

LOG NO: 1110	RD.
ACTION: 16 pp.	
FILE NO: 87-715-16529	

SUMMARY REPORT; RECONNAISSANCE
GEOLOGICAL MAPPING AND LITHOGEOCHEMICAL SAMPLING
ON THE "EAST GROUP" OF CLAIMS
(YJ1, YJ2, YJ3, JACK 22, JACK 24)
SURPRISE LAKE PROPERTY
ATLIN MINING DIVISION

NTS: 104N.11W

LATITUDE: 59 deg. 37 min. north 36"

LONGITUDE: 133 deg. 25 min. west 22'24"

OWNER: HOMESTAKE MINERAL DEVELOPMENT COMPANY

OPERATOR: HOMESTAKE MINERAL DEVELOPMENT COMPANY

BY: DUNCAN MCIVOR

DATE: OCTOBER 1987

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,529

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1. SUMMARY AND RECOMMENDATIONS

Approximately 45 line-kilometers of reconnaissance scale (1:10,000) geological mapping was completed on the Surprise Lake Property of Homestake Mineral Development Company in July of 1987.

While outcrop exposure was found to constitute less than 1% of the property, that exposed indicated that the property was underlain, in the east, by granitic rocks of the Cretaceous Surprise Lake Batholith, and in the west, by intermediate to mafic volcanics and immature metasediments of the Cache Creek Group, locally intruded by serpentinized and steatized ultramafic rocks, both Pennsylvanian to Permian in age.

In the course of the mapping program, forty-three (43) rock samples, both from exposed bedrock and from large angular boulders (float), were collected and analyzed for gold (geochemically) and 30 additional elements (by ICP analysis), in an effort to assess the economic potential of the property. No anomalous values of any real significance were encountered, but because of the very poor exposure on the property, the negative results do not preclude the possibility of the ground hosting zones of economic interest. This is particularly true for gold, which elsewhere in the Atlin area occurs in a similar geologic environment, i.e. in hydrothermally altered ultramafic rocks proximal to their thrust fault or intrusive contacts with metavolcanics/sediments of the Cache Creek Group.

In order to more fully assess the potential of the property, an airborne magnetic (total field and vertical gradient) and VLF electromagnetic survey is recommended. These surveys would be useful in delineating areas of hydrothermal alteration and the structural conduits controlling that alteration, as these features often appear as distinct linear magnetic lows and/or strong crossover type VLF anomalies.

Should any such areas of interest be located via the airborne surveys, an exploratory rotary reverse-circulation drilling program is proposed, to initially test the generated targets and provide much needed lithological information.

2. INTRODUCTION

2.1 Location, Access and Physiography

The Surprise Lake Property is located approximately twenty (20) kilometers east-northeast of the village of Atlin, in northern British Columbia. The claims are in the Atlin Mining Division, on NTS map sheet 104N.11.

The property is accessible via an all-weather gravel road extending east from Atlin and crossing the western and northern portions of the claim group. Secondary gravel roads extending from this road and through the Otter Creek Mines Ltd. placer mining operation provide access to the southern and eastern portions of the property.

The property is situated in the Surprise Lake - Pine Creek Valley, above which Ruby Mountain rises 300 m., to the north, and to the south Idaho Peak and Spruce Mountain rise 250 m. above lake level. The ground is predominantly overlain by a thick mantle of fluvial and glaciofluvial sand and gravel, and densely forested by jackpine. Most relief occurs along small creeks draining into Surprise Lake, which deeply incise the glacial and fluvial sediments, to depths of 50 m. in places. It is along these creeks that the majority of outcrop exposure on the property is found, which unfortunately constitutes less than 1% of the property area.

The property is centered around Surprise Lake, which is drained by Pine Creek, flowing west to Atlin Lake.

2.2 Property Definition

The Surprise Lake Property consists of 5 claims, collectively known as the "East Group", and pertinent details are outlined below:

<u>Claim</u>	<u>Recording No.</u>	<u>No. Units</u>	<u>Recording Date</u>
YJ 1	2672	12	28/07/86
YJ 2	2673	12	28/07/86
YJ 3	2674	20	28/07/86
JACK 22	2746	1	25/09/86
JACK 24	2747	1	25/09/86

Figure 2 illustrates the location of these claims. The owner and operator of these claims is Homestake Mineral Development Company, who staked these claims on their own behalf in 1986. All work described in this report was carried out by Homestake Mineral Development Company in July of 1987.

