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GEOCHEMICAL REPORT
on the
MSJ MINERAL CLAIMS

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FILE NO:

OMINECA MINING DIVISION
BRITISH COLUMBIA

NTS 93L/6

54°25' North Latitude
127°24' West Longitude

FILMED

A.J. SCHMIDT, P. Eng.
306 - 673 Market Hill
Vancouver, B.C.
November 1, 1989

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,493

TABLE OF CONTENTS

Page

1. INTRODUCTION
2. LOCATION AND ACCESS
3. PROPERTY AND OWNERSHIP
4. PREVIOUS WORK
5. WORK PROGRAM
6. GEOLOGY
7. GEOCHEMICAL SURVEY
8. RESULTS AND DISCUSSION

1.
1.
1.
3.
5.
5.
6.
10.

APPENDICES

APPENDIX

1. GEOCHEMICAL SAMPLE RESULTS
2. ANALYTICAL PROCEDURES
3. COST STATEMENT - PLACER DOME INC.
4. CERTIFICATE

ILLUSTRATIONS

FIGURE

1. LOCATION MAP (1:250,000)
2. CLAIM MAP (1:50,000)
3. SAMPLE LOCATION (1:25,000)
4. BULK SEDIMENT GOLD RESULTS (1:25,000)
5. COMPILATION MAP (1:25,000)

2.
4.
7.
8.
9.

GEOCHEMICAL REPORT - MSJ CLAIMS

1. INTRODUCTION

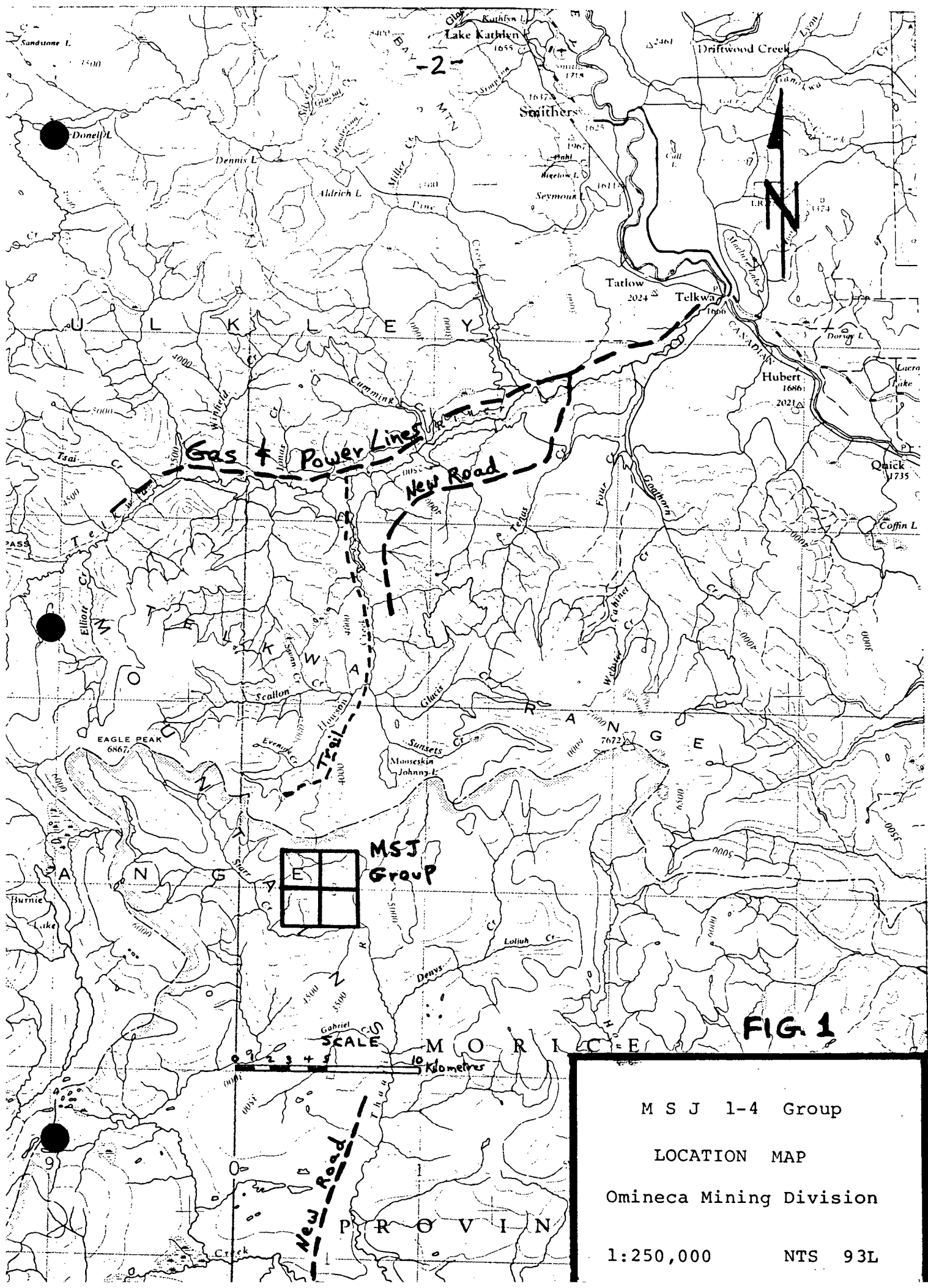
This report will present the results of a geochemical investigation by Placer Dome Inc. of a porphyry copper prospect located in west-central British Columbia. Field work was done in July and August 13, 15th, 1989 by professional geologists; the analytical results were produced by Placer Domes's laboratories in Vancouver.

