2	1830	75	0.4	2150			
4135	205	294	0.4	6	0.2	42	15.0	6000	2	85	8.4	< 0.2	2050			
4136	205	294	< 0.2	1	< 0.1	115	0.3	200	2	20	1.2	< 0.2	62			
4137	205	294	0.2	2	0.2	22	8.2	650	2	390	10.0	< 0.2	1400			
4138	205	294	0.2	2	0.9	48	< 0.1	100	44	10	0.2	0.6	28			
4139	205	294	0.2	< 1	0.4	148	< 0.1	60	2	3	< 0.2	< 0.2	62			
4140	205	294	0.2	6	0.6	36	< 0.1	40	6	6	< 0.2	0.4	18			
4141	205	294	< 0.2	< 1	< 0.1	10	0.7	90	1	2	< 0.2	< 0.2	104			
4142	205	294	< 0.2	< 1	< 0.1	8	9.1	1300	2	3	< 0.2	< 0.2	2300			
4143	205	294	< 0.2	< 1	0.1	23	0.9	60	8	11	< 0.2	< 0.2	118			
4144	205	294	< 0.2	< 1	< 0.1	38	12.0	40	1	< 1	< 0.2	< 0.2	4100			
4145	205	294	< 0.2	< 1	< 0.1	15	0.4	10	1	< 1	< 0.2	< 0.2	44			
4146	205	294	< 0.2	1	< 0.1	75	0.1	50	< 1	11	< 0.2	0.2	84			
4147	205	294	< 0.2	< 1	< 0.1	22	0.1	10	< 1	4	< 0.2	0.2	26			
4148	205	294	3.5	3	28.0	800	0.3	20	< 1	25	98	0.4	38			
4149	205	294	0.2	1	0.9	38	5.0	60	< 1	115	2.0	0.2	880			
4150	205	294	0.4	< 1	0.6	300	26.0	1900	< 1	6	2.8	0.2	8100			
4151	205	294	0.5	1	0.5	28	13.0	520	1	116	2.0	< 0.2	2050			
4152	205	294	< 0.2	< 1	< 0.1	46	2.0	180	< 1	5	0.4	< 0.2	620			
4153	205	294	< 0.2	< 1	0.1	40	0.7	70	< 1	13	< 0.2	< 0.2	100			

CERTIFICATION: _____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9125631

Comments: ATTN: A. SOEVER

CERTIFICATE A9125631

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BUL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 27-DEC-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
299	9	Sample split from other certif
200	9	Whole rock fusion
* NOTE	1:	

Code 1000 is used for repeat gold analyses
It shows typical sample variability due to coarse gold effects. Each value is correct for its particular subsample.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
594	9	Al2O3 %: Whole rock	ICP-AES	0.01	99.99
542	9	BaO %: Whole rock	ICP-AES	0.01	99.99
588	9	CaO %: Whole rock	ICP-AES	0.01	99.99
586	9	Fe2O3(total) %: Whole rock	ICP-AES	0.01	99.99
821	9	K2O %: Whole rock	ICP-AES	0.01	99.99
593	9	MgO %: Whole rock	ICP-AES	0.01	99.99
596	9	MnO %: Whole rock	ICP-AES	0.01	99.99
599	9	Na2O %: Whole rock	ICP-AES	0.01	99.99
597	9	P2O5 %: Whole rock	ICP-AES	0.01	99.99
592	9	SiO2 %: Whole rock	ICP-AES	0.01	99.99
595	9	TiO2 %: Whole rock	ICP-AES	0.01	99.99
475	9	L.O.I. %: Loss on ignition	FURNACE	0.01	99.99
540	9	Total %	CALCULATION	0.01	105.00

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BUL
Comments: ATTN: A. SOEVER

Page Number :1
Total Pages :1
Certificate Date: 27-DEC-91
Invoice No. :I9125631
P.O. Number :
Account :JKH

CERTIFICATE OF ANALYSIS A9125631

SAMPLE	PREP CODE	Al2O3 %	BaO %	CaO %	Fe2O3 %	K2O %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	TiO2 %	LOI %	TOTAL %
4154	299 200	10.39	0.15	0.87	3.74	6.03	0.91	< 0.01	0.96	0.24	67.38	0.52	7.31	98.50
4155	299 200	7.31	0.10	1.10	23.32	3.23	1.22	< 0.01	0.63	0.22	52.22	0.38	9.29	99.03
4156	299 200	15.76	0.13	0.65	4.57	7.08	0.43	0.22	2.49	0.12	67.83	0.26	1.46	101.00
4157	299 200	1.04	0.01	27.77	3.29	0.46	18.72	0.09	0.12	< 0.01	6.29	0.06	41.85	99.69
4158	299 200	0.38	0.02	30.29	0.42	0.22	19.15	0.06	0.11	0.27	10.88	0.01	38.76	100.55
4159	299 200	16.84	0.09	5.34	4.92	3.54	2.44	0.03	1.14	0.15	55.99	0.59	7.70	98.77
4160	299 200	0.32	< 0.01	30.34	0.94	0.09	20.42	0.10	0.09	< 0.01	4.12	0.01	44.36	100.80
4161	299 200	0.25	0.10	11.34	1.00	0.16	15.05	0.04	0.21	0.10	67.42	0.01	2.11	97.79
4162	299 200	0.39	0.02	33.46	3.59	0.03	6.07	0.90	0.04	0.06	2.19	0.03	15.17	61.95

CERTIFICATION: B. Caughlin

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9125630

Comments: ATTN: A. SOEVER

CERTIFICATE A9125630

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BUL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 12-DEC-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	9	Geochem ring to approx 150 mesh
294	9	Crush and split (0-10 pounds)
238	9	NITRIC-AQUA REGIA DIGESTION
287	9	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
6	9	Ag ppm: HNO3-aqua regia digest	AAS-BKGD CORR	0.2	100.0
13	9	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
23	9	Bi ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.1	1000
2	9	Cu ppm: HNO3-aqua regia digest	AAS	1	10000
7	9	Cd ppm: HNO3-aqua regia digest	AAS-BKGD CORR	0.1	200
20	9	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
3	9	Mo ppm: HNO3-aqua regia digest	AAS	1	1000
4	9	Pb ppm: HNO3-aqua regia digest	AAS-BKGD CORR	1	10000
22	9	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
16	9	Se ppm: HCl-KClO3 digest, ext	AAS-BKGD CORR	0.2	100.0
5	9	Zn ppm: HNO3-aqua regia digest	AAS	1	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS *

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BUL
Comments: ATTN: A. SOEVER

Page Number :1
Total Pages :1
Certificate Date: 12-DEC-91
Invoice No. :19125630
P.O. Number :
Account :JKH