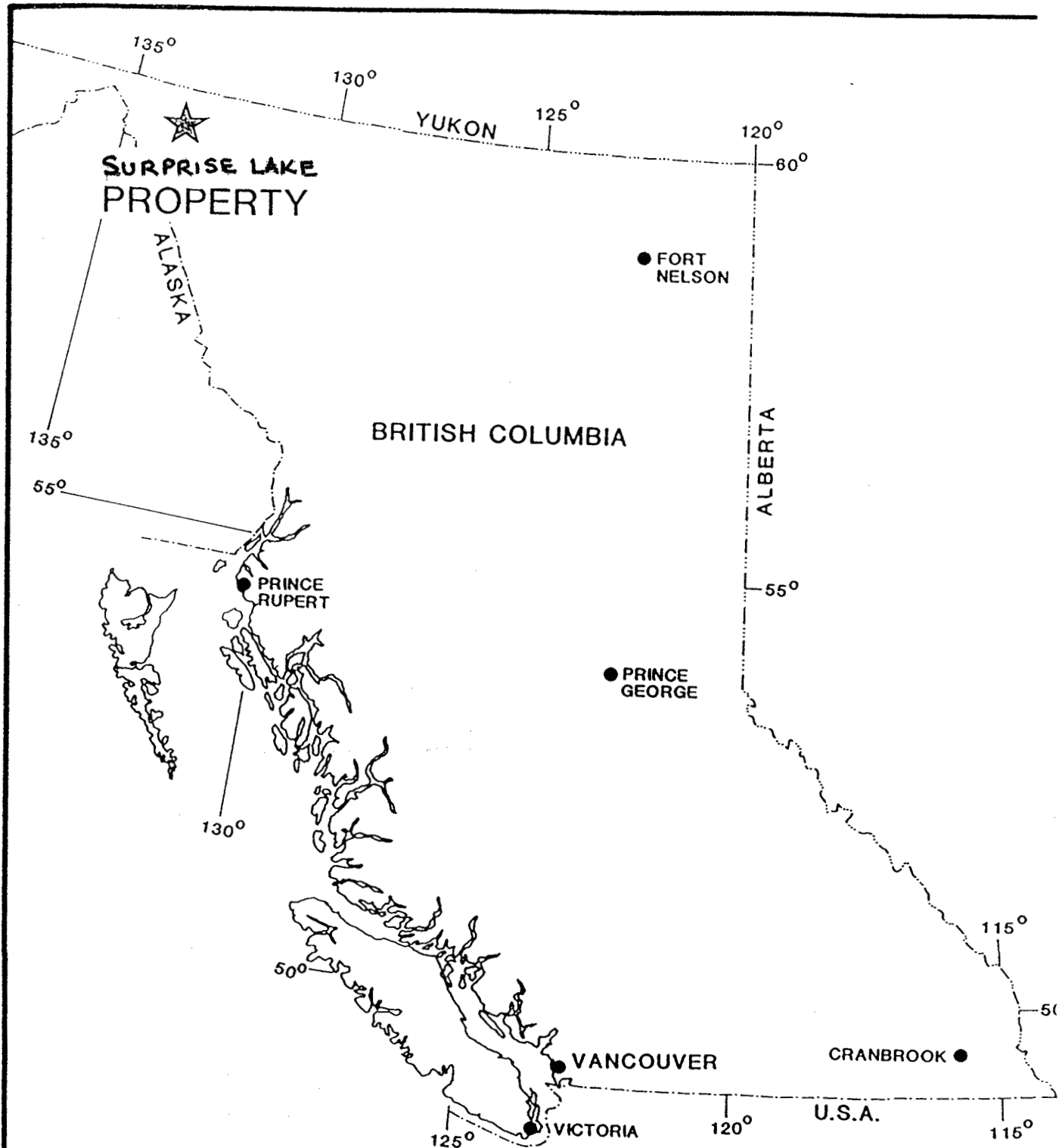
Other than placer mining on Otter Creek, there is no record of mineral exploration on the property.

The economic potential of the property is as of yet unknown, primarily due to limited outcrop exposure and little detailed exploration of the property in the past. The geological setting of the property, however, is similar to other areas in the Atlin camp known to host auriferous quartz-vein systems (see section 2.4).

2.3 Work Completed

During the period July 1-4, and July 16, 1987, ten man days of reconnaissance scale geological mapping, involved some 45 line-kilometers of hip-chain and compass controlled mapping traverses, were completed on the property.

In the course of mapping, forty-three (43) rock samples were collected and subsequently analyzed for a suite of 30 elements, including Au, Ag, Cu, Zn and Pb.



HOMESTAKE		
MINERAL DEVELOPMENT COMPANY			
SURPRISE LK. PROPERTY			
British Columbia			
LOCATION MAP			
DRAWN	DATE	FILE CODE	FIGURE 1
KMc	10/85		

2.4 General Geological Setting and Economic Assessment

The Surprise Lake Property lies near the western edge of the northwest trending Atlin Terrane, which is underlain by upper Paleozoic oceanic crust (Monger 1975). It is correlated with the Cache Creek Group rocks of southern and central British Columbia. Within the Atlin Terrane intermediate to mafic flows are overlain by cherts, immature clastic sediments, and thick shallow-water carbonate rocks. Discordant granitic plutons range in age from late Jurassic to early Tertiary. Remnant Tertiary volcanic and sedimentary rocks are found throughout the area.

Within the Atlin Terrane, large ultramafic bodies define a discordant belt trending across the tectonic fabric of the terrane.

The majority of lode-type gold mineralization within the Atlin Terrane is hosted in hydrothermally altered (silica-carbonate-mariposite) ultramafic rocks proximal to their intrusive or thrust faulted contacts with rocks of the Cache Creek Group, or within Cache Creek Group volcanics along major shear structures. Gold mineralization appears to be exclusively associated with quartz and quartz-carbonate vein systems within the aforementioned altered host rocks, with in most cases a strong correlation between gold and the presence of gangue sulphides including galena, sphalerite, chalcopyrite, pyrite and tetrahedrite.

The Surprise Lake Property, which is underlain by Cretaceous age granitic intrusions, volcanics and sediments of the Cache Creek Group, and ultramafic intrusive rocks, thus lies in an area of good economic potential. Much work remains to be done, however in identifying zones of hydrothermal alteration, and within these zones potentially auriferous quartz vein systems.

Because of limited exposure and thick overburden covering most of the property, this work must rely on advanced geophysical techniques and extensive rotary and core drilling programs.

3. DETAILED TECHNICAL DATA

3.1 Geological Mapping

3.1.1. Methods Employed

Approximately 45 line-kilometers of geological mapping traverses were completed on the property, employing hip chain and compass for control. The traverses, predominantly oriented north-south, were designed to give coverage of the property at approximately 500 meter spacings. In addition, traverses were completed along all routes of relatively easy access, such as roads, trails, creek valleys, and the lake shore. All traverse locations are outlined on the accompanying 1:10,000 scale geologic plan map (Appendix 1).