2. LOCATION AND ACCESS

The MSJ 1-4 mineral claims are located in west-central British Columbia, about 44 kilometres south-southwest of Smithers. The claims cover much of an unnamed mountain within the Telkwa Range, about 6 kilometres southwest of Mooseskin Johnny Lake. More precisely, the centre of the claims are about 54° 25' North Latitude and 127° 24' West Longitude, with N.T.S. map 93L6. At present, the property is only accessible by helicopter, or by float-plane to Mooseskin Johnny Lake. A logging road up the Thautil river is within 9 kilometres of the southern boundary, while a bulldozer trail to Howson Creek is within about 4 kilometres of the northern boundary. (see Fig. 1).

3. PROPERTY AND OWNERSHIP

The property consists of four contiguous unpatented mineral claims (MSJ 1-4) each containing 16 units, for a total of 64 units and covering 1600 hectares. The outline of the property and the boundaries of the claims are shown on fig 2.



M S J 1-4 Group
 LOCATION MAP
 Omineca Mining Division
 1:250,000 NTS 93L

A list of the claims, all located in the Omineca Mining Division is given below:

<u>Claim Name</u>	<u>Units</u>	<u>Record No.</u>	<u>Record Date</u>
MSJ 1	16	10,083	Feb.16,1989
MSJ2	16	10,084	Feb.16,1989
MSJ3	16	10,085	Feb.16,1989
MSJ4	16	10,086	Feb.16,1989

The claims are presently owned as to 50% each by the following:

- a) A.J. Schmidt, P. Eng.
306 -- 673 Market Hill,
Vancouver, B.C.

- b) J.H. McAusland, P. Eng.
929 Jarvis Street,
Coquitlam, B.C.

4. PREVIOUS WORK

The porphyry copper mineralization exposed in Trail Creek was first (?) discovered by the writer in 1973, although a very old prospectors pick and shovel were observed at the time leaning against the principal outcrop along the lower portion of Trail Creek. High grade copper and silver veins and replacement deposits were explored along Howson Creek, just a few kilometres to the north during 1905- 1920 and 1965- 1970. A government financed wagon road was built from Telkwa to Howson Creek in 1916, at which time those prospects underwent considerable underground exploration and limited production.

