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BOND PEAK AREA

Geology & Stream-sediment Sampling Survey

H. Smith
April 1968.

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130002

BOND PEAK AREA

Geology and Stream-Sediment Sampling Report

GENERAL

Detailed stream-sediment sampling in the Lake Lea-Bond Peak area was completed recently to check high zinc-lead values obtained in an earlier reconnaissance survey.

Lake Lea can be reached by a rough, four-wheel drive, dry weather track from the Cradle Mountain road. The southern end of Lake Lea is 7 road miles west of the Cradle Mountain road.

PHYSIOGRAPHY

The area investigated consists of steep-walled, NE-SW trending mountain ranges separated by broad, flat valleys. The valley south of Lake Lea is about 1 mile wide with gently rolling hills rising only a few feet above the valley floor - the valley to the east of Bond Peak is smaller and more undulating.

The wide valley floors are covered in mountain grasses and mosses, while the flanking hills and mountains have open-bottom eucalypt forest coverings. The steep, narrow valleys north of Lake Lea consist of dense rain forest.

GEOLOGY

Base rocks outcropping in the area are Ordovician quartzites and fine medium grained conglomerates, which give rise to the rugged cliffs on the mountain ranges. They have a NE-SW strike and generally dip steeply (50°-80°).

Ordovician limestone underlies the flat valley south of Lake Lea and gives rise to karst topography up to 2 miles south of the Lake.

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Geology (continued)

North of Lake Lea, Tertiary basalt is in immediate contact with Ordovician quartzites and the Lea River follows this contact. This basalt probably filled the valley south of Lake Lea also, as remnants still cap the higher hills on the valley floor. To the east of Bond Peak, basalt outcrops over wide flat areas - the contact with quartz-feldspar porphyries east of Bond Peak is hidden by a thick layer of recent alluvials.

The quartz-feldspar porphyry which outcrops over a large area east of Bond Peak, is medium-coarse grained and in some areas approximates a granite. Its age is uncertain, as limited time prevented any close study of its relationship with Ordovician rocks. Past authors, in brief reconnaissance geology maps have given its age as both Devonian and Cambrian.

Structure in the area consists basically of NE-SW striking Ordovician sediments which have been faulted (normal) probably in the Tertiary period and the graben areas subsequently filled with Tertiary olivine basalt. This basalt has been eroded from the areas near the main streams to expose Ordovician sediments.

ECONOMIC GEOLOGY

The only signs of ore mineralization in the area are limonitic gossan outcrops and some disseminated pyrite.

In the Lake Lea valley near sample number 778444 there are two 150 ft. by 150 ft. outcrops of limonitic gossan at least 8 ft. thick.

Analysis of this gossan revealed:

Cu	10 ppm
Pb	10 ppm
Zn	90 ppm
Ni	50 ppm
Co	80 ppm

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Economic Geology (continued)

There are smaller, similar outcrops along the valley floor, generally where basalt is in contact with Ordovician limestone.

Pyrite occurs as disseminated grains in the quartz-feldspar porphyry and in high concentration in worm tubes Tn Ordovician quartzites.

STREAM-SEDIMENT SAMPLING AND RESULTS

Apart from the Lea River in the youthful valley north of Lake Lea, which is fairly fast flowing, the streams are generally small and slow flowing. The streams in the flat valley floors are mainly cutting through Quaternary-Recent alluvials and have fine, black muddy beds. Those flowing off the quartz-feldspar porphyry have a high proportion of quartz grains.

Analysis of the stream sediments was generally negative as can be seen from the accompanying maps, there being only an odd cobalt and zinc above 100 ppm.

RECOMMENDATIONS

It is recommended that there be no further work done in this area as the recent survey has failed to show any significant signs of economic mineralization.