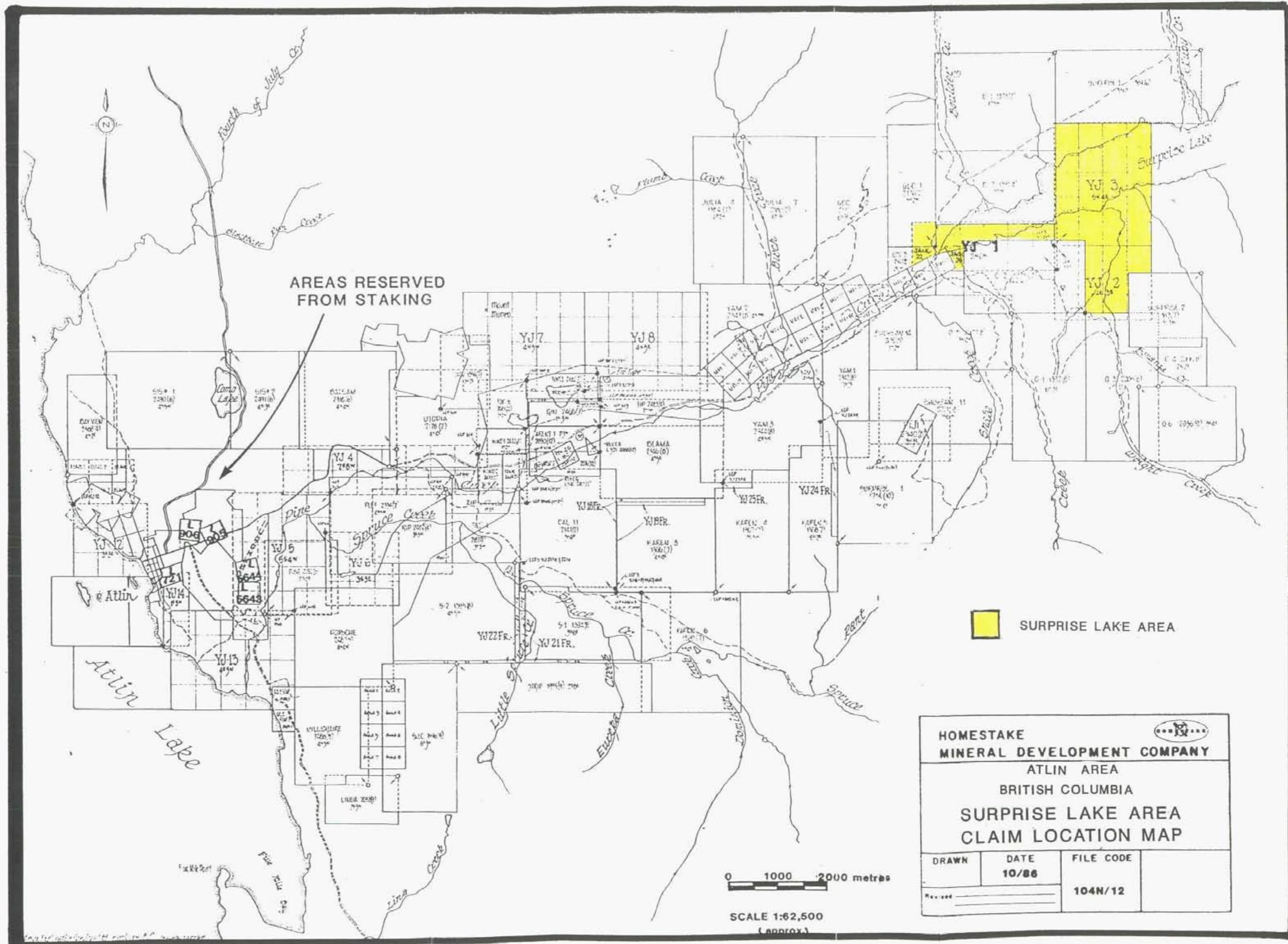
All encountered outcrops were mapped with a view towards establishing their lithology, structural orientation, and the presence of any significant alteration, mineralization and veining. In addition to mapping all encountered outcrops, any large angular boulders were mapped with the same view, as these represent local derivatives of bedrock with probably minimal glacial down-ice dispersion. All geological data appears plotted on the accompanying 1:10,000 scale geology base map (Appendix 1).

3.1.2. Results and Interpretation

Three major lithological types were encountered in bedrock during mapping, and these include;

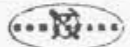
- i) granitic rocks of the Surprise Lake Batholith - several outcrops were observed, predominantly along Bonanza Creek and in the east-central portion of the property. The granite is invariably massive, ranging from fine grained to coarse grained and composed predominantly of quartz, Kspar, and plagioclase. Only very minor amounts of any mafic mineral, namely brown biotite, were observed during mapping. No secondary alteration, mineralization, or veining of any importance was noted in exposed outcrop.
- ii) clastic sediments of the Cache Creek Group - several outcrops were observed in the south-central portion of the property. The sediments were predominantly black argillitic rocks, in places appearing weakly carbonaceous and with minor associated pyrite mineralization. A few outcrops of a gray, slightly coarser (to very fine grained), more siliceous graywacke to quartzite were also observed. Bedding is generally very poorly developed, and where noted, at highly variable orientations, due probably to proximity to the intrusive Surprise Lake Batholith. No secondary alteration, mineralization, or veining of any significance was noted in exposed outcrop.
- iii) ultramafic (intrusive) rocks - a few outcrops were observed in the south-central portion of the property, and in the western portion of the property, in the pit at Otter Creek Mines. The ultramafic rocks are predominantly intensely serpentized, massive fine grained rocks. In places, where weakly sheared, they are talcose. No zones of silica-carbonate-mariposite alteration were noted in outcrop, nor were any zones of significant veining or mineralization.

Obviously, due to the paucity of the outcrop on the property, the contact locations appearing on the enclosed geological map are highly speculative.



AREAS RESERVED FROM STAKING

 SURPRISE LAKE AREA

 HOMESTAKE MINERAL DEVELOPMENT COMPANY			
ATLIN AREA BRITISH COLUMBIA			
SURPRISE LAKE AREA CLAIM LOCATION MAP			
DRAWN	DATE	FILE CODE	
	10/86	104N/12	
Revised			

0 1000 2000 metres
 SCALE 1:62,500
 (Approx.)

As was mentioned, any occurrences of large float were also mapped, and again the prominent lithologies encountered were granite, serpentinized ultramafic, and argillite-gray-wacke-quartzite. A few boulders of gabbro and andesite-basalt were noted in the central and south-central portion of the property. In general, float lithology correlated well with that seen in outcrop, and thus percentage of local float lithology type played a role in determining contact locations on the enclosed geology map.