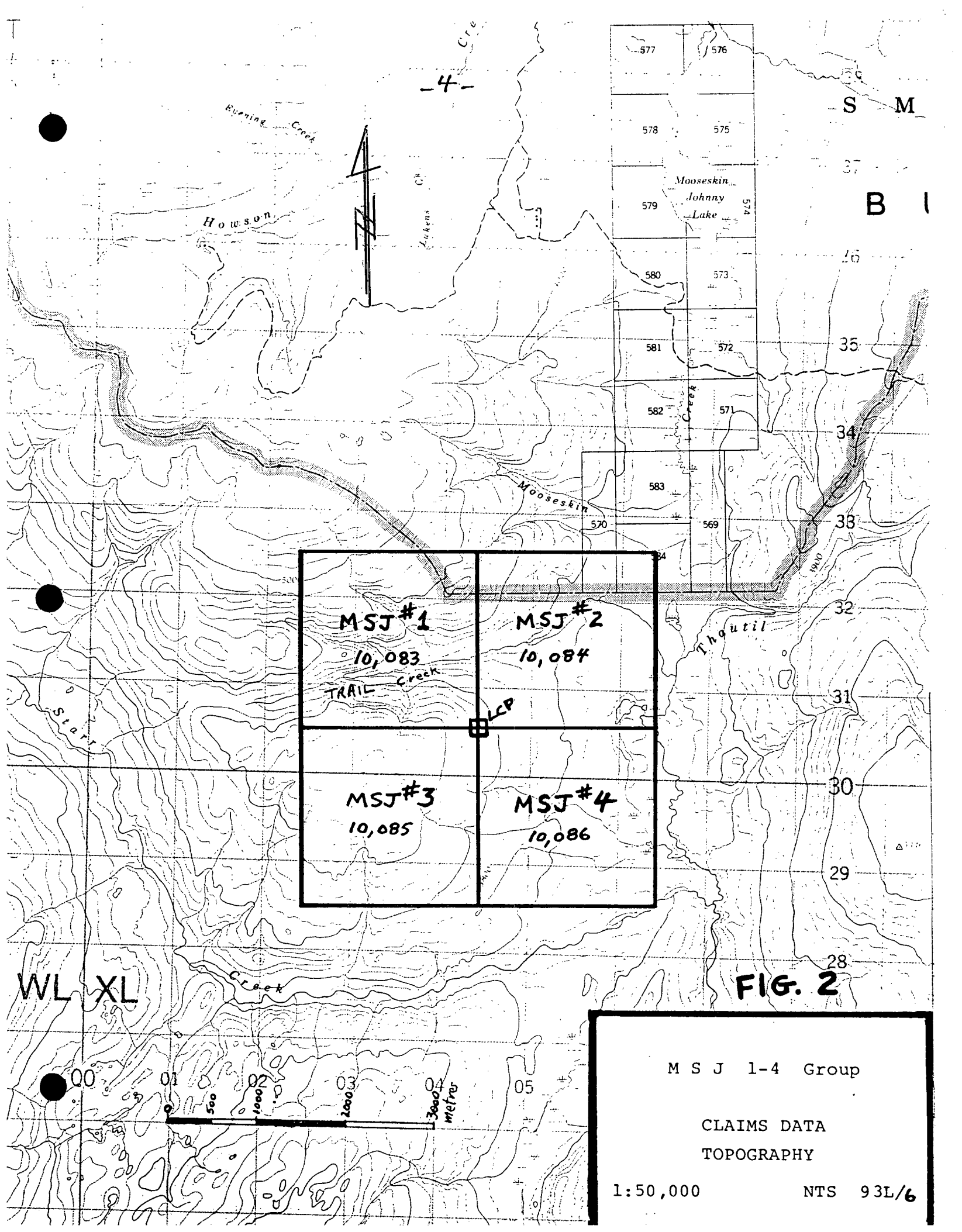


FIG. 2

M S J 1-4 Group

CLAIMS DATA
TOPOGRAPHY

1:50,000

NTS 93L/6

GEOCHEMICAL REPORT

The MSJ property was staked by Hudsons Bay Oil and Gas personnel in 1973 and they completed a reconnaissance-scale induced polarization survey on the claims in 1974 (see Ass. Rpt. 5208). The claims were allowed to lapse the following year and no work is known to have been completed on the claims until the writer re-staked them in February, 1989.

5. WORK PROGRAM

Geologists employed by Placer Dome Inc. visited the MSJ property on July 6, 1989 and collected 10 rock samples, 2 silt samples, and 2 bulk stream sediment samples.

Encouraged by the anomalous gold values obtained in the bulk samples, they returned to the property on August 13th and 15th. At that time, they collected an additional 8 rock samples, 12 silt samples, and 12 bulk stream sediment samples. (see Appendix 1 for results).

These bulk samples were collected (by shovel and 20 mesh screen) every 500 metres along the main (Trail) creek, totally cross-cutting the target IP anomaly. (see Fig 3 for sample locations). All samples were analyzed in Placer Dome's laboratories in Vancouver. (see Appendix 2 for methods).

6. GEOLOGY

The MSJ 1-4 mineral claims cover a probable Cretaceous age quartz monzonite porphyry intrusive which is poorly exposed along about one kilometre of Trail Creek. The porphyry intrudes Jurassic age (Hazelton Group) andesitic flow and tuffs which are generally flat lying in the area.