H. Smith
30 March, 1968.

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RICKARDS MATHER.
TABLE 1

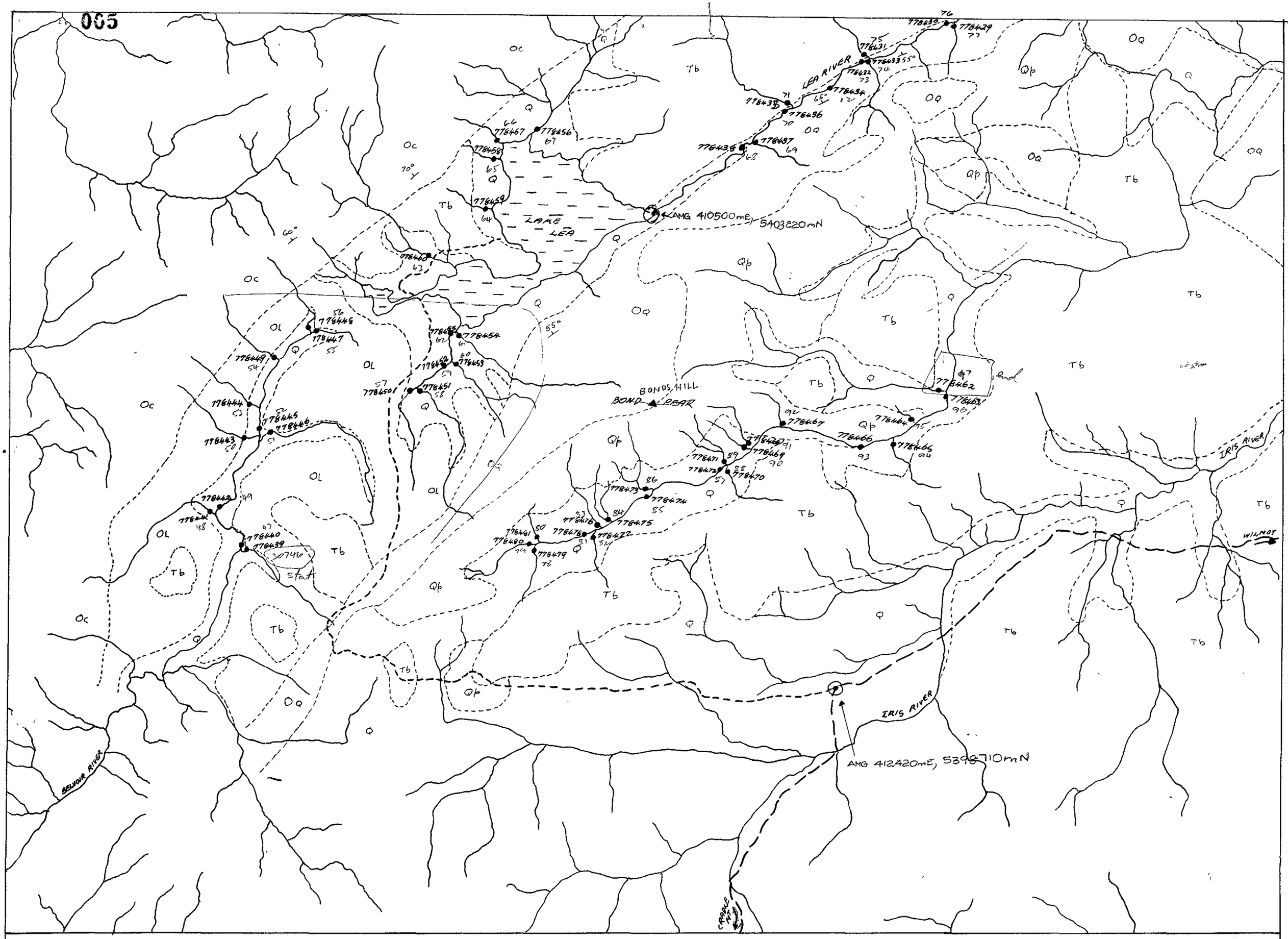
GEOCHEMICAL STREAM SEDIMENT SAMPLES

Plans Geological Drafting

BOND PEAK AREA

Sample No.		Cu.	Pb.	Zn.	Ni.	Co.
	GIS					
778456	20767	5	0	15	10	5
457	66	5	0	5	0	0
458	65	5	0	15	50	0
459	64	5	0	5	5	5
460	63	5	0	10	10	0
778429	77	15	15	20	20	10
430	76	15	20	65	30	15
431	75	10	10	80	50	10
432	73	7	15	45	25	5
433	74	10	15	55	20	15
434	72	50	10	90	45	0
435	71	20	15	55	50	20
436	70	30	0	25	10	0
437	69	5	0	40	7	5
438	68	10	15	40	30	10
462	97	10	30	75	35	120
463	96	10	20	90	25	75
464	95	7	20	80	20	10
465	94	5	15	80	25	5
466	93	7	20	75	20	60
467	92	15	20	300	40	290
468	91	20	20	90	60	75
469	90	10	15	75	40	20
470	88	10	15	60	60	125
471	89	7	15	55	25	75
472	87	7	10	55	25	95
473	86	15	10	95	80	15
474	85	7	15	40	35	15
475	84	5	10	30	20	5
476	83	7	10	35	40	5
477	82	20	10	60	70	20
478	81	2	10	25	10	0
479	78	2	10	25	15	0
480	79	5	10	18	15	0
481	80	2	10	18	10	0