3.2 Lithochemical Sampling

3.2.1. Methods Employed

In the course of mapping, 43 samples from both bedrock and float were collected and forwarded to Acme Analytical Laboratories in Vancouver for 30 element geochemical ICP analysis. In addition, all samples were analyzed for gold by atomic absorption methods. The purpose of the sampling program was to determine if any base or precious metal anomalies could be detected on the property, either in bedrock or in float, which conceivably could be traced back to a bedrock source. The wide spectrum of elements analyzed for by the ICP method also provides very useful trace-element geochemical data. Gold mineralization in the Atlin Terrane often occurs with associated highly elevated contents of Cu, Zn, Pb, Sb, As, Cd and Ag, all of which are part of the 30 element ICP analytical package. Elevated contents of these elements, even in the absence of anomalous gold values, may serve as "pathfinders" to gold mineralization.

The ICP geochemical data appears tabulated in Appendix 2. All sample locations are plotted on the enclosed geology plan map in Appendix 1, followed in parenthesis by the sample gold content, in ppb, as determined by atomic absorption.

3.2.2. Results and Interpretation

Of the 43 samples collected from the property, only two returned even slightly anomalous gold values. They were:

- PA-01-1-36418 a sample from a large (2 meter) quartzite boulder in the south-central portion of the property, which carried 38 ppb Au.
- PA-01-1-36425 a sample from a large (2 meter) quartzite boulder in the extreme southeast corner of the property, which carried 140 ppb Au, as well as 836 ppm As and 13 ppm Sb.

All other samples contained less than 15 ppb Au, most returning values of only 1-2 ppb Au.

Apart from sample PA-01-136425, no strongly anomalous base metal or pathfinder trace element values were returned. This sample, then, is really the only one warranting further investigation, and even it does not constitute a strong anomaly. Minor additional surface sampling of boulders around this occurrence is recommended.

4. ITEMIZED COST STATEMENT

4.1 Field Costs

Salaries and Wages

D. McIvor	July 1, 2, 3, 4, 16 5 days @ \$115/day	\$ 575.00
J. Bozek	July 1, 2, 3, 4, 16 5 days @ \$85/day	\$ 425.00
P. Southam	July 16 1 day @ \$85/day	\$ <u>85.00</u>
	SUB TOTAL.	\$1,085.00
	+ 20% Overhead and Benefits .	\$ <u>217.00</u>
	TOTAL SALARIES AND WAGES . .	\$1,302.00

Meals and Lodging

-	@ \$50.00 per day per man, X 11 man days.	\$ 550.00
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Vehicle Costs

-	one 4 X 4 Suburban, 5 days fuel and maintenance, @ \$50/day	\$ 250.00
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Analytical Costs

-	43 samples @ \$15.75/sample.	\$ 677.00
	plus shipping costs.	\$ <u>50.00</u>
		\$ <u>727.25</u>

Miscellaneous Equipment Costs

-	(topofil, flagging tape, sample bags, etc)	\$ 200.00
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4.2 DRAFTING AND REPORT PREPARATION COSTSSalaries and Wages

D. McIvor	October 3, 4, 5, 6	
	4 days @ \$115/day	\$ 460.00
	+ 20% overhead and benefits . .	<u>\$ 92.00</u>
	TOTAL SALARIES AND WAGES . . .	\$ 552.00

Miscellaneous Costs

-	reproduction costs, drafting material, etc.	\$ 50.00
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Total Costs

Total Field Costs	\$3,029.25
Total Drafting & Report Costs. .	<u>602.00</u>
TOTAL COSTS	<u><u>\$3,631.25</u></u>

4.4 ALLOCATION OF EXPENDITURES

Prior to submission of work covered by this report, the following work has been filed against claims covered by this report.

<u>Group</u>	<u>Claim</u>	<u>Units</u>	<u>Rec. No.</u>	<u>Total Geophys.</u>	<u>Total Geol.</u>	<u>Total Work</u>
East	Jack 22	1	2746	.00	28.29	28.29
East	Jack 24	1	2747	.00	28.29	28.29
East	YJ 1	12	2672	.00	339.48	339.48
East	YJ 2	12	2673	.00	339.48	339.48
East	YJ 3	20	2674	.00	565.80	565.80
Group Total	5	46		.00	1,301.34	1,301.34

Allocation of expenditures covered by this report are as follows, and are based on the area of each claim.

<u>Group</u>	<u>Claim</u>	<u>Units</u>	<u>Rec. No.</u>	<u>Total Geophys.</u>	<u>Total Geol.</u>	<u>Total Work</u>
East	Jack 22	1	2746	.00	78.94	78.94
East	Jack 24	1	2747	.00	78.94	78.94
East	YJ 1	12	2672	.00	947.28	947.28
East	YJ 2	12	2673	.00	947.28	947.28
East	YJ 3	20	2674	.00	1,578.81	1,578.81
Group Total	5	46		.00	3,631.25	3,631.25

Work filed to date on these claims, including that work covered in this report, is as follows:

<u>Group</u>	<u>Claim</u>	<u>Units</u>	<u>Rec. No.</u>	<u>Rec. Date</u>	<u>Total Geophys.</u>	<u>Total Geol.</u>	<u>Total Work</u>
East	Jack 22	1	2746	25/09/86	.00	107.23	107.23
East	Jack 24	1	2747	25/09/86	.00	107.23	107.23
East	YJ 1	12	2672	25/09/86	.00	1,286.76	1,286.76
East	YJ 2	12	2673	25/09/86	.00	1,286.76	1,286.76
East	YJ 3	20	2674	25/09/86	.00	2,144.61	2,144.61
Group Total		5	46		.00	4,932.57	4,932.57

5. AUTHOR'S QUALIFICATIONS

I, Duncan Forbes McIvor, do hereby state that;

- I am a graduate of the University of Waterloo, and hold an Honours Bachelor of Applied Science degree.
- I have been practising my profession as an exploration geologist on a full time basis since 1982.
- I have personal knowledge that all information presented in this report is true and accurate.

Duncan McIvor
October 6, 1987
Atlin, B. C.