GEOCHEMICAL REPORT

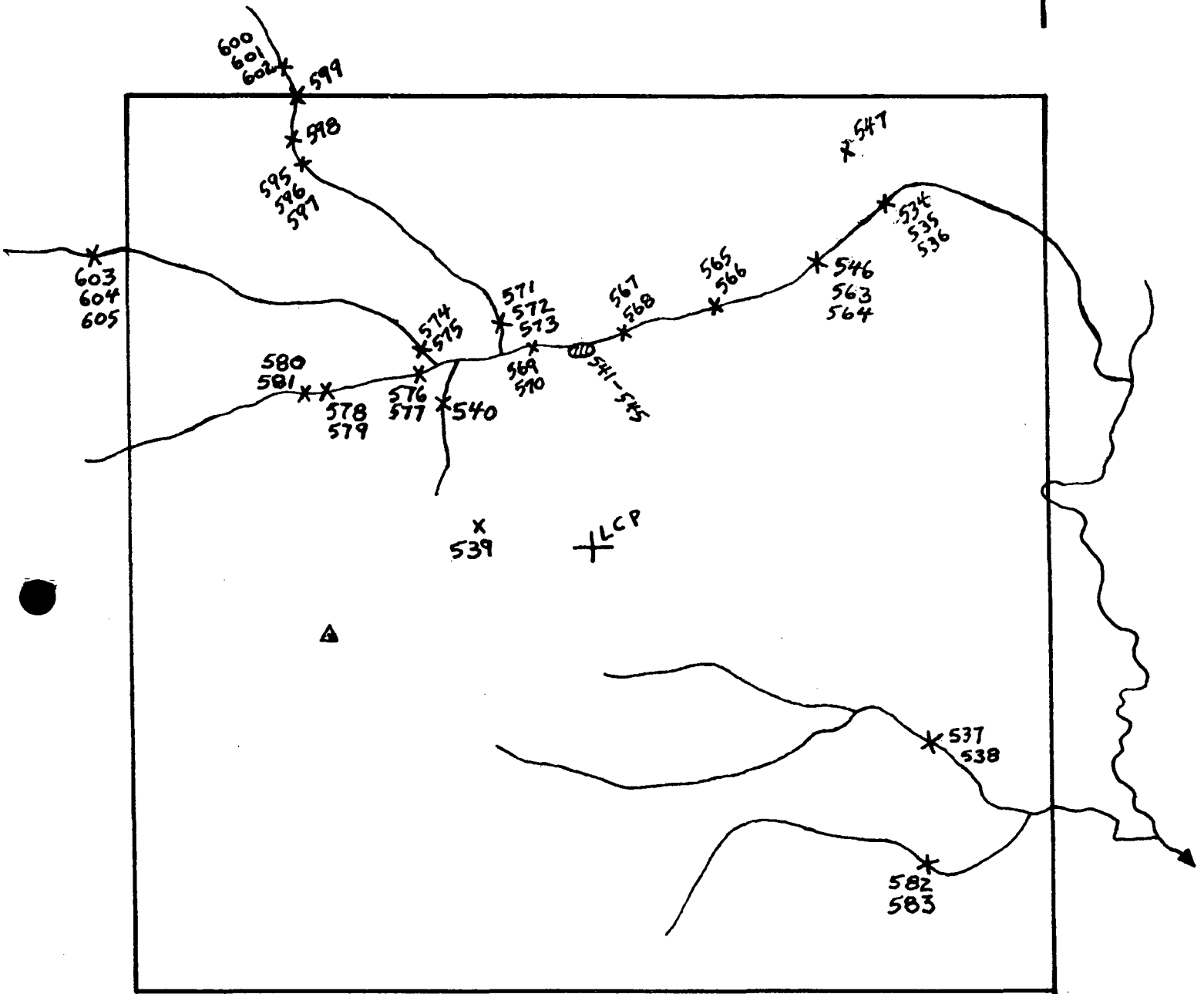
The volcanic rocks seen west of the porphyry are generally weakly propylitically altered (chlorite, epidote) with minor pyrite disseminations (1-2%).

A large outcrop of strongly argillic altered quartz feldspar porphyry occurs at Placer's rock sample site numbers 541-545. Pyrite content ranges up to 10% as both disseminated and fracture - plane mineralization. About 900 metres further east (at Placer's rock sample 546) along the creek are several outcrops of strongly phyllic altered (quartz, sericite and pyrite) quartz monzonite porphyry, containing 3-5% pyrite, plus minor chalcopyrite, malachite, tenorite, sooty chalcocite and molybdenite.

No detailed geological mapping has yet been completed on the property but the B.C. Department of Mines completed several geological traverses over the property in 1989 during a regional mapping program and that data is expected to be published in January, 1990 (D. MacInyre)

7. GEOCHEMICAL SURVEY

On July 6, 1989, geologists from Placer Dome Inc. examined the MSJ property and collected 2 standard silt samples, 2 bulk stream sediment samples, and 10 rock samples, mainly from outcrop along Trail Creek. Those samples were analyzed for Cu, Mo, Au, Ag, Pb, Zn, As by geochemical methods; from each of the bulk samples, 3 separate sub-samples were assayed. The best outcrop sample along Trail Creek, returned values of 360ppm Cu, 50 ppm Mo and 40 ppb Au. Just down stream, their bulk sediment sample # 534 assayed 350 ppb Au and 1.4 ppm Ag.