CERTIFICATE OF ANALYSIS A9125630

SAMPLE	PREP CODE		Ag ppm Aqua R	As ppm	Bi ppm	Cu ppm	Cd ppm	Hg ppb	Mo ppm	Pb ppm	Sb ppm	Se ppm	Zn ppm			
4154	205	294	0.2	1	1.0	46	< 0.1	10	50	1	< 0.2	2.8	12			
4155	205	294	0.4	2	1.4	144	< 0.1	10	48	3	< 0.2	5.2	40			
4156	205	294	< 0.2	< 1	0.2	11	< 0.1	10	5	10	< 0.2	0.2	16			
4157	205	294	0.2	2	0.1	30	20.0	830	9	42	0.2	0.6	5500			
4158	205	294	< 0.2	< 1	< 0.1	7	< 0.1	50	5	7	< 0.2	< 0.2	47			
4159	205	294	< 0.2	< 1	0.1	28	0.6	70	11	14	< 0.2	0.2	300			
4160	205	294	< 0.2	< 1	< 0.1	5	0.2	30	3	5	< 0.2	< 0.2	42			
4161	205	294	< 0.2	< 1	< 0.1	3	< 0.1	20	< 1	< 1	< 0.2	< 0.2	36			
4162	205	294	0.7	1	< 0.1	97	>200	30000	5	< 1	< 0.2	< 0.2	>10000			

CERTIFICATION: Ivan Bichler

DRAINAGE SAMPLE DATA

1991 DRAINAGE SAMPLE LOCATIONS

			utm coords		
sample	easting	northing	east	north	area
5001	408	-813	676734	4962292	buller
5002	316	-554	676552	4962498	buller
5003	330	-240	676447	4962794	buller
5004	342	-44	676385	4962980	buller
5005	620	95	676590	4963213	buller
5006	717	1701	676079	4964739	buller
5007	670	1595	676075	4964623	buller
5008	790	1500	676222	4964580	buller
5009	810	1400	676278	4964494	buller
5010	850	1352	676333	4964465	buller
5011	653	1150	676226	4964204	buller
5012	-55	-369	676210	4956610	recon
5013	-120	-305	675870	4957000	recon
5014	540	-278	676656	4962838	buller
5015	445	-130	676512	4962939	buller
5016	410	-75	676459	4962977	buller
5017	482	80	676468	4963148	buller

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9122180

Comments: ATTN: A. SOEVER

CERTIFICATE A9122180

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BUL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 30-SEP-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
217	4	Geochem ring entire sample
238	4	NITRIC-AQUA REGIA DIGESTION
287	4	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1005	4	Ag ppm: 9 element,soil and rock	ICP-AES	0.5	200
13	4	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
23	4	Bi ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.1	1000
1929	4	Co ppm: 9 element, soil & rock	ICP-AES	1	10000
1931	4	Cu ppm: 9 element, soil & rock	ICP-AES	1	10000
1932	4	Fe %: 9 element, soil & rock	ICP-AES	0.01	15.00
1937	4	Mn ppm: 9 element, soil & rock	ICP-AES	5	10000
1938	4	Mo ppm: 9 element, soil & rock	ICP-AES	1	10000
1940	4	Ni ppm: 9 element, soil & rock	ICP-AES	1	10000
1004	4	Pb ppm: 9 element,soil and rock	ICP-AES	5	10000
22	4	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
1950	4	Zn ppm: 9 element, soil & rock	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: GRENVILLE EXPLORATION CONSULTANTS **

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BUL
Comments: ATTN: A. SOEVER

Certificate Date: 30-SEP-91
Invoice No. :19122180
P.O. Number :

CERTIFICATE OF ANALYSIS A9122180

SAMPLE DESCRIPTION	PREP CODE		Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Zn ppm
5001	217	238	< 0.5	1	< 0.1	13	11	1.84	975	< 1	9	8	< 0.2	174
5002	217	238	< 0.5	3	< 0.1	2	21	2.17	1870	1	6	28	< 0.2	178
5003	217	238	< 0.5	5	< 0.1	1	208	0.37	30	3	15	12	< 0.2	140
5004	217	238	< 0.5	1	< 0.1	1	88	0.43	35	10	12	84	< 0.2	222

CERTIFICATION: B. Caughlin

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9124506

Comments: ATTN:ALAR SOEVER

CERTIFICATE A9124506

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BUL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 19-NOV-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
201	9	Dry, sieve to -80 mesh
238	9	NITRIC-AQUA REGIA DIGESTION
287	9	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1005	9	Ag ppm: 9 element,soil and rock	ICP-AES	0.5	200
13	9	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
23	9	Bi ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.1	1000
1929	9	Co ppm: 9 element, soil & rock	ICP-AES	1	10000
1931	9	Cu ppm: 9 element, soil & rock	ICP-AES	1	10000
1932	9	Fe %: 9 element, soil & rock	ICP-AES	0.01	15.00
1937	9	Mn ppm: 9 element, soil & rock	ICP-AES	5	10000
1938	9	Mo ppm: 9 element, soil & rock	ICP-AES	1	10000
1940	9	Ni ppm: 9 element, soil & rock	ICP-AES	1	10000
1004	9	Pb ppm: 9 element,soil and rock	ICP-AES	5	10000
22	9	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
1950	9	Zn ppm: 9 element, soil & rock	ICP-AES	2	10000
20	9	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS *

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BUL
Comments: ATTN:ALAR SOEVER

Page Number :1
Total Pages :1
Certificate Date: 19-NOV-91
Invoice No. :I9124506
P.O. Number :
Account :JKH

CERTIFICATE OF ANALYSIS A9124506

SAMPLE	PREP CODE	Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Zn ppm	Hg ppb
5005	201 238	< 0.5	2	0.1	3	68	0.72	75	13	13	44	1.8	308	140
5006	201 238	< 0.5	2	< 0.1	4	47	1.18	270	2	28	38	0.2	248	90
5007	201 238	< 0.5	3	< 0.1	4	343	0.99	1425	8	31	60	< 0.2	380	290
5008	201 238	< 0.5	1	0.3	7	57	0.85	1110	4	28	68	< 0.2	302	200
5009	201 238	< 0.5	1	0.1	2	24	0.78	400	1	17	24	< 0.2	154	100
5010	201 238	< 0.5	2	< 0.1	2	10	0.84	1500	< 1	10	6	< 0.2	98	50
5011	201 238	< 0.5	1	< 0.1	1	62	0.30	45	26	11	50	< 0.2	146	170
5012	201 238	< 0.5	1	< 0.1	9	8	1.49	565	1	9	8	< 0.2	98	170
5013	201 238	< 0.5	2	< 0.1	4	83	0.70	125	57	18	64	< 0.2	132	120

CERTIFICATION: Adriana Alexandru

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

A9125632

Comments: ATTN: A. SOEVER

CERTIFICATE A9125632

GRENVILLE EXPLORATION CONSULTANTS

Project: OPP BUL
P.O. # :

Samples submitted to our lab in Mississauga, ON.
This report was printed on 13-DEC-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
217	4	Geochem ring entire sample
238	4	NITRIC-AQUA REGIA DIGESTION
287	4	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
1005	4	Ag ppm: 9 element,soil and rock	ICP-AES	0.5	200
13	4	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
23	4	Bi ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.1	1000
1929	4	Co ppm: 9 element, soil & rock	ICP-AES	1	10000
1931	4	Cu ppm: 9 element, soil & rock	ICP-AES	1	10000
1932	4	Fe %: 9 element, soil & rock	ICP-AES	0.01	15.00
1937	4	Mn ppm: 9 element, soil & rock	ICP-AES	5	10000
1938	4	Mo ppm: 9 element, soil & rock	ICP-AES	1	10000
1940	4	Ni ppm: 9 element, soil & rock	ICP-AES	1	10000
1004	4	Pb ppm: 9 element,soil and rock	ICP-AES	5	10000
22	4	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
1950	4	Zn ppm: 9 element, soil & rock	ICP-AES	2	10000
20	4	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: GRENVILLE EXPLORATION CONSULTANTS *

