

ARIS SUMMARY SHEET

District Geologist, Kamloops

Off Confidential: 89.06.17

ASSESSMENT REPORT 17803

MINING DIVISION: Kamloops

PROPERTY: Hawk  
LOCATION: LAT 50 48 13 LONG 120 03 35  
UTM 10 5631888 707176  
NTS 092I16E  
CLAIM(S): Hawk 5-8  
OPERATOR(S): Redbird Gold  
AUTHOR(S): Roed, M.A.  
REPORT YEAR: 1988, 19 Pages

COMMODITIES

SEARCHED FOR: Gold

GEOLOGICAL

SUMMARY: A northerly trending, steeply dipping series of limestone, pyritic basalt, argillite, greenstone, andesite and clastic sediments of the Permo-Pennsylvanian Cache Creek Group are intruded by hornblendite of Jurassic age.

WORK DONE:  
Geological  
GEOL 1650.0 ha  
Map(s) - 1; Scale(s) - 1:12 000  
ROCK 26 sample(s) ;AU,PT,PD

LOG NO: 0930

RD.

ACTION:

FILE NO:

-i-

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GEOLOGY OF THE HAWK 5 TO 8 CLAIMS

1.0 INTRODUCTION

Geological exploration on the Hawk 5 to 8 mineral claims 30 kilometers northeast of Kamloops, B.C., in late 1987 and early 1988 consisted of general geologic mapping, rock geochemistry, photogeology and testing for heavy minerals. This report is a summary of this work.

1.1 Property Description and History

The Hawk 5 to 8 claims were staked in June and July of 1987. They are Modified Grid System claims with legal corner posts as shown in Figure 1. The claims were recorded in the Kamloops Mining Division and are shown on Claim Map 92I/16E (Figure 2). They consist of a total of 66 units as follows:

Hawk 5	20 units	Record No. 7132	June 26
Hawk 6	10 units	Record No. 7133	June 26
Hawk 7	16 units	Record No. 7165	July 20
Hawk 8	20 units	Record No. 7164	July 20

The claims were part of a grubstake agreement between C. Marlow, W. Hall and M. Roed who respectively held 20%, 20%, and 60% interest. The four claims were optioned to Redbird Gold Corp. in October, 1987. This company has recently indicated its intention not to renew its option.