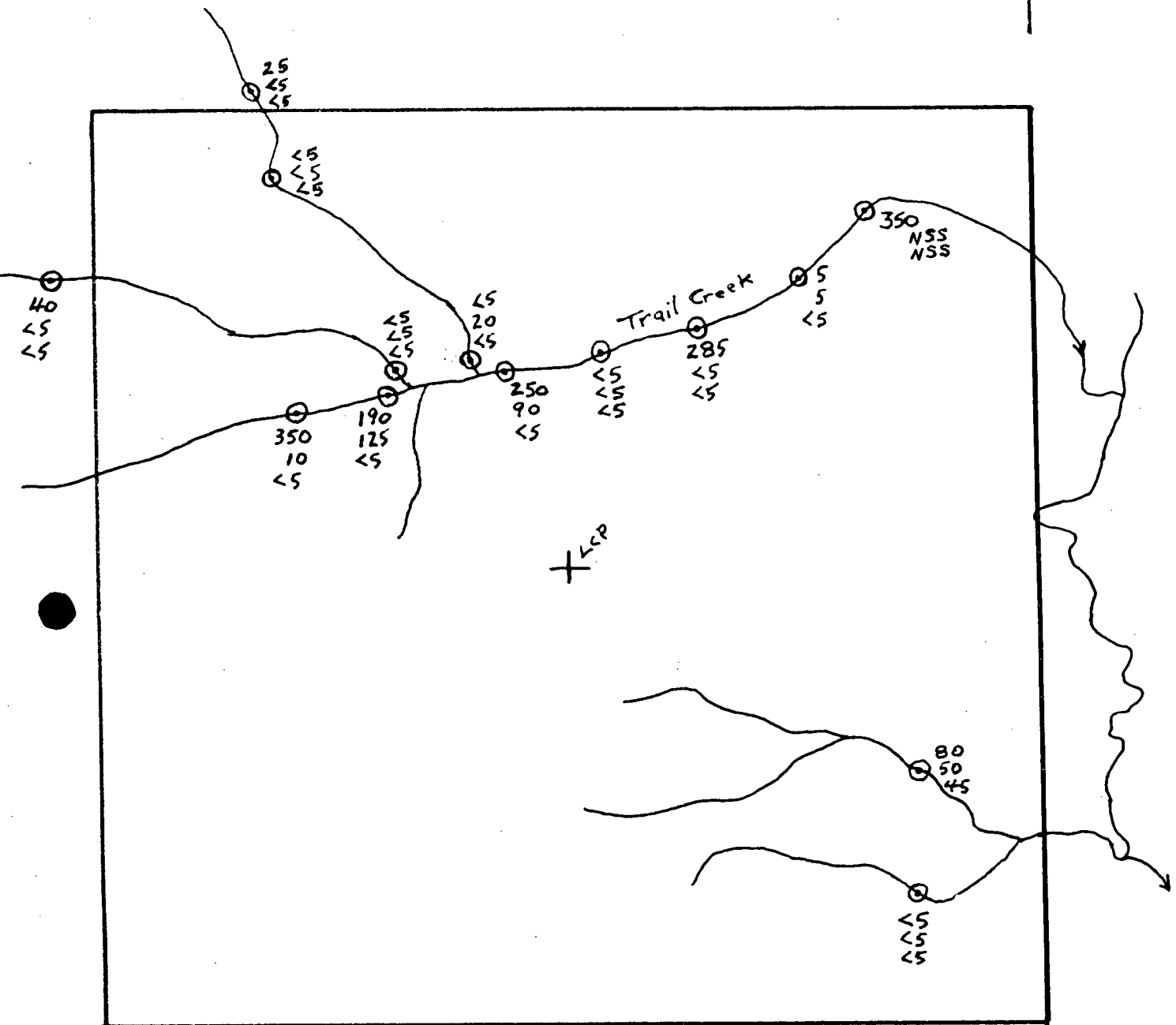


MSJ Claims Boundary ↗

FIG. 3

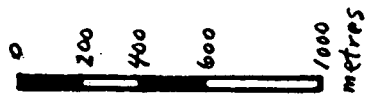


MSJ 1-4 Group
Sample Locations
1989 - Placer Dome
1:25,000 93L/6



MSJ Claims Boundary ⚡

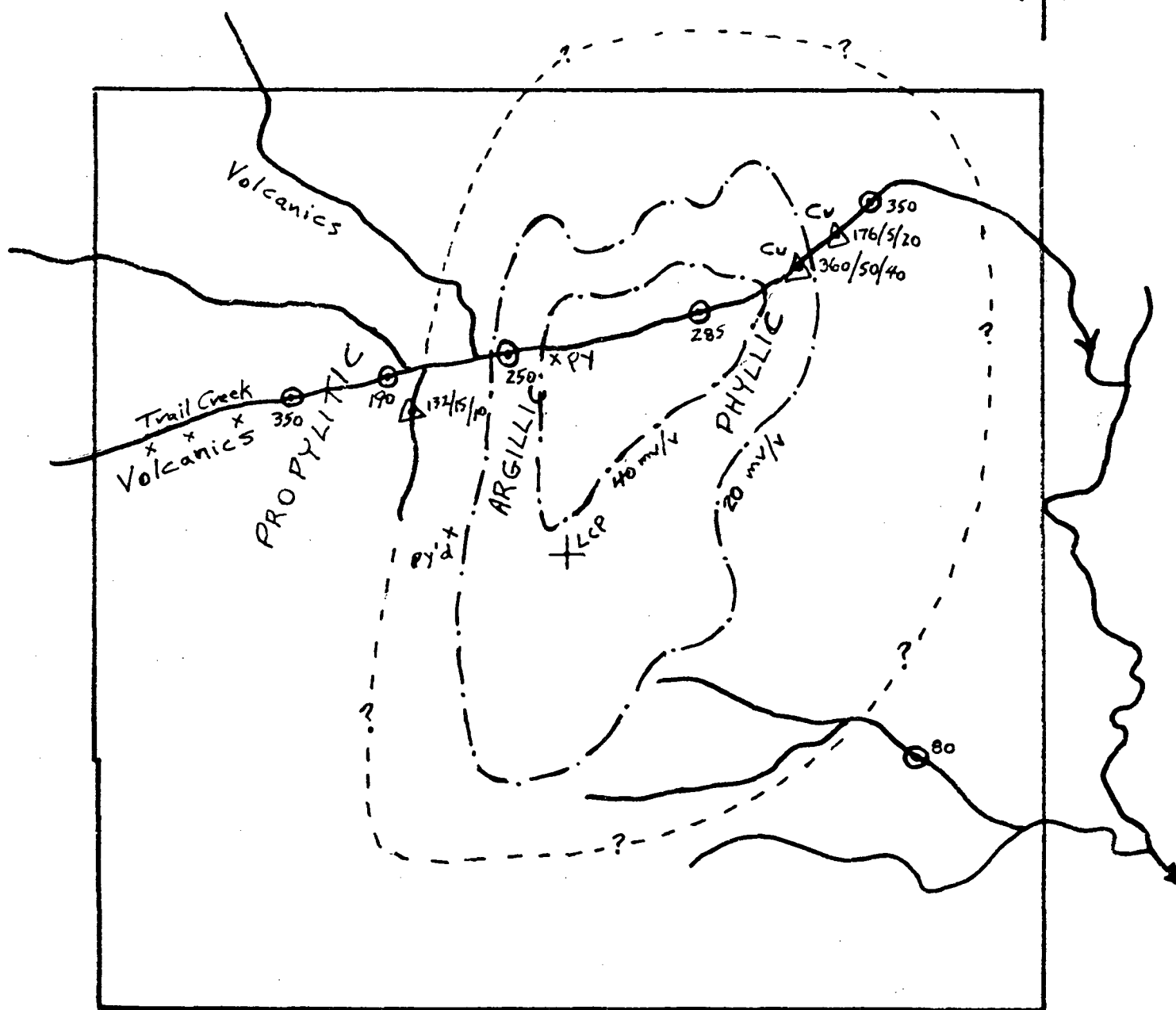
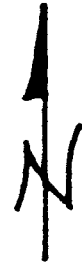
FIG. 4