7 QUEENSDALE AVE.
TORONTO, ON
M4J 1Y1

Project : OPP BUL
Comments: ATTN: A. SOEVER

Certificate Date: 13-DEC-91
Invoice No. :19125632
P.O. Number :
Account :JKH

CERTIFICATE OF ANALYSIS A9125632

SAMPLE	PREP CODE		Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Zn ppm	Hg ppb
5014	217	238	< 0.5	9	1.0	5	180	1.14	330	4	18	234	3.4	928	440
5015	217	238	< 0.5	1	0.5	2	29	0.57	135	5	13	148	1.0	250	300
5016	217	238	< 0.5	2	0.3	5	114	1.21	640	2	18	64	1.0	296	300
5017	217	238	< 0.5	< 1	0.4	1	114	0.35	35	11	19	78	1.4	334	260

CERTIFICATION: B. Caughlin

Ontario

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

March 23, 1990

Incentives Office
Ministry of Northern Development
and Mines
880 Bay St., 3rd Floor
Toronto, Ontario
M5S 1Z8

Dear Sirs:

I have known Mr. Soever for the last ten years and have reviewed his proposed Grenville exploration program with him. His program is a logical follow-up to the results of government lake sediment, till, and rock geochemical surveys carried out within the last 15 years which have defined areas geochemically anomalous in zinc.

Mr. Soever and Mr. Jackson are well qualified to carry out the proposed program, having been involved in base metals exploration in the Grenville province for over 10 years. They have been involved in both regional and property scale work, carrying out programs which have discovered numerous new zinc occurrences and extended known mineralized zones.

Their program is technically sound and represents an excellent opportunity to build upon the existing government information, discover mineralization, and generate exploration interest in the economically underdeveloped area of eastern Ontario.

Yours truly,

Hans D. Meyn
Regional Specialist
Ministry of Northern Development
and Mines
Box 3000, Hwy 28 S.
Bancroft, Ontario
K0L 1C0

Telephone: 613-332-4875

HDM/kf

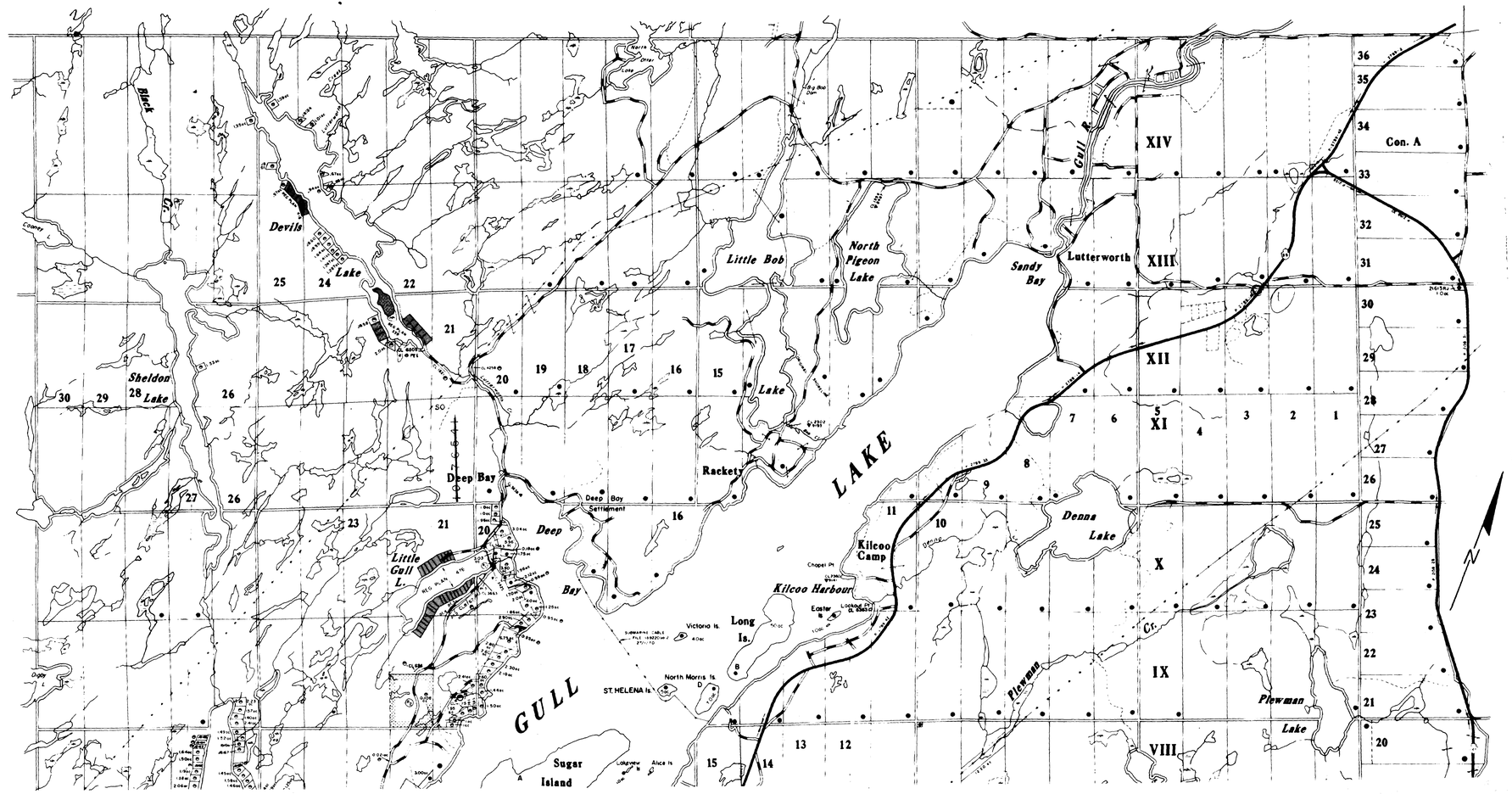
REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M. + S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
CROWN RESERVE				
Sec. 36/60	W 1/85	2/1/85	S.R.O.	88525
Sec. 36/60	W5/85	4/3/85	S.R.O.	