## 1.2 Physiography

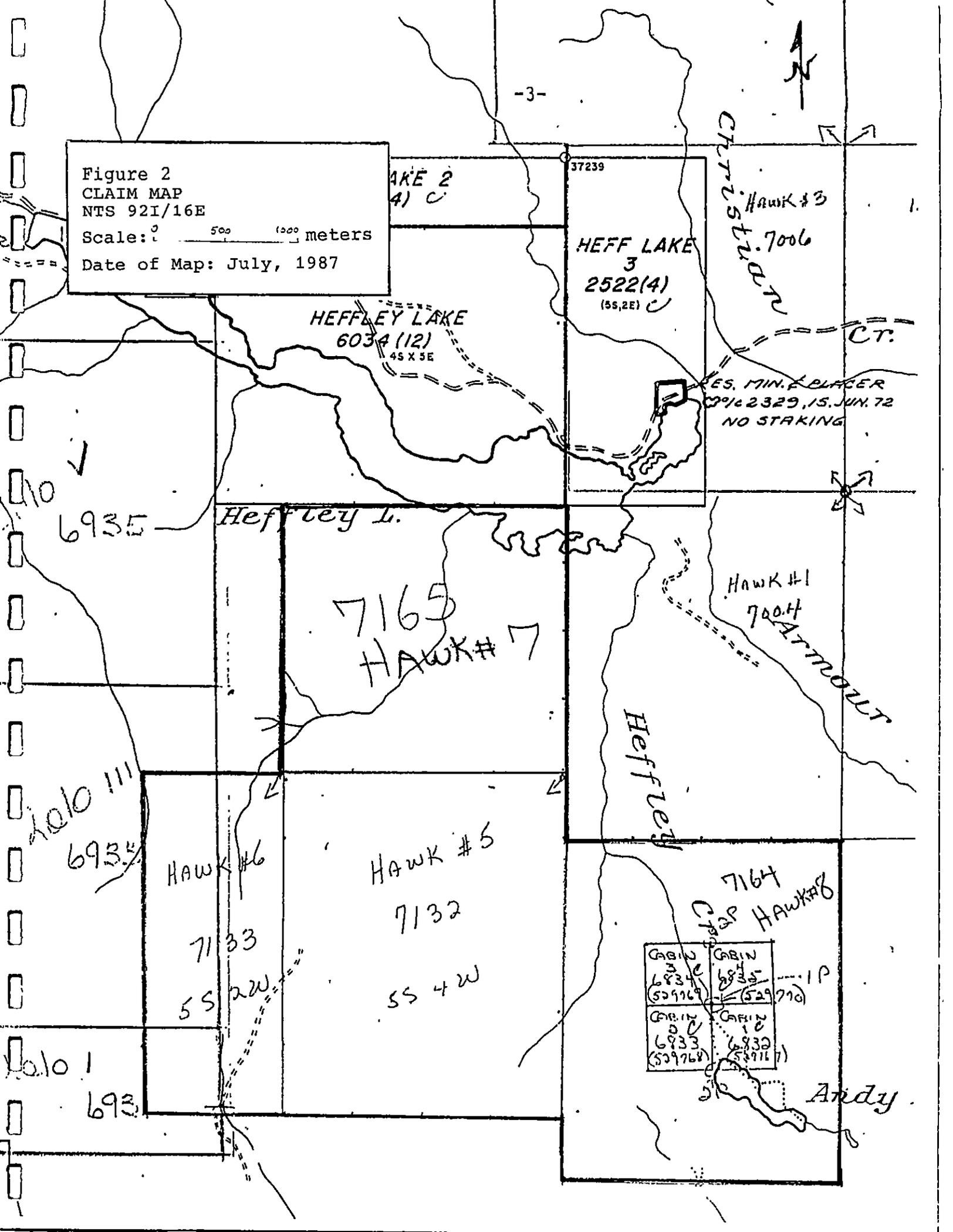
The Hawk 5 to 8 claims occur on the flank of a highland immediately south of Heffley Lake. Heffley Lake valley is a prominent easterly trending depression at the southern edge of the Adams Plateau. The valley connects with the Thompson River in the west and Lewis Creek valley on the east. Heffley Lake valley is drift filled, and is characterized by extensive ice-contact sand and gravel and till moraine, terraces, pits and kettle lakes. Elevation of the valley bottom is approximately 940 meters. Flanking highlands up to 1524 meters in elevation consist of rolling rock cored terrain mantled with a thin veneer of till. Outcrop is scarce except along road cuts.

Heffley Lake is a kettle lake and is the largest in the area. Creeks on the property are tiny. Some flow to the north and some to the south and finally end up in the North Thompson River. Andy Lake occupies part of a shallow upland depression on the Hawk 8 claim and gives rise to Heffley Creek.

The property is forested and under permit for the most part to Balco Industries Ltd. The principal resource is pine which occurs in mature stands scattered over the property. A limited patch of rangeland occurs on the Hawk 8 claim and cattle are at large at times. Other vegetation consists of birch and aspen.



Figure 2  
 CLAIM MAP  
 NTS 92I/16E  
 Scale: 0 500 1000 meters  
 Date of Map: July, 1987



LAKE 2  
4) C

37239

CHRISTIAN  
HAWK #3  
7006

HEFF LAKE  
3  
2522(4)  
(SS, 2E) C

HEFFLEY LAKE  
6034 (12)  
45 X 5E

RES. MIN. PLACER  
372329, 15. JUN. 72  
NO STAKING

CT.

6935

Heffley L.

7165  
HAWK #7

HAWK #1  
7004

ATMOUNT

Heffley

6934

HAWK #6

HAWK #5

7164  
HAWK #8

7133

7132

GBIN 3 6934 (529769)	GBIN 6835 (529770)
GBIN 5 6933 (529768)	GBIN 10 6832 (529771)

IP

SS 2W

SS 4W

Andy

6933

### 1.3 Access

The property is situated 40 kilometers by road from Kamloops along Highway 5 (see inset map of Figure 1) then eastward on the Tod Mountain road (NTS 921/16E).

A network of well maintained forest access roads provide two-wheel drive access to most parts of the claims. Several large clear-cut blocks provide easy access to a number of localities.

### 1.4 Previous Work

The bedrock geology of the region has been mapped by Cockfield(1961). Asamera Inc. holds nine claim blocks to the west and is apparently pursuing the source of soils platinum anomalies.

North of Heffley Lake a massive magnetite deposit has been described by Cockfield(1961, p.143).