6. SELECTED BIBLIOGRAPHY

- Aitken, J. D.
1959: Atlin Map Area, B. C. - Geological Survey of Canada, Memoir 307
- Monger, J. W. H.
1975: Upper Paleozoic Rocks of the Atlin Terrane, Northwestern B. C. and South-Central Yukon; Geological Survey of Canada Paper 74-47.

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG.C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
 THIS LEACH IS PARTIAL FOR MN FE CA P LA CR MG BA TI B W AND LIMITED FOR NA AND K. AU DETECTION LIMIT BY ICP IS 3 PPM.
 - SAMPLE TYPE: ROCK AU# ANALYSIS BY AA FROM 10 GRAM SAMPLE.

DATE RECEIVED: JUL 29 1987

DATE REPORT MAILED: *Aug 5/87*

ASSAYER: *D. Toye* DEAN TOYE, CERTIFIED B.C. ASSAYER

HOMESTAKE MINERALS PROJECT-BR-5710 File # 87-2828 Page 1

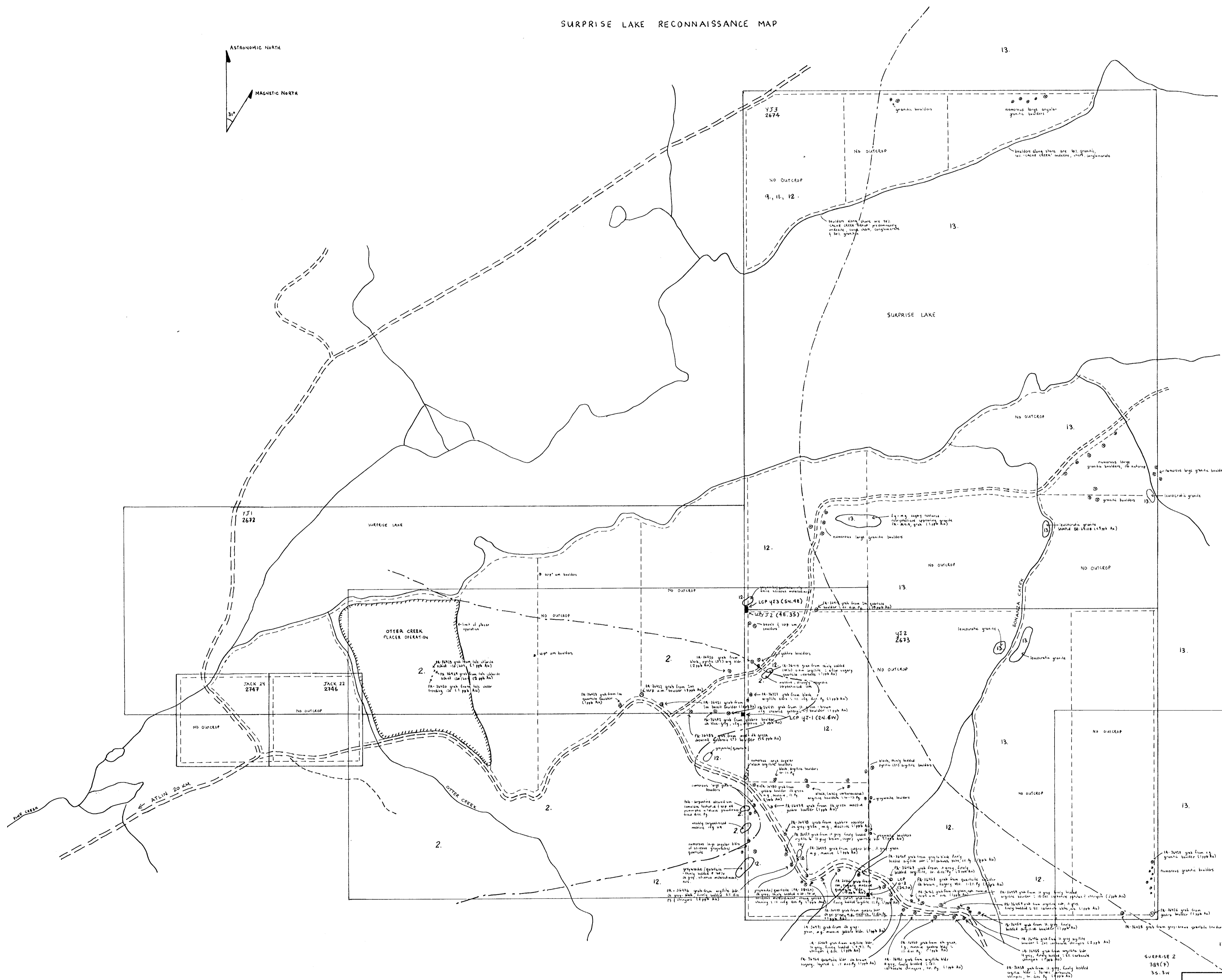
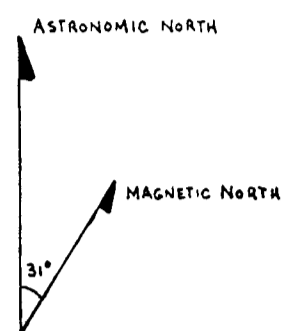
SAMPLE#	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	TH	SR	CD	SB	BI	V	CA	P	LA	CR	MG	BA	TI	B	AL	NA	K	W	AU#
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPB
BR-02-1-36332	2	1	2	34	.1	1726	67	630	4.53	53	12	ND	1	2	1	2	2	12	.22	.008	2	421	23.70	7	.01	43	.10	.01	.01	1	2
BR-02-1-36333	1	76	8	79	.5	23	27	1099	8.24	45	9	ND	1	69	1	2	2	52	3.20	.089	2	10	2.19	37	.01	2	.60	.01	.19	1	15
BR-02-1-36334	1	2	2	6	.1	325	12	269	1.20	15	7	ND	1	84	1	3	2	3	1.77	.002	2	58	5.03	3	.01	2	.02	.01	.02	1	5
BR-02-1-36402	2	2	2	15	.2	959	39	573	3.61	347	5	ND	1	13	1	2	4	8	.41	.004	2	221	16.26	6	.01	2	.06	.01	.04	1	1
BR-02-1-36403	1	2	2	11	.1	829	35	492	3.27	92	5	ND	1	6	1	2	3	10	.19	.004	2	187	16.55	9	.01	2	.03	.01	.03	1	1
SURPRISE LK. PA-01-1-36326	1	29	2	43	.1	26	6	276	1.68	6	5	ND	3	3	1	2	2	37	.07	.015	7	25	.80	332	.07	2	1.00	.03	.42	1	1
SURPRISE LK. PA-01-1-36327	1	64	3	168	.5	26	10	709	3.78	2	6	ND	1	255	1	3	2	94	1.96	.072	2	57	2.02	92	.24	2	4.46	.22	1.51	2	1
PA-01-1-36414	1	18	2	26	.1	9	2	383	2.24	2	5	ND	5	5	1	2	2	43	.02	.012	12	38	.98	388	.16	2	1.42	.03	.88	1	2
PA-01-1-36415	1	33	2	9	.1	5	1	89	1.66	3	5	ND	2	4	1	2	2	12	.04	.019	3	10	.22	33	.01	2	.33	.02	.08	1	1
PA-01-1-36416	2	40	2	18	.1	11	4	161	1.44	2	5	ND	1	2	1	2	2	17	.07	.024	3	10	.46	41	.01	2	.53	.02	.09	1	1
PA-01-1-36417	20	33	3	11	.1	9	1	187	.83	2	6	ND	2	1	1	2	3	45	.07	.028	4	11	.12	9	.05	2	.20	.02	.04	1	1
PA-01-1-36418	1	48	5	23	.1	15	4	341	.90	4	5	ND	1	14	1	2	2	10	.12	.006	2	8	.27	117	.02	2	.55	.01	.14	1	38
PA-01-1-36419	1	4	9	23	.1	2	1	168	.91	5	5	ND	38	1	1	2	3	2	.02	.006	7	2	.05	14	.01	2	.32	.04	.09	1	1
PA-01-1-36420	5	118	2	107	.2	66	11	263	2.71	2	5	ND	4	4	1	2	2	94	.05	.014	7	55	.72	74	.10	2	1.38	.04	.51	1	2