ANSON TOWNSHIP



BY TOWNSHIP

SNOWDI

LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

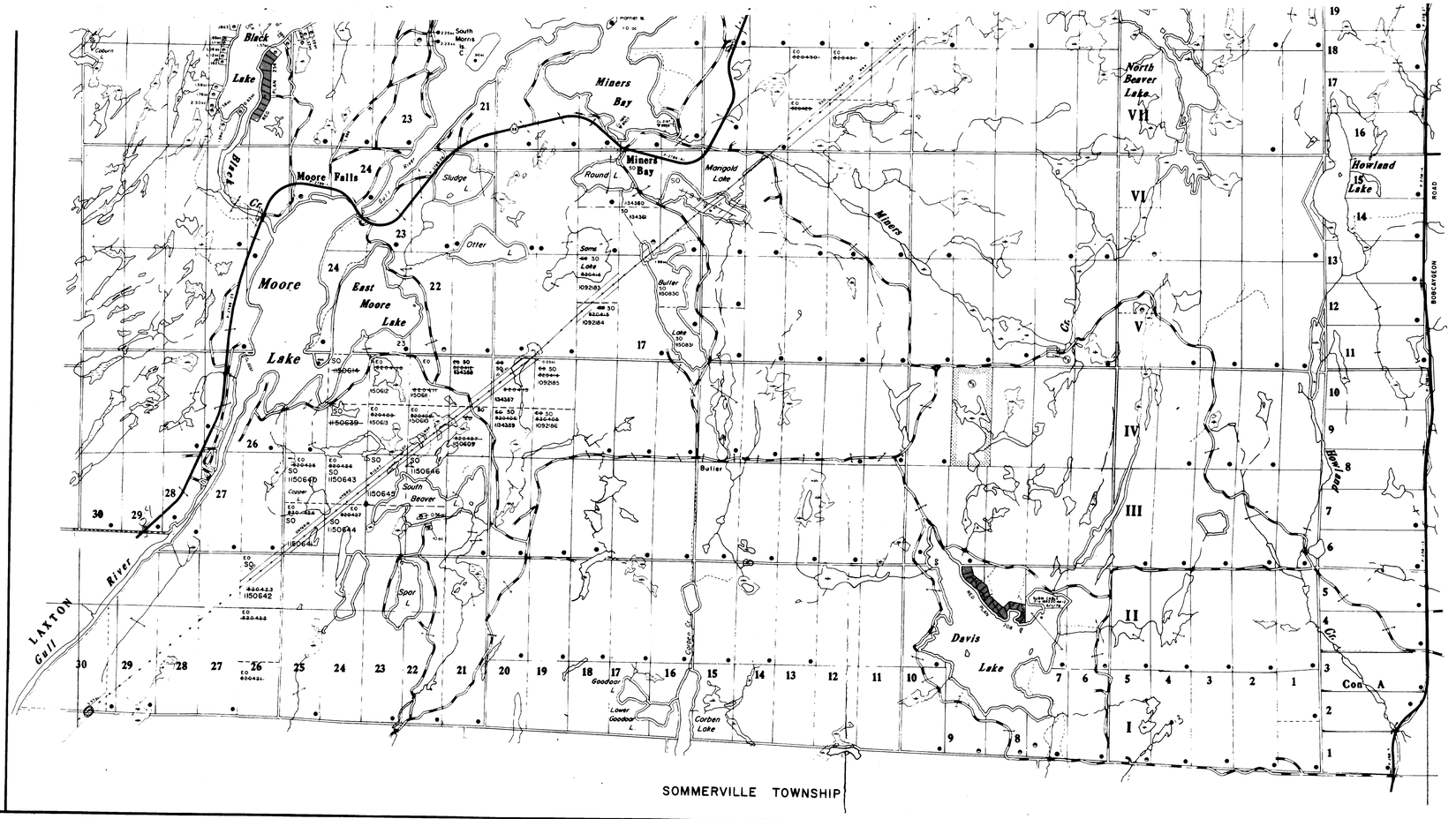
DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	◓
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	▣
" , MINING RIGHTS ONLY	◪
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	⊘
CANCELLED	⊗
SAND & GRAVEL	◔