Limited blasting on pits has been done on a quartz vein just to the north of Andy Lake. This work was done in the early sixties and perhaps prior to that time.

### 1.5 Object of Present Work

The object of the present work is to establish the basic geologic framework and generally determine precious metal background values.

## 2.0 GEOLOGIC MAPPING RESULTS

The Hawk 5 to 8 mineral claims are underlain by northwest trending steeply dipping belts of limestone, argillite, andesite and greenstone belonging to the Cache Creek group of Permian age (Cockfield, 1961) and diorite and hornblendite intrusive rocks of Jurassic age. The distribution of these rocks and their structural attitudes are given in Figure 1. All outcrops along roads were mapped and sampled on a representative basis and photogeologic interpretation was undertaken.

### 2.1 Rock Geochemistry and Assays

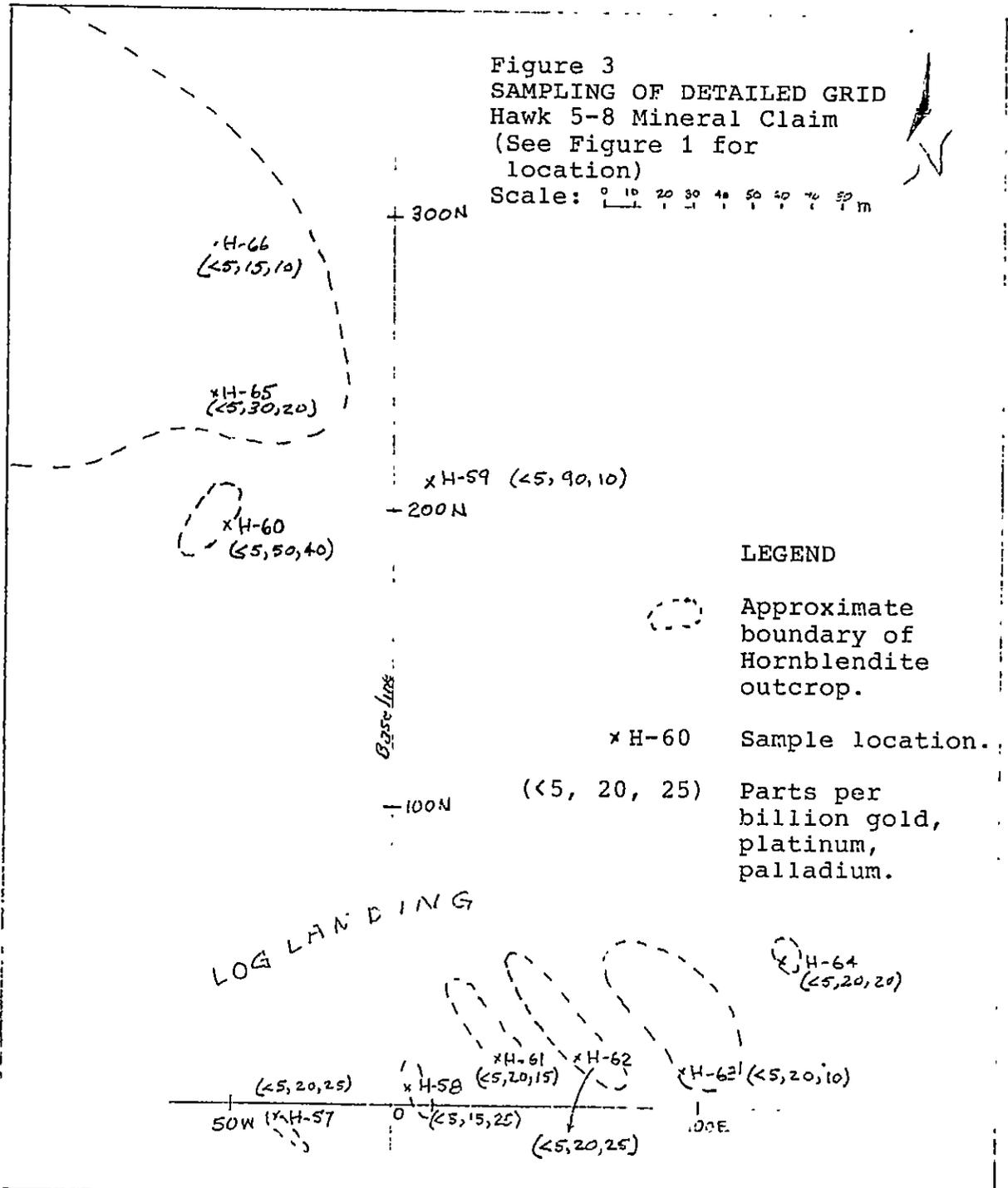
Twenty-six rock samples were collected from outcrops on various parts of the property and most were analyzed by Bondar-Clegg (Appendix A).