PA-01-1-36421	1	36	2	36	.2	1262	54	404	3.93	11	5	ND	1	4	1	2	4	41	.08	.027	2	712	10.86	4	.02	5	1.05	.01	.01	1	1
SURPRISE LAKE PA-01-1-36422	1	20	5	47	.1	1693	70	618	5.41	23	5	ND	1	5	1	2	3	19	.10	.005	2	600	16.85	28	.01	14	.40	.01	.01	1	3
PA-01-1-36423	1	66	4	25	.2	40	4	146	1.42	5	7	ND	2	12	1	2	2	33	.09	.010	3	29	1.44	316	.06	50	.59	.05	.15	1	1
PA-01-1-36424	3	19	3	64	.1	22	2	245	1.92	4	5	ND	4	7	1	2	2	38	.05	.025	9	36	1.26	553	.11	2	1.29	.04	.76	1	1
PA-01-1-36425	1	2	2	38	.1	1665	54	347	3.20	836	5	ND	1	1	1	13	3	3	.02	.004	2	88	15.24	12	.01	8	.06	.01	.01	1	140
PA-01-1-36426	1	29	3	39	.1	21	8	211	2.34	2	7	ND	1	49	1	2	2	78	.69	.078	4	60	.85	331	.24	2	1.54	.16	.78	1	1
PA-01-1-36427	1	2	8	41	.1	20	1	314	1.21	6	5	ND	45	1	1	2	2	4	.07	.009	13	4	.22	18	.05	2	.38	.04	.26	1	1
PA-01-1-36428	2	2	2	105	.2	436	36	671	6.30	5	5	ND	2	53	1	4	4	100	2.98	.193	7	671	9.04	51	.03	2	5.10	.01	.04	3	1
PA-01-1-36429	1	90	3	16	.1	1137	43	291	1.95	37	5	ND	1	20	1	2	2	8	1.78	.004	2	433	3.73	24	.01	14	.24	.01	.01	1	2
PA-01-1-36430	1	47	5	37	.3	1078	51	576	3.79	46	5	ND	1	22	1	3	2	36	2.04	.015	2	818	5.44	27	.01	18	.72	.01	.01	2	1
PA-01-1-36451	3	41	2	31	.1	39	13	174	2.67	4	5	ND	3	19	1	2	2	87	.49	.030	4	64	1.13	347	.16	2	1.51	.15	.61	1	1
PA-01-1-36452	2	6	23	50	.1	7	1	24	.10	9	9	ND	1	126	1	2	2	3	.17	.012	2	4	22.00	23	.01	36	.06	.01	.01	1	1
PA-01-1-36453	4	5	2	8	.2	2	1	22	.51	27	5	ND	1	6	1	3	2	4	.02	.013	2	3	.01	30	.01	2	.06	.01	.03	1	12
PA-01-1-36454	1	1	2	11	.3	3	1	31	.15	3	11	ND	1	438	1	3	5	2	37.08	.012	2	4	.49	30	.01	36	.02	.01	.01	4	1
PA-01-1-36455	1	1	3	4	.1	1	1	33	.14	2	5	ND	1	734	1	3	6	1	40.14	.003	2	2	.22	35	.01	2	.01	.01	.01	5	1
PA-01-1-36456	1	2	2	15	.1	1	1	54	.14	3	5	ND	1	246	1	5	3	1	36.66	.020	3	4	1.99	44	.01	2	.01	.01	.01	5	2
SURPRISE LAKE PA-01-1-36457	1	1	5	6	.1	1	1	33	.17	3	5	ND	1	588	1	3	7	1	40.19	.004	5	1	.37	27	.01	2	.03	.02	.02	3	1
PA-01-1-36458	1	2	2	16	.1	2	1	61	.16	4	5	ND	1	223	1	7	4	2	34.85	.019	2	3	3.66	30	.01	2	.02	.01	.01	3	1
PA-01-1-36459	1	2	2	13	.1	1	1	50	.14	3	5	ND	1	273	1	5	3	1	38.12	.034	3	2	1.25	23	.01	2	.02	.01	.01	4	2
PA-01-1-36460	1	62	3	34	.1	34	15	333	2.85	2	5	ND	1	18	1	2	2	60	1.93	.036	2	20	1.06	65	.32	2	1.26	.01	.15	1	1
PA-01-1-36461	1	1	2	23	.2	2	1	69	.17	3	5	ND	1	567	1	8	6	2	31.88	.029	3	3	5.54	45	.01	2	.01	.01	.01	4	1
PA-01-1-36462	1	33	2	30	.1	1549	59	558	4.29	4	5	ND	1	7	1	2	2	23	.41	.003	2	901	17.40	3	.01	32	.48	.01	.01	1	1
STD C/AU-R	20	58	42	132	7.7	70	29	958	4.12	40	17	8	39	51	19	15	20	60	.51	.089	39	61	.90	183	.08	34	1.79	.06	.14	12	500