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

SCALE 1:20 000

500 Metres 0 1000 Metres



DATE OF ISSUE
MAY 19 1998
PROVINCIAL RECORDING OFFICE - SUDBURY

400' SURFACE RIGHTS RESERVATION ALONG THE SHORES OF ALL LAKES AND RIVERS

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

TOWNSHIP

LUTTERWORTH

M.N.R. ADMINISTRATIVE DISTRICT

MINDEN

MINING DIVISION

SOUTHERN ONTARIO

LAND TITLES / REGISTRY DIVISION

HALIBURTON

Ontario

Ministry of Natural Resources

Ministry of Northern Development and Mines

Date FEBRUARY 1967

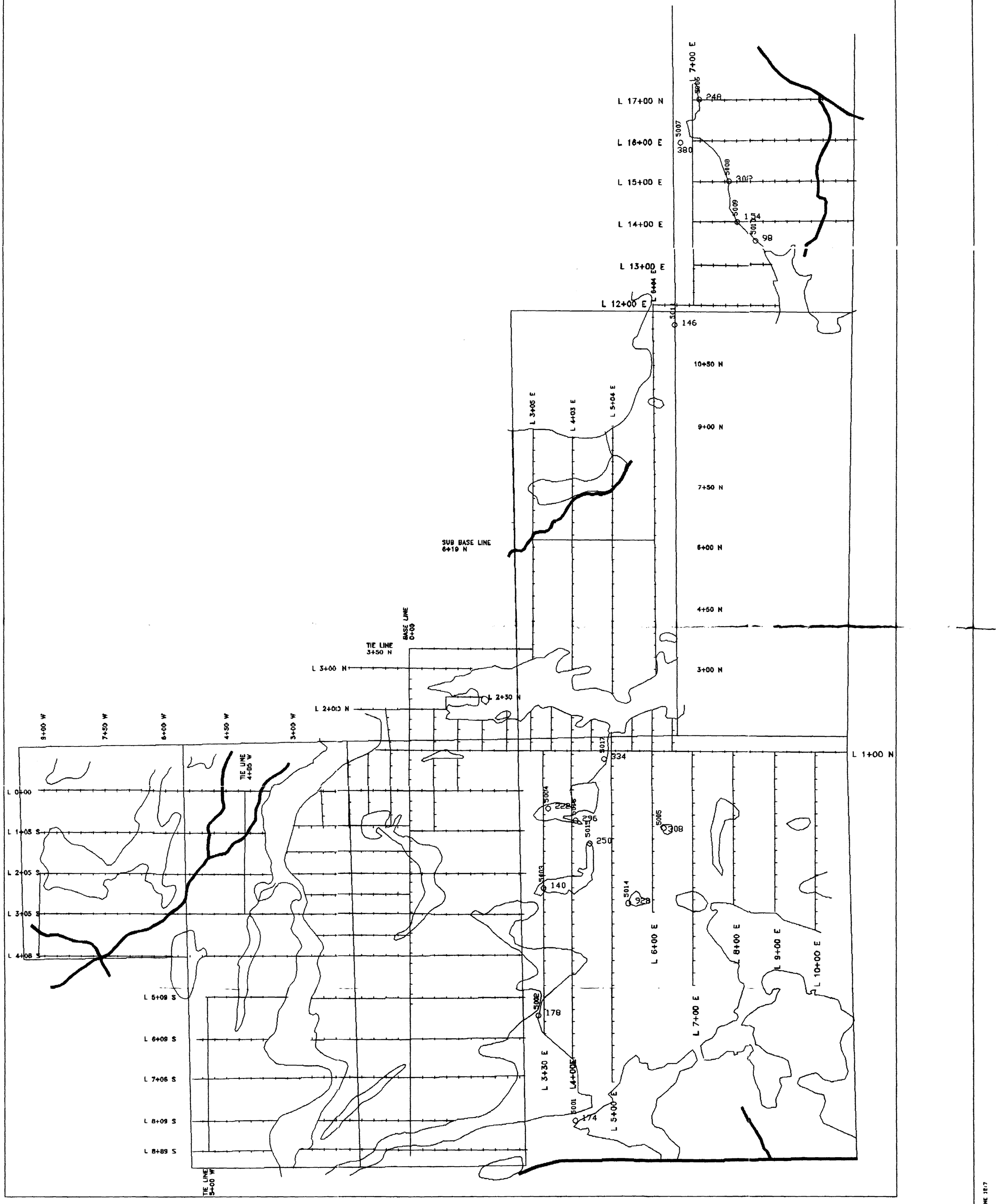
Number G-1296

RES. GEO. TWEED
M.N.R. DIST. MINDEN

Miners Bay
Gull Lake
CON VII
LOT 23
Gull River
LOT21
LOT 20
LOT 19
LOT18
LOT17
LOT16
LOT15
Sludge Lake
Round Lake
SO1134360
Marigold Lake
CON VI
BASELINE 7E
L17N
L16N
SO 1134361
L15N
AREA 3
1:2000
SCALE
MAPPING
& PROSPECTING
(SHEET 5)
L14N
L13N
Otter Lake
LOT23
LOT22
Sams Lake
SO 1092183
L6+00E
L5+00E
L4+00E
L3+00E
AREA 4
1:2000
SCALE
FILL IN
MAPPING
& PROSPECTING
(SHEET 6)
Buller Lake
SO 1150830
East Moore Lake
SO 1092184
SO 1150831
CON V
BASE LINE 0+00E
T.E. LINE 3+50N
L3+00N
L2+00N
AREA 1
1:1000
SCALE
DETAILED
MAPPING
& PROSPECTING
(SHEET 3)
TIE LINE 9+15W
TIE LINE 4+05W
TIE LINE 5+00W
SO 1134358
SO 1134357
SO 1092185
SO 1134359
SO 1092186
L5+79S
L6+11S
L7+06S
L8+00S
AREA 5
1:2000 SCALE
FILL IN
MAPPING
& PROSPECTING
(SHEET 6)
AREA 2
1:2000
SCALE
MAPPING
& PROSPECTING
(SHEET 4)
CON IV
BASPICK
WINKELAAR
South Beaver Lake

0 100 200 300 400 500
metres

GRENVILLE EXPLORATION CONSULTANTS		
BULLER LAKE AREA		
1991 WORK AREA LOCATIONS		
Scale: 1:5000	Dwg No. Sheet 1	Approved: AS
Drafting: AS	Date. Dec 1991	Project: OPP BUL



5001 SAMPLE NUMBER
○ 174
ZINC IN PPM.

100.0 0 100.0 200.0m

DRAWN BY	DATE
REVISED BY	DATE

SCALE 1:5000

DWG Sheet 9

GRENVILLE EXPLORATION CONSULTANTS

BULLER LAKE PROPERTY

1991 DRAINAGE SAMPLING
ZINC IN PPM.

GSII PLOTTED 5.21 DATE 1/28/1992 TIME 18:7

Miners Bay

Gull Lake

Gull River

Sludge Lake

Round Lake

Marigold Lake

Otter Lake

Sams Lake

Buller Lake

East Moore Lake

South Beaver Lake

GASPICK

LOT 23 | LOT 22 | LOT 21 | LOT 20 | LOT 19 | LOT 18 | LOT 17 | LOT 16 | LOT 15

CON VII | CON VI | CON V | CON IV

SO 1134360 | SO 1134361 | SO 1092183 | SO 1092184 | SO 1150830 | SO 1150831 | SO 1133358 | SO 1134357 | SO 1134359 | SO 1092185 | SO 1092186

LEGEND

- 8 GRANITIC ROCKS
- 4 PARAGNEISS
- 3Q QUARTZITE, QUARTZ-DIOPSIDE ROCK
- 3 SILICATED DOLOMITIC MARBLES
- 2ad-3b SERPENTINOUS SILICATED DOLOMITIC MARBLES
- 2 DOLOMITIC MARBLES
- 1 CALCITIC MARBLES
- 30 Foliation, Showing Dip
- Geologic Contact
- Limits of Marble Belt, Fault Contacts
- Road
- Lot Line
- GRID LINE
- Swamp, Flooded Area, Stream, Lake
- Claim Post
- Power Line, Rt of Way

N

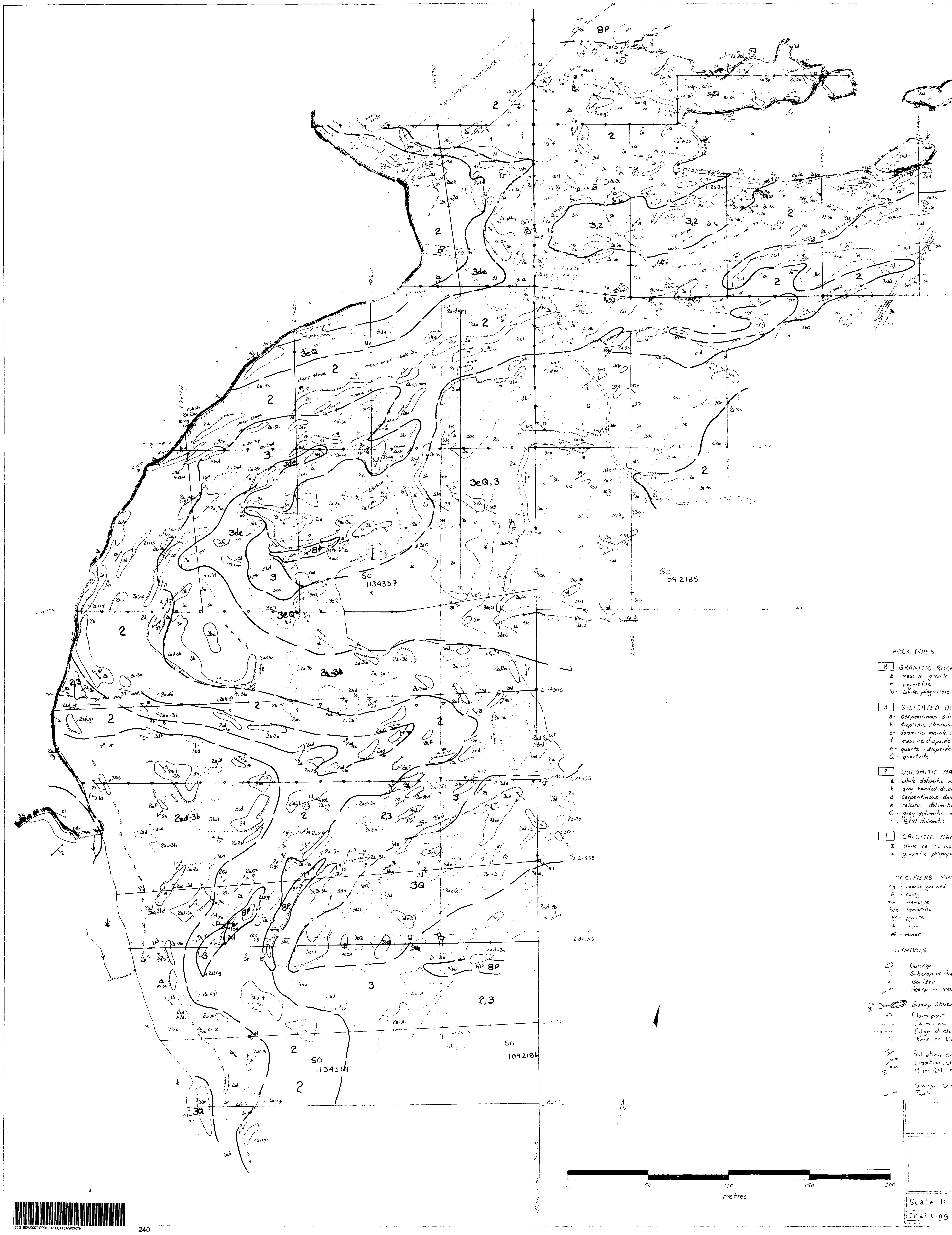
0 100 200 300 400 500 metres

GRENVILLE EXPLORATION CONSULTANTS

BULLER LAKE AREA

GEOLOGICAL COMPILATION MAP

Scale: 1:5000	Dwg No. Sheet 2	Approved: AS
Drafting: AS	Date: Dec 1991	Project: OPP BUL