Gold was either undetected or represented by a low background value up to 36 parts per billion. Exceptions to this was a grab sample of pyrite in a quartz vein near H-49 (Figure 1) which assayed .022 ounces per ton gold. This locality from which this sample was taken was disturbed during 1988 logging and could not be relocated.

Slightly anomalous gold occurs in a 1.5 meter thick quartz vein directly north of Andy Lake at H-50 (Figure 1). Galena crystals and clusters are scattered throughout the quartz vein. Silver runs 2.13 ounces per ton in the test samples.

Special attention was given to a large hornblendite mass that occurs on the Hawk 7 claim (See grid of Figure 3 on next page). This unit was analyzed for gold, platinum and palladium (H-57 to H-66). The only anomalous sample was from a large boulder of actinolite-rich hornblendite

which ran 90 parts per billion platinum. One hornblendite sample (H-60) ran 50 parts per billion platinum and 40 parts per billion palladium.



## 2.2 Heavy Mineral Sampling

Seven localities along a small stream in Hawk 7 were chosen for sluicing and gold-platinum analysis in heavy mineral concentrates. Six were actually sampled. The results of assays of the concentrates are given in Appendix A, S-1 to S-7 inclusive. The best result was at S-1 (Figure 1) where gold ran 1.390 ounces per ton and platinum 0.109 ounces per ton.

### 2.2.1 Equipment and Sampling Technique

A standard sluice box and grizzly were employed for the heavy mineral sampling. The sluice box measures 1 foot wide and 4 feet long with metal mesh riffles and a burlap map. Water was supplied by a Honda one and a half inch pump.

Alluvium was shovelled into the sluice. Most tests represent one half cubic yard or one hundred shovelfuls.

Concentrates were obtained by panning. The panned concentrates were then sent to the assay lab for "all metallic" assays, the results of which are given at the end of Appendix A.

### 3.0 DISCUSSION OF RESULTS

Altered portions of the hornblendite may have some potential for platinum concentration. However, the low values recovered in this study are not particularly encouraging.

The sluice tests were interesting but somewhat inconclusive. Gold and platinum were highest at the farthest point from their suspected source rock, the hornblendite.

The best gold recovery in the field was from S-3 where over 17 colours of gold were observed in a gold pan. Unfortunately the lab lost this sample and time did not allow repetition of the sample for this report.

#### 4.0 CONCLUSIONS

Sulfide mineralization in the form of disseminated pyrite crystals is common in a gossan-like unit referred to as a basalt on the Hawk 6 claim block. No gold values were obtained from this unit.

The hornblendite unit contains spotty slightly anomalous platinum values on Hawk 7 but to date there is no well defined target.

Although a sizeable quartz vein with low silver values occurs on the Hawk 8 near Andy Lake, there were no massive lenses of galena which would provide some encouragement for further exploration. Stripping and blasting this locality may be of some benefit and detailed soils geochemistry may provide additional data.

5.0 REFERENCES

Cockfield, W.E., 1961. Geology and Mineral Deposits  
of Nicola Map-Area, British Columbia. Geological  
Survey of Canada, Memoir 249, 164 pp..

6.0 STATEMENT OF EXPENDITURES

WAGES

Sampling and Testing:

P. Merry, 23 hours @ \$10.50 per hour May 12 - 18/88	\$ 241.50
G. Kilmartin, 23 hours @ \$10.50 per hour May 12 - 18/88	241.50

ROCK GEOCHEMISTRY

Bondar-Clegg, Analysis, July 8, 1988	
Invoice #V048300	472.50
Invoice # V048299	382.50

VEHICLES

4x4 K5 Blazer, 5.5 days @ \$25.00 per day	137.50
Kileage, 860 km @ .30¢ per km	258.00
4x4 Truck, 5 days @ \$25.00 per day	125.00
Kileage, 500 km @ .30¢ per km	150.00

GEOLOGICAL AND FIELD WORK

M.A. Roed, geologist, July 8, 1987 to June 8, 1988, 44 hours @ \$50.00 per hour	2,200.00
D. Vander Wal, field assistant, May 17 and June 5, 1988, 10 hours @ 12.00 per hour	120.00