FIS	Sample No	Cu	Pb	Zn	Ni	Co
30746	778439	25	50	100	50	20
47	40	20	90	100	70	50
48	41	5	10	20	10	10
49	42	20	80	100	60	35
50	43	5	10	20	10	5
51	46	25	20	45	35	15
52	45	7	10	40	20	15
53	44	5	0	15	7	5
54	49	5	0	15	7	0
55	47	10	20	25	15	10
56	48	5	0	5	5	5
57	50	5	0	5	5	0
58	51	10	0	10	5	0
59	52	5	15	20	10	5
60	53	7	0	15	5	0
61	54	5	0	15	0	0
30762	55	5	10	20	10	5



BOND PEAK AREA

stream-sediment sample points & Geology

T.N. M.N. (12.5°)

Scale 2" to 1 mile.

Q	Quaternary alluvials
Ol	Ordovician limestone
Oq	Ordovician quartzite
Oc	Ordovician conglomerate
Tb	Tertiary basalt
Qp	Devonian (?) qtz-felspar-porphyry

AMG REFERENCE POINTS ADDED

5 cm

130007

ALL WEATHER ROAD

FOUR-WHEEL-DRIVE ROAD

GEOLOGICAL CONTACT

BOND PEAK AREA

stream-sediment sample points

& GEOLOGY

T.N. M.N. 13.5°

5 cm

Scale 2" to 1 mile.

Qa	Quaternary alluvials
Tb	Tertiary olivine basalt
Dp	Devonian (?) quartz porphyry
Ol	Ordovician limestone
Q	" quartzite
C	" conglomerate

130008

All weather road

Four-wheel-drive road

Geological contact

BOND PEAK AREA

stream-sediment sample points

COPPER

< 25 ppm

25 - 50 ppm

50 - 100 ppm

>100 ppm

All weather road

Four-wheel-drive road

Geological contact

130009

T.N. M.N.

5 cm

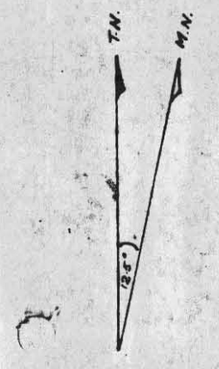
Scale 2" to 1 mile.

BOND PEAK AREA

stream-sediment sample points

COLD COPPER

130010



5 cm

Scale 2" to 1 mile.

≥ 10 ppm

10-20 ppm

20-40 ppm

>40 ppm

All weather road

Four-wheel-drive road

Geological contact

BOND PEAK AREA

stream-sediment sample points

130011

LEAD

< 25 p.p.m.

25-50 p.p.m.

50-100 p.p.m.

> 100 p.p.m.

All weather road

Four-wheel-drive road

Geological contact

T.N. M.N. (18.5°)

5 cm

Scale · 2" to 1 mile.

BOND PEAK AREA

stream-sediment sample points

ZINC

< 25 p.p.m.

25-50 p.p.m.

50-100 p.p.m.

>100 p.p.m.

T.N. M.N. 18°

5 cm

Scale 2" to 1 mile.

130012

All weather road

Four-wheel-drive road

Geological contact

BOND PEAK AREA

stream-sediment sample points

NICKEL

< 25 p.p.m.	
25-50 p.p.m.	
50-100 p.p.m.	
> 100 p.p.m.	

130013

All weather road

Four-wheel-drive road

Geological contact

T.N. M.N. 18°

5 cm

Scale 2" to 1 mile.

BOND PEAK AREA

stream-sediment sample points

COBALT

130014

T.N. M.N. (18°)

5 cm

Scale 2" to 1 mile.

< 25 p.p.m.

25 - 50 p.p.m.

50 - 100 p.p.m.

> 100 p.p.m.

All weather road

Four-wheel-drive road

Geological contact