LEGEND

ROCK TYPES

[8] GRANITIC ROCKS
- a - massive granite
- P - pegmatite
- W - white plagioclase rich pegmatite

[3] SILICATED DOLOMITIC MARBLES (>15% Silicates)
- a - serpentinous silicated dolomitic marble
- b - diopsidic / tremolitic dolomitic marble
- c - dolomitic marble w bands of massive diopside
- d - massive diopside
- e - quartz - diopside rock
- Q - quartzite

[2] DOLOMITIC MARBLES
- a - white dolomitic marble
- b - grey banded dolomitic marble
- d - serpentinous dolomitic marble
- e - calcitic dolomitic marble
- G - grey dolomitic marble
- F - fetid dolomitic marble

[1] CALCITIC MARBLES
- a - white calcitic marbles
- b - graphitic phlogopitic calcitic marble

MODIFIERS FOR ROCK TYPES
- cg - coarse grained
- R - rusty
- trem - tremolite
- hem - hematitic
- py - pyrite
- m - minor

MINERALIZATION
- Zn - Positive Zinc Test
- (Zn) - Sphalerite, best est. < 1% Zn
- [ZN] - Sphalerite, best est. > 1% Zn
- ss - sulphosalts

SYMBOLS
- Outcrop
- Subcrop or Area of Discontinuous outcrop
- Boulder
- Scarp or Steep Slope
- Swamp, Stream, Flooded Area or Lake.
- Claim post
- Claim Line
- Edge of clearing
- Beaver Dam
- Foliation, showing dip
- Lineation, showing plunge
- Minor fold, showing plunge
- Geologic Contact
- Fault

- Rock sample location
- Bank sample location
- 1990 soil sample location

0 50 100 150 200
metres

BULLER LAKE PROPERTY

CENTRAL PART
DETAILED GEOLOGY
AND SAMPLE LOCATION PLAN

Scale 1:1000	Dwg No: Sheet 3	Approved: A.S.
Drafting AS	Date: Dec 1991	Project: OPP BUL

CONCESSION V

CONCESSION IV, LUTTERWORTH TWP

3+00N

1+00S

3+00S

4+50S

6+00S

WINKELAAR

GASPICK

LOT 16

LOT 17

not mapped

LEGEND

ROCK TYPES

8 GRANITIC ROCKS

a - massive granite
b - granitic gneiss
c - pegmatite

4 METASEDIMENTARY ROCKS

a - quartz-feldspar - biotite gneiss
b - biotite schist
c - hornblende biotite gneiss

3 SILICATED DOLOMITIC MARBLES (>15% silicates)

a - serpentinous silicated dolomitic marble
b - diopsidic, tremolitic dolomitic marble
c - dolomitic marble with bands of massive diopside
d - massive diopside
e - quartz - diopside rock
Q - quartzite

2 DOLOMITIC MARBLES

a - white dolomitic marble
b - grey banded dolomitic marble
d - serpentinous dolomitic marble
c - calcitic dolomitic marble
G - grey dolomitic marble

1 CALCITIC MARBLES

a - white calcitic marble
b - graphitic - phlogopitic calcitic marble
~~c - grey banded calcitic marble~~
d - tremolitic rich calcitic marble
e - dolomitic calcitic marble

ABBREVIATIONS

cg - coarse grained
fg - fine grained
oc - outcrop
py - pyrite
R - rusty
SIB - Standard iron bar
tr - trace

MINERALIZATION

SYMBOLS

- Outcrop
- Subcrop or Area of discontinuous outcrop
- Boulder
- Scarp or Steep Slope
- Road, Bush Road, Trail
- Swamp, Stream, Lake or Flooded Area
- Claim Post
- Claim Line
- Edge of clearing
- Beaver Dam
- Foliation, showing dip
- Lineation, showing plunge
- Minor fold, showing plunge
- Geologic Contact
- Fault Zone
- Organic bank sample
- Rock Sample