DRAFTING AND REPRODUCTION

Norman Wade Company Ltd., maps,	
Invoice #1821	1.07
Invoice #1824	4.71
Invoice #0806	39.25

DBM Technical Services,	
drafting, Invoice #8810	20.00
drafting, Invoice #8840	62.50
drafting, Invoice #8854	125.49

FIELD EXPENSES

Price and Markle, Invoice #002948,	
supplies	.97
Poeck Bros, Invoice #8548702,	
supplies	6.36
Woolco, May 12/88, shovel and	
screw driver	13.73

REPORT WRITING

M.A. Roed, 16 hours report writing, @ \$50.00	
per hour	800.00
D. Vander Wal, secretarial, typing, 12 hours	
@ \$25.00 per hour	300.00

TOTAL EXPENDITURES	<u>\$5,702.58</u>
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7.0 STATEMENT OF QUALIFICATIONS

I, MURRAY A. ROED, of the City of Kamloops, Province of British Columbia, DO HEREBY CERTIFY THE FOLLOWING:

Education:

B.A., Geology, 1959, University of Saskatchewan.  
M.A., Geology, 1961, University of Saskatchewan.  
Ph.D., Geology, 1968, University of Alberta.

General Experience:

Pre-1965, Employed as Geologist for Shell Canada Ltd. Research Council of Alberta. Summer employment with Shell Canada Ltd. and Geological Survey of Canada.

Post-1965 to present, Independent Geological Consultant and Engineering Geological Consultant in Edmonton; Vancouver; Sidney, Australia; Ottawa; Vernon; Kamloops.

Corporate Positions Held:

President, M.A. Roed Geological Explorations Ltd.  
President, Geo-analysis Ltd.  
President, Panwest Pty. Ltd.  
President, Decade Development Ltd., N.P.L.  
President, Pundata Gold Corporation.

Present Corporate Positions:

President, Redbird Gold Corp. (Since 1986)  
President, Foxview Management Limited. (Since 1974)

Mining Experience:

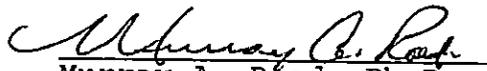
Produced a gold mine, Mallard Lake, Saskatchewan, 1971.  
Numerous property examinations, exploration programs, Engineering Geology and Environmental Studies, Aggregate Studies.

Professional Organizations:

Association of Professional Engineers of British Columbia  
Fellow, Geological Association of Canada.

The work on the Hawk 5 to 8 mineral claims was supervised and conducted by myself and an assistant. I am the author of the present report.

I am a substantial shareholder in Redbird Gold Corp. and an Officer and Director of the Company.

  
Murray A. Roed, Ph.D.  
September 20, 1988

APPENDIX A

Description of Localities, Hawk 5 to 8,  
and Assay and Geochemical Results

(Values in parts per billion unless otherwise stated)