⊙ Sample Location (Bulk sediment)

MSJ 1-4 Group
 Results - Au (ppb)
 from
 Bulk Sediment Samples

1:25,000 934/6



MSJ claims

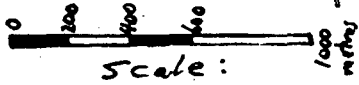
Boundary

● Anomalous Bulk Sediment Sample (ppb) Au

△ Anomalous Rock Sample (Cu/Mo/Au)
ppm ppm ppb

⋯ Chargeability Anomaly (>20 mv/volt)

⋯ Altered Qtz Monz. Porph. (approx.)



scale:

FIG. 5

MSJ 1-4 Group
 COMPILATION
 MAP
 1:25,000 93L/6

GEOCHEMICAL REPORT

Encouraged by these results, these geologists returned to the MSJ claims on August 13th and 15th, during which time they collected an additional 8 rock samples, 12 standard silt samples and 12 bulk stream sediment samples. These samples were again analyzed for Cu, Mo, Au, Ag, Pb, Zn, As in Placer's labs. Again each bulk sediment sample yielded 3 sub-samples for assay, to counteract the "nugget effect" common in gold mineralization.

8. RESULTS AND DISCUSSION

The tabulated geochemical results are presented in Appendix 1, and figure 4 graphically depicts the gold results of the 14 bulk sediment samples. 6 of these samples contain anomalously high gold values (ie > 80ppb), with both the topographically highest and lowest samples along Trail Creek each containing 350 ppb Au. There appears therefore to be at least spatial relationship between the anomalous gold values and the pyritized and altered intrusive stock (see Fig 5). Copper and molybdenum content of the altered intrusive appears to be low in the few outcrops available for sampling: peak values were 350 ppm and 50 ppm respectively in a strongly phyllic altered, well fractured outcrop along the lower reaches of Trail creek, despite relatively abundant malachite and tenorite staining.

The writer believes that the presence of hydrothermally altered quartz monzonite intrusive stock has been indicated to occur within the MSJ 1-4 claims, which contains low, but anomalous amounts copper, molybdenum and gold. The author believes that additional prospecting and geochemical sampling is required to better define a realistic drill target.

A. Schmidt

A.J. Schmidt, P.Eng.

APPENDIX 1
GEOCHEMICAL SAMPLE RESULTS

MSJ PROPERTY EXAMINATION - July 6, 1989
93L/6W

ROCK SAMPLES:

	PROJECT	Ag PPM	As PPM	Au1 PPB	Cu PPM	Mo PPM	Pb PPM	Zn PPM
random chips	536 9223	0.4	2	25	21	<1	30	175
random Chips	539 9223	0.6	<2	10	9	<1	18	88
random chips	540 9223	0.4	3	10	132	15	23	97
3 m	541 9223	0.2	4	10	9	2	18	20
random chips	542 9223	0.2	<2	15	63	2	13	48
5 m	543 9223	0.3	<2	<5	54	2	21	18
hi-graded vns	544 9223	1.3	3	<5	7	200	12	154
10 m	545 9223	1.0	<2	<5	31	<1	62	600
random chips	546 9223	0.4	<2	40	355	50	13	64
	546* 9223	0.5	<2	35	360	48	15	64
talus chips	547 9223	0.6	<2	20	176	5	40	97