SCALE
0 50 100 150 200
metres

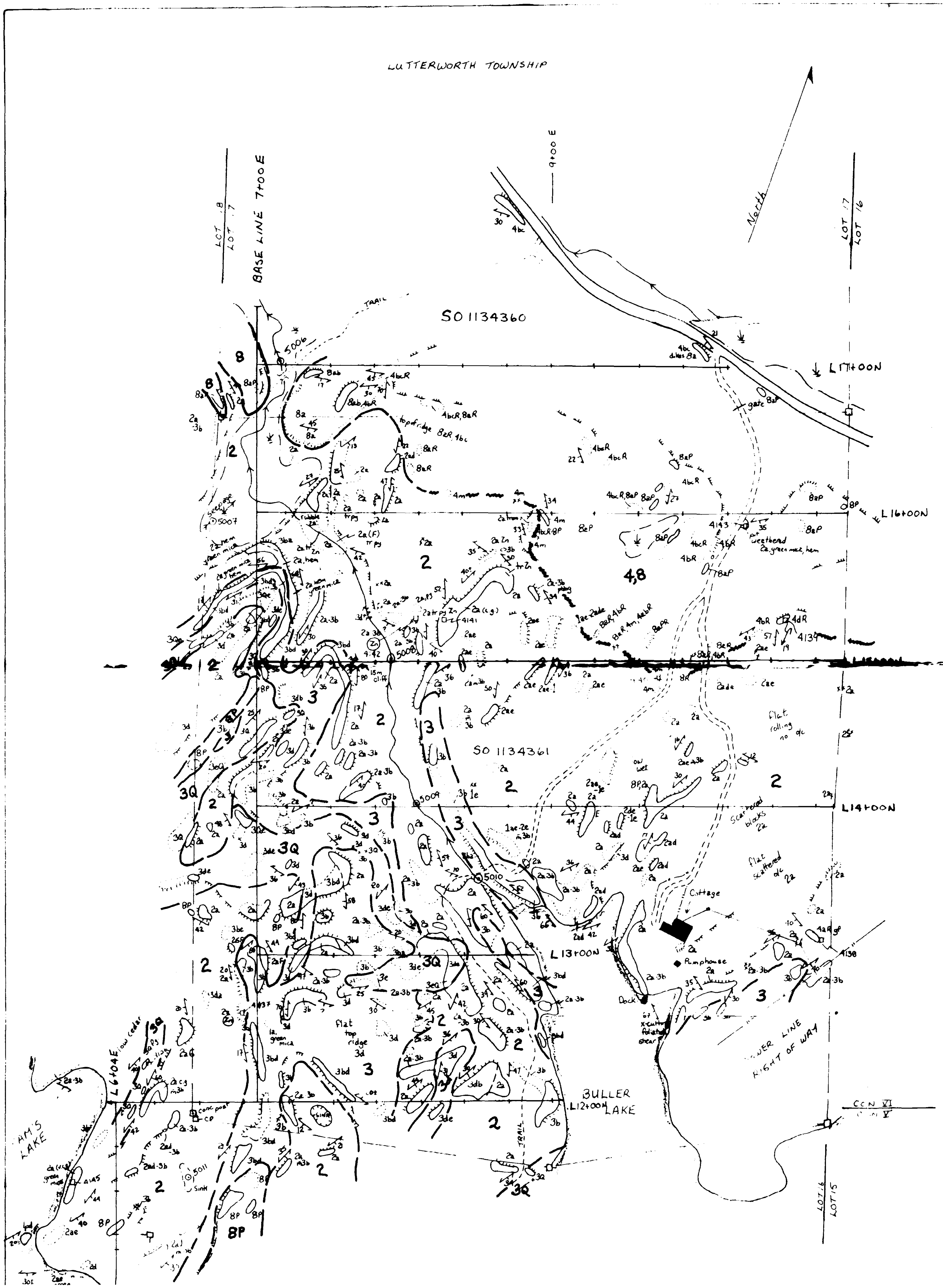
BULLER LAKE PROPERTY

WINKELAAR and GASPICK PROPERTIES

GEOLOGY

AND SAMPLE LOCATION PLAN

Scale 1:2000	Dwg No Sheet 4	Approved RS
Drafting RS	Date Dec 1991	Project OPP BUL



LEGEND

Rock TYPES

8 GRANITIC ROCKS

- a - massive granite
- b - granitic gneiss
- P - pegmatite

4 METASEDIMENTARY ROCKS

- a - quartz - feldspar - biotite gneiss
- b - biotite schist
- c - hornblende - biotite gneiss
- d - calcsilicate rich gneiss calcareous paragneiss
- m - rusty sheared quartz - carbonate schist - mylonite

3 SILICATED DOLOMITIC MARBLES (>15% silicates)

- a - serpentinous silicated dolomitic marble
- b - diopsidic / tremolitic dolomitic marble
- c - dolomitic marble with bands of massive diopside
- d - massive diopside
- e - quartz - diopside rock
- Q - quartzite

2 DOLOMITIC MARBLES

- a - white dolomitic marble
- b - grey banded dolomitic marble
- c - pyritic dolomitic marble
- d - serpentinous dolomitic marble
- c - calcitic dolomitic marble
- G - grey dolomitic marble

1 CALCITIC MARBLES

- a - white calcitic marble
- b - graphitic - phlogopitic calcitic marble
- c - grey banded calcitic marble
- d - calcsilicate rich calcitic marble
- e - dolomitic calcitic marble

MODIFIERS FOR ROCK TYPES

- R - rusty
- tr - trace
- o/c - outcrop
- py - pyrite
- hem - hematitic
- m - minor
- phlog - phlogopite
- F - ferra

MINERALIZATION

- Zn Positive Zinc Test
- (Zn) Sphalerite, best est <1% Zn
- [ZN] Sphalerite, best est. >1% Zn

SYMBOLS

- Outcrop
- Subcrop or Area of discontinuous outcrop
- Boulder or Float
- Scarp or Steep Slope
- Road, Bush Road, Trail
- Swamp, Stream, Lake
- Claim Post
- Claim Line
- Edge of clearing
- Beaver Dam
- Foliation, showing dip
- Lineation, showing plunge
- Minor fold, showing plunge
- Geologic Contact
- Fault Zone
- Organic Sand Sample
- Rock Sample

0 50 100 150 200
metres

BULLER LAKE PROPERTY

MINER'S BAY LODGE CLAIMS
SOUTH PART

GEOLOGY

AND SAMPLE LOCATION PLAN

Scale 1:2000	Dwg No Sheet 5	Approved: A S
Drafting: A S	Date Dec 1991	Project OPP BUL

31D15SW0007 OP91-613 LUTTERWORTH

260

LEGEND

ROCK TYPES

8 GRANITIC ROCKS
- a - massive granite
- b - granitic gneiss
- P - pegmatite

6 MAFIC ROCKS
- a - gabbro
- c - amphibolite

5 METAVOLCANIC ROCKS
- a - mafic metavolcanic rocks

4 METASEDIMENTARY ROCKS
- a - quartz - feldspar - biotite gneiss
- b - biotite schist
- c - hornblend biotite gneiss
- d - calcsilicate gneiss - calcareous paragneiss
- Q - quartzite

3 SILICATED DOLOMITIC MARBLES (>5% silicates)
- a - serpentinous silicated dolomitic marble
- b - diopside / tremolitic dolomitic marble
- c - dolomitic marble with bands of massive diopside
- d - massive diopside
- e - quartz - diopside rock
- Q quartzite

2 DOLOMITIC MARBLES
- a - white dolomitic marble
- b - grey banded dolomitic marble
- c - pyritic dolomitic marble
- d - serpentinous dolomitic marble
- e - calcite dolomitic marble
- G - grey dolomitic marble

1 CALCITIC MARBLES
- a - white calcitic marble
- b - graphitic phlogopitic calcitic marble
- c - grey banded calcitic marble
- d - calcsilicate rich calcitic marble
- e - dolomitic calcitic marble