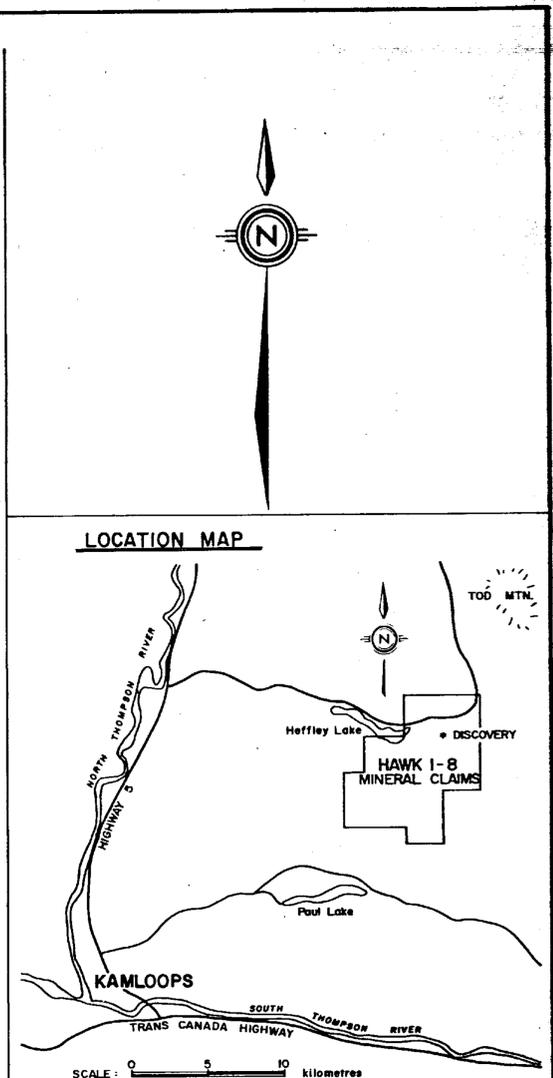
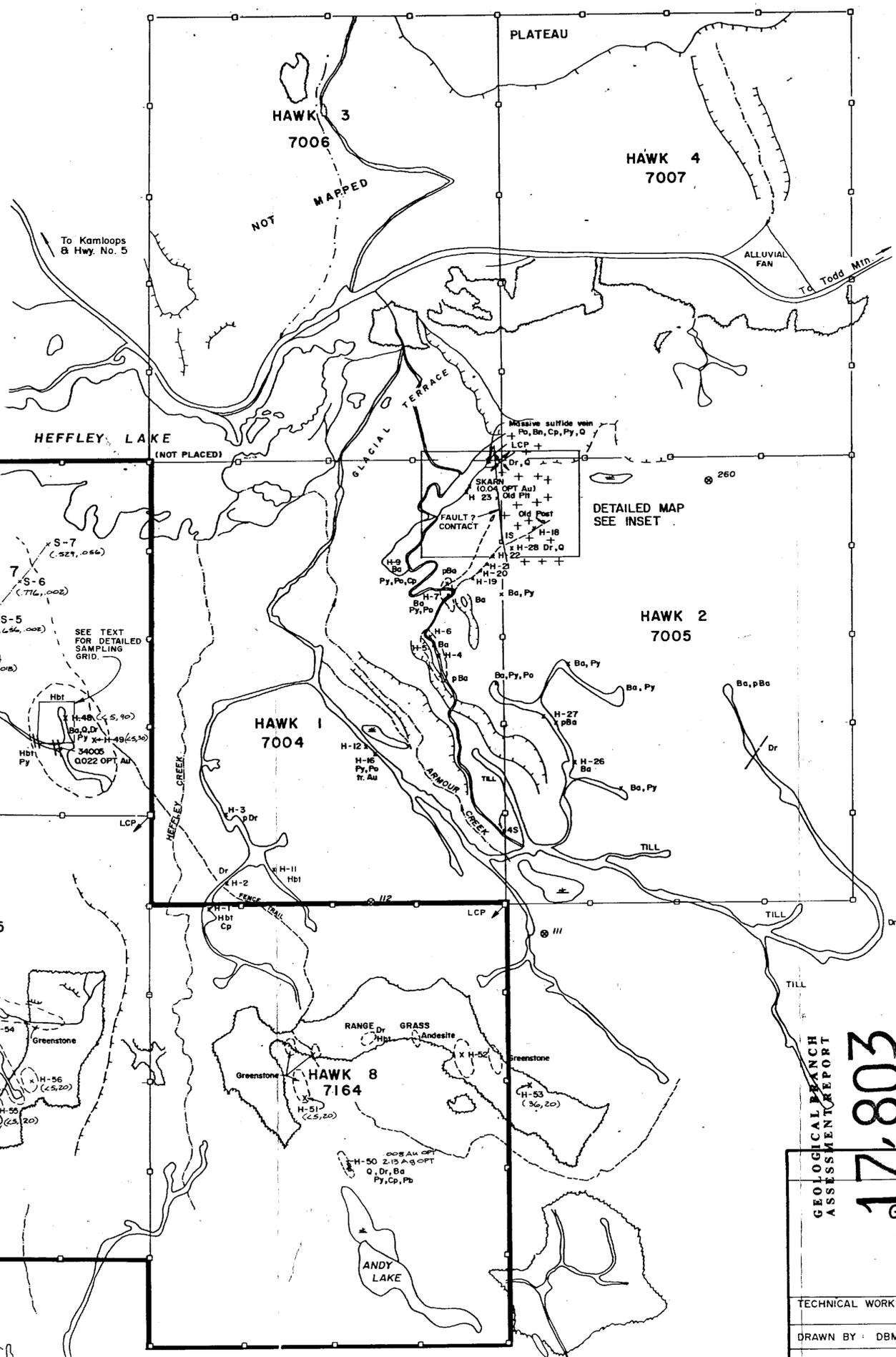
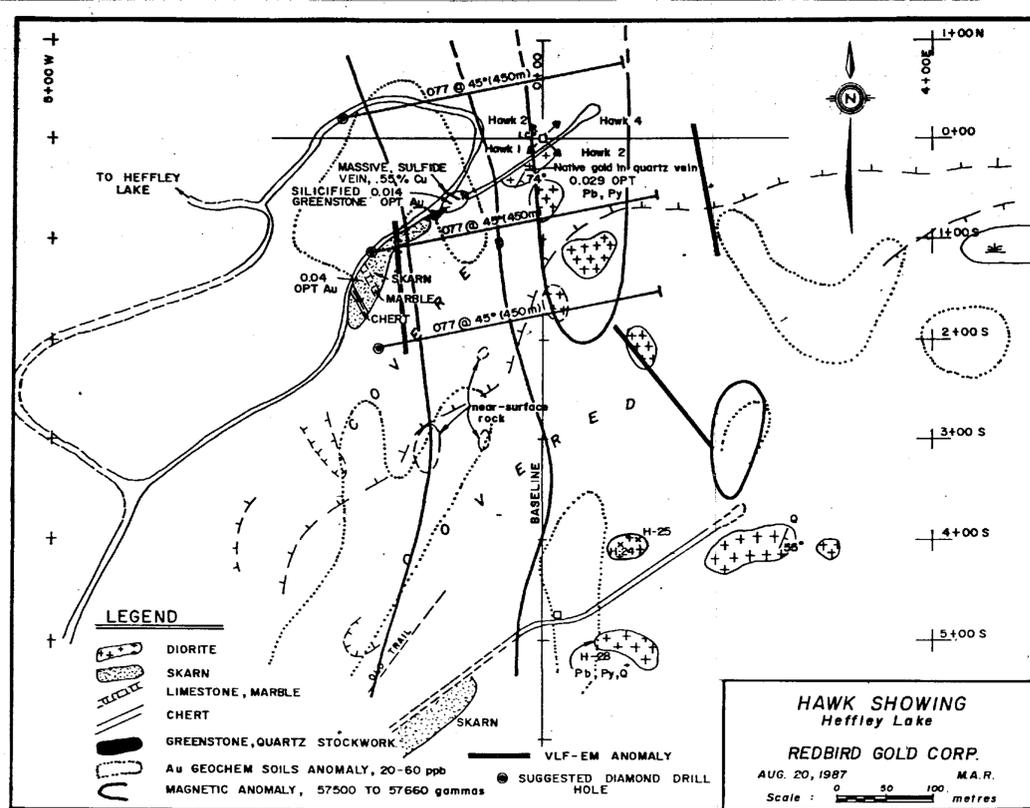
<u>Sample No.</u>	<u>Description</u>	<u>Assay or Geochem</u>
H-41	Limestone, very light grey, irregular grey cherty bands or nodules, calcite veins, fragments of black angular shells, coral-like inclusions. Large pyrite crystals up to 5cm, some druzy calcite with clusters of galena crystals. Strike 155 to 180, Dip-vertical	N/A
H-42	Argillite light to dark grey, finely laminated, siliceous, iron stained along oblique widely spaced fractures. Strike 177, Dip-vertical	N/A
H-43	Argillite, light to dark grey, finely laminated, iron stained. Strike 147, Dip-vertical	N/A
H-44	Basalt-andesite, finely crystalline, medium grey, abundant pyrite crystals, iron stained. Strike 190, Dip-67° West	34003 Au .001 OPT
H-45	Argillite, greenstone and andesite sequence exposed along road. Argillite is light to medium green. Sill or volcanic flow in metasedimentary sequence. Strike approximately 180, Dip?vertical	N/A