SAMPLE#	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	TH	SR	CD	SB	BI	V	CA	P	LA	CR	MG	BA	TI	B	AL	NA	K	W	AU*	
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPB	
PA-01-1-36463	1	28	7	45	.1	36	5	157	1.69	3	5	ND	4	4	1	2	2	9	.05	.010	9	13	.44	265	.06	2	.62	.02	.33	2	1	
PA-01-1-36464	1	29	2	53	.4	33	6	198	2.13	2	5	ND	6	5	1	2	2	21	.05	.012	14	19	.62	581	.11	2	1.08	.04	.59	1	1	
PA-01-1-36465	7	54	7	83	.3	20	5	376	2.37	7	5	ND	9	11	1	2	2	33	.07	.021	16	23	1.09	341	.10	2	1.32	.05	.83	1	1	
PA-01-1-36466	2	19	2	23	.1	5	1	230	1.23	2	5	ND	3	5	1	2	2	10	.02	.016	6	10	.42	546	.04	2	.60	.02	.29	1	10	
PA-01-1-36467	1	35	11	65	.2	8	3	304	2.35	4	5	ND	6	14	1	2	2	35	.11	.023	12	22	1.15	635	.10	2	1.46	.06	.79	1	2	
SURPRISE LAKE . PA-01-1-36468	43	40	10	53	.4	9	2	176	1.18	4	6	ND	8	15	1	2	2	57	.17	.065	13	19	.54	296	.05	2	.74	.04	.44	1	1	
PA-01-1-36469	1	5	4	15	.1	3	1	237	.37	2	5	ND	1	173	1	2	2	4	10.90	.017	2	3	.68	33	.02	2	.33	.24	.07	1	1	
PA-01-1-36470	1	32	5	37	.2	21	9	166	2.46	2	5	ND	1	33	1	2	2	73	.64	.068	6	73	.96	647	.19	2	1.19	.13	.51	2	1	
PA-01-1-36471	1	38	3	33	.2	19	9	236	2.61	6	5	ND	1	38	1	2	2	87	1.06	.064	4	77	.88	83	.26	2	1.12	.09	.32	1	1	
PA-01-1-36475	1	41	2	16	.1	15	6	121	1.13	6	5	ND	1	62	1	2	3	43	1.03	.069	4	44	.32	33	.18	2	.85	.16	.11	1	1	
PA-01-1-36476	88	64	11	196	.5	88	8	551	3.74	8	5	ND	8	42	2	2	2	264	.86	.077	5	70	2.16	138	.25	2	3.54	.16	1.93	1	2	
PA-01-1-36477	1	38	2	49	.4	31	6	223	1.87	2	5	ND	5	12	1	2	2	27	.22	.011	10	26	.78	293	.08	2	1.08	.03	.51	1	1	
PA-01-1-36478	1	38	2	34	.1	14	7	228	2.18	3	5	ND	1	25	1	2	2	60	.57	.087	7	45	.69	764	.21	2	.96	.12	.50	1	1	
PA-01-1-36479	1	14	2	21	.1	8	4	92	1.33	2	5	ND	9	5	1	2	2	28	.43	.065	19	4	.79	186	.11	2	.64	.12	.29	1	1	
PA-01-1-36480	2	49	6	31	.3	5	13	220	3.12	5	5	ND	2	28	1	2	2	82	.81	.148	8	2	.78	308	.26	2	1.17	.15	.66	1	1	
PA-01-1-36481	1	7	4	74	.1	184	23	224	4.52	5	5	ND	2	6	1	2	2	111	.44	.122	10	271	2.90	730	.44	2	2.36	.11	2.03	1	1	
PA-01-1-36482	1	17	2	32	.3	26	6	287	2.02	4	5	ND	8	56	1	2	2	37	2.06	.234	31	44	1.03	206	.23	2	1.41	.13	.42	1	2	
PA-01-1-36483	1	11	2	23	.1	942	27	153	1.40	155	5	ND	1	4	1	2	2	19	.23	.003	2	644	2.75	31	.01	4	.78	.01	.01	1	15	
PL-01-1-36328	1	21	2	34	.1	56	11	405	1.64	10	5	ND	2	95	1	2	2	15	4.57	.038	6	11	2.54	67	.01	4	.46	.01	.06	2	1	
PL-01-1-36329	2	3	2	53	.2	87	20	603	3.78	15	5	ND	2	185	1	12	2	28	5.40	.038	6	105	3.65	39	.01	4	.34	.03	.18	1	1	
PL-01-1-36330	1	71	2	18	.1	20	10	159	1.78	4	5	ND	1	51	1	2	2	42	2.03	.035	2	18	.47	26	.18	2	2.40	.41	.10	1	1	
PL-01-1-36331	1	65	2	23	.1	21	10	213	2.09	2	5	ND	1	23	1	2	2	67	1.44	.035	2	30	.74	18	.26	2	1.37	.19	.15	1	1	
PL-01-1-36335	1	4	2	3	.2	4	1	56	.35	2	5	ND	1	12	1	2	2	4	4.69	.013	3	2	.11	10	.06	2	.17	.08	.02	1	1	
PL-01-1-36336	1	96	7	25	.5	1287	65	401	2.94	112	5	ND	1	291	1	2	3	11	11.80	.003	2	114	8.70	9	.01	2	.19	.22	.01	1	1	
PL-01-1-36337	1	111	4	36	.1	22	19	360	4.40	7	5	ND	1	22	1	2	2	150	1.92	.005	2	4	1.54	7	.09	2	2.81	.44	.03	1	2	
PL-01-1-36338	1	197	2	14	.1	22	10	182	3.25	3	5	ND	1	17	1	2	2	174	1.59	.016	2	8	.73	2	.07	2	1.98	.23	.02	1	1	
PL-01-1-36339	1	21	14	58	.4	41	10	484	3.25	2	5	ND	7	33	1	2	2	67	1.15	.078	19	81	1.91	169	.29	3	1.14	.07	.11	1	1	
PL-01-1-36340	3	175	228	106	11.0	18	4	195	1.10	20	5	ND	1	55	2	2	2	16	8	1.67	.004	2	13	.56	13	.01	2	.17	.01	.03	1	57
PL-01-1-36341	1	2	4	39	.3	481	27	826	4.30	5	5	ND	1	49	1	2	5	95	3.72	.007	2	870	6.96	6	.01	2	3.00	.01	.01	2	1	
PL-01-1-36342	1	36	2	12	.1	54	15	119	2.37	2	5	ND	1	4	1	2	2	53	.18	.024	2	29	.94	5	.05	2	.71	.09	.01	1	2	
PL-01-1-36404	1	4	2	27	.1	7	3	275	2.08	2	5	ND	15	30	1	2	2	38	.43	.069	24	14	.37	50	.10	2	.37	.05	.06	1	1	
PL-01-1-36405	1	11	6	31	.2	8	5	343	2.34	6	5	ND	15	40	1	2	2	44	.90	.068	40	13	.51	82	.03	2	.52	.03	.08	1	1	
PL-01-1-36406	1	9	7	50	.4	7	8	589	3.24	6	5	ND	6	101	1	2	2	57	2.33	.067	19	17	1.28	397	.06	2	.93	.01	.25	1	12	
PL-01-1-36407	1	5	8	37	.2	8	6	467	2.49	6	5	ND	17	211	1	2	2	36	1.98	.074	38	9	.59	1673	.01	2	.68	.01	.09	1	1	
PL-01-1-36408	1	19	6	52	.3	17	17	488	4.05	7	5	ND	15	171	1	2	2	91	3.38	.288	43	55	1.73	366	.18	2	1.28	.03	.10	1	1	
PL-01-1-36409	1	3	2	28	.1	7	3	223	1.08	2	5	ND	2	109	1	2	2	11	1.70	.035	10	4	.41	697	.01	2	.52	.02	.12	1	1	
STD C/AU-R	19	60	41	131	7.4	70	28	945	4.13	42	22	8	38	50	19	18	22	58	.51	.090	38	59	.93	178	.08	36	1.79	.06	.13	12	495	