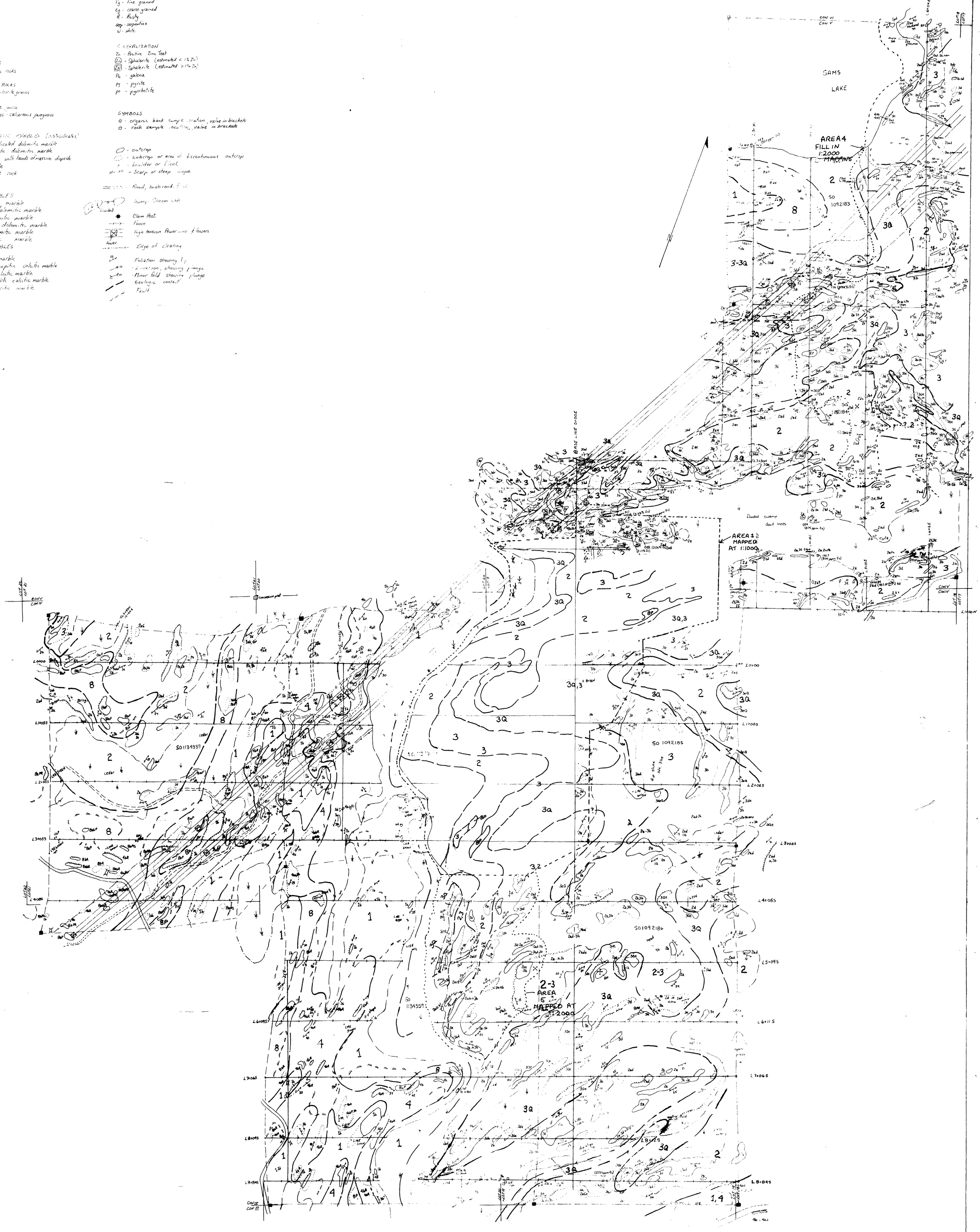
MODIFIERS FOR ALL ROCK TYPES

fg - fine grained
cg - coarse grained
R - Rusty
serp - serpentine
w - white

MINERALIZATION
- Zn - Positive Zinc Test
- (Zn) - Sphalerite (estimated < 1% Zn)
- ZN - Sphalerite (estimated > 1% Zn)
- Pb - galena
- Py - pyrite
- po - pyrrhotite

SYMBOLS
- ⊙ - organic bank sample location, value in brackets
- □ - rock sample location, value in brackets

- ⬭ - outcrop
- ⬚ - subcrops or area of discontinuous outcrop
- x - boulder or float
- ⩙ - Scarp or steep slope
- Road, bushroad, trail
- Swamp, Stream, Lake
- flooded
- Claim Post
- Fence
- High tension Power line & towers
- tower
- Edge of clearing
- Foliation showing dip
- Lineation, showing plunge
- Minor fold showing plunge
- Geologic contact
- Fault



Geology by A. Soever & R.G. Jackson

Oct 14, 1990 - Dec 1, 1990

Fill in mapping by A. Soever
August to November 1991

BULLER LAKE PROPERTY, LUTTERWORTH TOWNSHIP
NTS 31 D/15
GEOLOGY AND SAMPLE LOCATIONS

Scale 1:2000

0 50 100 200 300
metres

Sheet 6

LEGEND

ROCK TYPES

8 GRANITIC ROCKS
- a - massive granite
- b - granitic gneiss
- p - pegmatite

4 PARAGNEISSES
- a - quartz - feldspar - biotite gneiss
- b - biotite - schist or gneiss
- c - hornblende - biotite gneiss
- d - diopsidic or calcareous paragneiss
- R - rusty paragneiss or schist

5 METAVOLCANIC ROCKS

3 SILICATED DOLOMITIC MARBLES (>15% silicates)
- a - serpentinous silicated dolomitic marbles
- b - diopsidic / tremolitic dolomitic marble
- c - dolomitic marble with bands of massive diopside
- d - massive diopside
- e - quartz - diopside rock
- Q - quartzite.

2
- a - white dolomitic marble
- d - serpentinous dolomitic marble
- e - calcitic dolomitic marble
- G - grey dolomitic marble.

1
- a - white calcitic marble
- b - graphitic - phlogopitic calcitic marble
- d - calcsilicate rich calcitic marble
- e - dolomitic calcitic marble
- p - pink calcitic marble

(Zn) - Sphalerite, <1% Zn

□ - Rock Sample Location
⊙ Organic Bank Sample Location.

SYMBOLS

- Outcrop
- Subcrop or Area of discontinuous outcrop
- Boulder
- Road, Bush Road
- Swamp, Flooded Area, Lake
- Claim, Post
- Foliation, showing dip
- Lineation, showing plunge
- Minor fold, showing plunge
- Geologic Contact
- Property Boundary

Gull Lake
Miner's Bay
Gull River
Sludge L.
Round L.
Marigold L.
PROPERTY
Sam's Lake
Otter L.
Buller Lake
LAKE
East Moore Lake
Moore Lake
BUTLER
South Beaver L.
Spar L.
SHADOW LAKE
LOT 17
LOT 20
LOT 22
LOT 23
LOT 26
CON VI
CON V
CON IV
CON III
CON II
CON I
CON A
CON B
CON XIII
CON XIV
35
503
DIGBY TWP
AXTON TWP
LUTTERWORTH TWP
SOMERVILLE TWP
FRANK PORTER
CLARK
CYNDUETH
LST
N

metres
0 500 1000 1500 2000

AREA 1 RECONNAISSANCE
BULLER LAKE AREA (SOUTH)

GEOLOGY
AND SAMPLE LOCATION PLAN

Scale: 1:15840	Dwg No: Figure/Sheet 7	Approved: AS
Drafting: AS	Date: Dec 1991	Project: OPP REG

Bob Lake

Little Bob Lake

North Pigeon Lake

Gull Lake

Anson Twp
Lutterworth Twp

6,4c
10
2cs
5c
nd4c
2ad
5cs
nd4c
2a Zn
4169
blanket 2a over 4c 5c
4L BP
41
2G
4157
1990
Zinc Discovery
20
4158
4156
2a Zn
4c
2a

N

LEGEND

Rock Types

8 GRANITIC ROCKS
- P- Pegmatite

5 METAVOLCANIC ROCKS
- c- quartzo-feldspathic gneiss
- s- sillimanite-garnet schist or gneiss

4 PARAGNEISS
- a- quartz-feldspar-biotite gneiss
- b- biotite schist
- c- hornblende-biotite gneiss

2 DOLOMITIC MARBLE
- a- white dolomitic marble
- d- serpentinous dolomitic marble
- 6- grey dolomitic marble

Zn- Positive Zinc Test
(Zn)- Sphalerite, <1% Zn
[ZN]- Sphalerite, >1% Zn
[Pb] Galena, est >1% Pb.
0- Rock Sample Location

Road

Stream, Lake

metres
0 500 1000 1500 2000

AREA 1 RECONNAISSANCE
BOB'S LAKE AREA

GEOLOGY
AND SAMPLE LOCATION PLAN

Scale 1 15,840	Dwg No Sheet 8	Approved: AS
Drafting: AS	Date: Dec 1991	Project: OPP REG