<u>Sample No.</u>	<u>Description</u>	<u>Assay or Geochem</u>
H-46	Argillite, pale green, indistinctly bedded, iron stained in places, hackly, siliceous, minor thin quartz veins and blebs of pyrite.	N/A
H-47	Andesite, extremely fine crystalline, light greyish green, partly porphyritic with mafic crystal phenocrysts, disseminated pyrite or pyrrhotite, iron stained.	34077 Au < 5, Pt 30, Pd 20
H-48	Hornblende to anorthosite, varies from massive coarsely crystalline hornblendite to soft parts altered to anorthosite, boulder, same as H-59.	34024 Au < 5, Pt 80, Pd 6 See also H-59
H-49	Hornblendite, dark green grey, massive porphyritic in part, pyrite cubes in places.	34025 Au < 5, Pt 30, Pd 55
H-50	Quartz vein, white, medium to coarse crystalline, 1.5 meters thick minimum. Portions have blebs of galena and sooty vugs. Large fragments of medium crystalline light brown diorite (34008) in pits - probable wall rock.	34007 Au .008 OPT Ag 2.13 OPT 34008 Au < .001 OPT, Ag < .01 OPT
H-51	Greenstone, finely crystalline, medium grey, abundant disseminated pyrite. Thirty meters of outcrop in small water fall of Heffley Creek.	34076 Au < 5, Pt 20, Pd 20