HOMESTAKE MINERALS PROJECT-BR-5710 FILE # 87-2828

SAMPLE#	MO PPM	CU PPM	PB PPM	ZN PPM	AG PPM	NI PPM	CO PPM	MN PPM	FE %	AS PPM	U PPM	AU PPM	TH PPM	SR PPM	CD PPM	SB PPM	BI PPM	V PPM	CA %	P %	LA PPM	CR PPM	MG %	BA PPM	TI %	B PPM	AL %	NA %	K %	W PPM	AUR PPB
PL-01-1-36410	1	4	2	33	.1	10	5	375	2.44	3	5	ND	17	29	1	2	2	41	.30	.061	44	12	.64	96	.01	2	.63	.07	.09	1	1
PL-01-1-36411	1	8	13	68	.3	8	8	638	3.20	4	5	ND	6	124	1	2	2	58	2.31	.072	20	14	1.15	550	.06	2	1.27	.01	.28	1	1
PL-01-1-36412	1	48	12	47	.3	103	17	447	2.93	2	5	ND	16	324	1	4	2	62	2.65	.300	58	261	3.02	1010	.26	2	1.90	.24	.18	1	1
PL-01-1-36413	1	29	8	26	.2	41	8	273	2.20	6	6	ND	14	106	1	2	2	49	1.11	.127	31	65	1.28	285	.17	3	.96	.07	.29	1	1
PL-01-1-36450	1	65	5	42	.2	60	18	281	3.03	3	5	ND	1	53	1	3	2	75	1.46	.041	2	92	1.02	241	.39	2	1.46	.15	.56	1	1

SURPRISE LAKE RECONNAISSANCE MAP



- LEGEND**
- LITHOLOGIES**
- 1 BASALT
 - 2 SERPENTINITE (ALTERED ULTRAMAFIC INTERFLUX)
 - 3 COMPLETELY ALTERED ULTRAMAFIC (SERPENTINITE, UNK. PROT. ALTERED ULTRAMAFIC)
 - 4 MAFIC INTERFLUX
 - 5 FELDSPAR, TROCTOLITE
 - 6 SIERITE
 - 7 DIORITE
 - 8 GREENSTONE
 - 9 ANDESITE
 - 10 DIORITE
 - 11 DIORITE
 - 12 GRANITIC GNEISS
 - 13 GRANITE
 - 14 GRANITE
- SYMBOLS**
- GEOLOGICAL CONTACT (OBSERVED/INFERRED)
 - ISOTHERMITY
 - BEDDING
 - QUARTZ VEINING
 - REGULATION
 - FAULT
 - SOULDER
 - ROAD
 - TRAVERSE
- NOTES**
- NS - ALL POSTS LOCATED BY WIP-CAM & COMPASS TECHNIQUE.
 - PA - 12345 SAMPLE LOCATION, WITH A1A ASSAY IN P75 (1984)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,529

HOMESTAKE 
MINERAL DEVELOPMENT COMPANY
ATLIN AREA
BRITISH COLUMBIA
SURPRISE LAKE
RECONNAISSANCE
MAP

DRAWN	DATE	FILE CODE
	10/87	
REVISED		