BULK SAMPLES:

PROJECT	Ag PPM	As PPM	Au PPB	Au-A PPB	Au-B PPB	Cu PPM	Mo PPM	Pb PPM	Zn PPM
534 9225	1.4	8	350	NSS	NSS	102	1	46	250
537 9225	0.3	11	80	50	45	22	<1	26	121

SILT SAMPLES:

PROJECT	Ag PPM	As PPM	Au1 PPB	Cu PPM	Mo PPM	Pb PPM	Zn PPM
535 9219	<0.2	25	<5	45	2	13	160
538 9219	<0.2	9	<5	13	2	11	90

MSJ PROPERTY EXAMINATION - August, 1989
93L/6W

ROCK SAMPLES:

	PROJECT	Ag PPM	As PPM	Au1 PPB	Cu PPM	Mo PPM	Pb PPM	Zn PPM
grab	573 4453	<0.2	<2	<5	26	1	10	24
random chips	580 4453	<0.2	<2	<5	16	1	2	22
random chips	581 4453	<0.2	<2	35	20	1	3	110
random chips	597 4453	<0.2	9	25	40	1	6	30
random chips	598 4453	<0.2	4	20	5	3	2	38
random chips	599 4453	<0.2	6	<5	5	<1	5	100
random chips	602 4453	<0.2	3	<5	3	<1	3	65
random chips	605 4453	<0.2	<2	<5	4	<1	2	71

BULK SAMPLES:

	PROJECT	Ag PPM	As PPM	Au1 PPB	Au-A PPB	Au-B PPB	Cu PPM	Mo PPM	Pb PPM	Zn PPM
563	9374	0.4	7	5	5	<5	86	<1	20	210
565	9374	0.4	9	<5	<5	285	90	<1	18	235
567	9374	0.4	7	<5	<5	<5	84	<1	14	197
569	9374	0.5	7	250	90	<5	93	1	14	224
571	9374	0.4	10	<5	20	<5	132	1	15	237
574	9374	0.2	8	<5	<5	<5	60	1	15	248
576	9374	0.2	10	<5	125	190	80	1	18	183
578	9374	<0.2	6	10	350	<5	45	1	18	218
582	9374	<0.2	23	<5	<5	<5	15	<1	11	93
582*	9374	<0.2	25	<5	<5	<5	13	<1	11	95
595	9374	0.3	22	<5	<5	<5	62	<1	18	372
600	9374	0.3	14	<5	<5	25	49	<1	21	530
603	9374	0.2	15	<5	<5	40	48	<1	14	300

SILT SAMPLES:

	PROJECT	Ag PPM	As PPM	Au1 PPB	Cu PPM	Mo PPM	Pb PPM	Zn PPM
564	9455	<0.2	7	<5	88	3	19	220
566	9455	0.3	6	<5	73	1	16	205
568	9455	0.5	8	<5	78	<1	15	212
570	9455	0.2	10	<5	79	<1	15	202
572	9455	0.2	10	<5	108	<1	14	260
575	9455	<0.2	8	<5	48	<1	15	224
577	9455	<0.2	6	<5	65	1	16	136
579	9455	0.2	8	<5	38	1	17	234
583	9455	<0.2	13	<5	12	<1	12	115
583*	9455	<0.2	11	NSS	11	<1	11	110
596	9455	0.4	15	<5	53	<1	18	386
601	9455	0.3	14	<5	37	<1	20	460
604	9455	0.3	12	<5	49	<1	16	294

APPENDIX 2

- ANALYTICAL PROCEDURES
- BULK SEDIMENT SAMPLING PROCEDURES



PLACER DOME INC.

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TELEX 24-55181
FAX 604-682-7092

MAILING ADDRESS
PO BOX 49330
BENTALL POSTAL STATION
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CANADA
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STANDARD ANALYSIS METHODS USED BY PDT GEOCHEM LAB ARE LISTED BELOW:
ALL RESULTS EXPRESSED AS INDICATED IN UNITS COLUMN BELOW
ANY EXCEPTIONS FOR THIS PROJECT ARE NOTED ABOVE

REMARKS: INTERNAL LAB STANDARDS HAVE BEEN INCLUDED FOR REFERENCE.
SAMPLE NUMBERS FOLLOWED BY * ARE DUPLICATE ANALYSES.

	UNITS	WT.G	ATTACK USED	TIME	RANGE	METHOD
AG	PPM	0.5	HCL04/HNO3	4HRS	0.2-20	A.A. BACKGROUND CUR
AS	PPM	0.5	AQUA REGIA	3HRS	2-2000	DC PLASMA
AU1	PPB	10.0	AQUA REGIA	3HRS	5-4000	A.A. SOLVENT EXTRACT.
CU	PPM	0.5	HCL04/HNO3	4HRS	2-4000	ATOMIC ABSORPTION
MO	PPM	0.5	HCL04/HNO3	4HRS	1-1000	ATOMIC ABSORPTION
PB	PPM	0.5	HCL04/HNO3	4HRS	2-3000	A.A. BACKGROUND CUR.
ZN	PPM	0.5	HCL04/HNO3	4HRS	2-3000	ATOMIC ABSORPTION

Silt and bulk stream sediment samples are sieved to -150 mesh before analysis. Three separate 10 g aliquots from bulk samples are analyzed for Au using the same procedure. Rock samples are crushed, split, and pulverized to -150 mesh.



PLACER DOME INC.

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Bulk Sediment Sampling Procedure

Bulk stream sediment samples are collected essentially in the same procedure as heavy mineral samples. This procedure involves sieving stream gravel with a -20 mesh screen and collecting the finer material for a sample. A five to seven pound bulk sediment sample is collected as compared to the 15 to 20 pound heavy mineral sediment sample. This smaller sample size has the definite advantage over heavy mineral sampling in that sampling time is considerably reduced and sampling along the entire stream system can be conducted in a more detailed pattern. Sample preparation for analyses is simple, and therefore the time frame for obtaining results from the laboratory can be as soon as two days compared to heavy mineral samples which can be upwards of three weeks or longer.

For this gold exploration program, bulk sediment samples were collected so as to obtain sufficient material to make three separate gold analyses from the -150 mesh fraction of the sample. The multiple analyses from a single sample would provide a better evaluation of the sample site as this procedure would alleviate part of the serious nugget effect in gold assaying.

Sample sites in the streams are carefully selected. Various stream characteristics and conditions are initially observed in order to select the most suitable sample location. Such positions as plunge pools, riffles, point bars, mid-channel bars and toes or base of stream gradient changes are normally considered. The program was designed so that samples were collected at quarter-mile intervals along the stream with samples also being collected from tributaries of the main stream. One of the requirements of the bulk sediment material is to collect sediment that would be representative of not only one season's deposition but to include several season's stratification in the stream bed; therefore care was exercised in digging deeply in one spot rather than collecting the more easily obtainable gravel or sand from the quiet and slow-flowing segments of the stream. In general, slightly more material was collected from the faster-flowing streams as there is a higher proportion of coarse material in these higher energy flows.

Gold analysis of the -150 mesh fraction is normally performed in triplicate. The three assays for one sample generally show a fairly consistent agreement, but wide variability in values have been experienced. These inconsistencies may vary from undetectable to over 1.40 ppm Au within one sample; these may be partly attributable to inherent geochemical problems on particle size and severe nugget effect in the fine sample fractions. For the treatment and interpretation of these erratic results, it has been important to at least recognize the presence of gold in the sample.

APPENDIX 3

COST STATEMENT - PLACER DOME INC.



PLACER DOME INC.

1000 1055 DUNSMUIR ST
VANCOUVER, B.C.
V6C 3E2
TELEPHONE (604) 682-3000
FAX (604) 682-3002

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P.O. BOX 49230
REYNOLDS, BRITISH COLUMBIA
VANCOUVER, B.C.
CANADA
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October 12, 1989

Mr. A. J. Schmidt
306 - 673 Market Hill
Vancouver, B.C. V5Z 4B5

Dear Andy:

The following is an accounting of the expenses incurred by Placer Dome Inc. for the purpose of evaluation of the MSJ claims, Omineca Mining Division, on July 6th and August 13th and 15th, 1989:

<u>Personnel</u>		
2 geologists x 4 man days each		\$ 2,250.00
1 field assistant x 2 man days		432.00
<u>Room & Board</u>		430.00
<u>Sample Shipments</u>		85.00
<u>Helicopter</u>		
July 6	1.3 hrs	816.40
August 13	1.2 hrs	753.60
August 15	1.5 hrs	839.10
<u>Analyses</u>		
18 rock samples		274.50
14 bulk stream sediment samples		444.67
14 silt sediment samples		180.60
TOTAL EXPENDITURES		\$ 6,505.87

Descriptions of bulk stream sediment sampling procedures and methods of analyses used by Placer Dome's lab are attached.

Sincerely,

PLACER DOME INC.

Gwendolen M. Ditson
Geologist

cc: Grid File 034032
Attached: Bulk Sample Procedural Description
Analyses Procedures

APPENDIX 4
CERTIFICATE

APPENDIX 4
CERTIFICATE

I, Andrew J. Schmidt, do hereby certify:

1. That I am a consulting Geological Engineer with offices at # 306 - 673 Market Hill, Vancouver, B.C.
2. That I graduated in Geological Engineering from the University of British Columbia in 1961 with a Bachelor of Applied Science Degree.
3. That I have practised my profession continuously since graduation.
4. That I am a registered Professional Engineer in The Association in British Columbia.
5. That I am a 50% owner of the MSJ 1-4 mineral claims which are the subject of this report.
6. That this report dated November 1, 1989, is based on technical data supplied by Placer Dome Inc., as well as my own personal knowledge of the property.

DATED at Vancouver, B.C. this 1st day of
November, 1989.



A.J. Schmidt, P. Eng.