<u>Sample No.</u>	<u>Description</u>	<u>Assay or Geochem</u>
H-52	Conglomerate to pebbly "greenstone", pebbles of variety of lithologies, subrounded, light greyish green matrix, possible crinoids.	N/A
H-53	Ironstone boulder, greenstone, finely crystalline, greenish grey, abundant pyrite, some veins, possible chalcopyrite, very hard siliceous rock, iron stained, several at this location.	34078 Au 36, Pt 20, Pd 10
H-54	Limestone, medium grey to cream coloured, very finely crystalline, fractured, distinctly banded, minor thin quartz veins; possible ostracod fragments. Strike generally north, Dip near vertical	N/A
H-55	Limestone, medium grey to cream colored, thick bands of siliceous cherty material, thin quartz veins common, some limonite, etched weathered surface.	34079 Au < 5, Pt 20, Pd 10
H-56	Conglomeratic greenstone, some breccia or angular fragments, scattered pyrite crystals, rare thin quartz vein. Large boulders of red granite with pyrite and quartz blebs here.	34080 Au < 5, Pt 20, Pd 10
H-57 to H-66	See detailed grid of Figure 3.	
H-57	Hornblendite, medium grey, medium crystalline, 10% pyrite crystals, partly iron stained.	34081 Au < 5, Pt 20, Pd 25
H-58	Diorite, finely crystalline, light to medium grey, scattered pyrite crystals.	34082 Au < 5, Pt 15, Pd 25

<u>Sample No.</u>	<u>Description</u>	<u>Assay or Geochem</u>
H-59	Large angular boulder - actinolite rich (anorthosite?) hornblendite.	34083 Au < 5, Pt 90, Pd 10
H-60	Hornblendite, massive medium to coarse crystalline, dark greenish grey, possible epidote blebs.	34084 Au < 5, Pt 50, Pd 40
H-61	Diorite, light greenish grey, finely crystalline, 10% disseminated pyrite, very hard, siliceous, rare thin quartz vein.	34085 Au < 5, Pt 20, Pd 15
H-62	Hornblendite, dark greenish grey, medium to coarse crystalline, very fine quartz veins, scattered pyrite crystal blebs.	34086 Au < 5, Pt 20, Pd 25
H-63	Hornblendite, dark greenish grey, medium to coarse crystalline, scattered white quartz blebs.	34087 Au < 5, Pt 20, Pd 10
H-64	Hornblendite, dark greenish grey, medium to coarse crystalline, minor biotite, scattered blebs of pyrite.	34088 Au < 5, Pt 20, Pd 20
H-65	Hornblendite as for H-64, minor epidote.	34089 Au < 5, Pt 30 Pd 20
H-66	Hornblendite as for H-65.	34091 Au < 5, Pt 15, Pd 10

<u>Sample No.</u>	<u>Description</u>	<u>Assay or Geochem</u>
S-1 to S-7	Concentrate samples from Animal Creek, alluvium, placer test procedure. See Figure 1 for locations.	
S-1	Bouldery gravel, <u>concentrate</u> , black sand, 7 colours of Au and abundant flour gold. One quarter of a yard sample.	Au 1.390 OPT Pt 0.109 OPT
S-2	No sample taken.	
S-3	Clayey gravel, mainly pebble size, <u>concentrate</u> black sand, over 17 colours. One half yard sample.	Lab lost sample.
S-4	Clayey boulder gravel, concentrate black sand, over 7 colours. One half yard sample.	Au 0.712 OPT Pt 0.018 OPT
S-5	Clayey gravel with pebbles, concentrate black sand, 7 colours. One half yard sample.	Au 0.656 OPT Pt 0.002 OPT
S-6	No description. One half yard sample.	Au 0.776 OPT Pt 0.002 OPT
S-7	No description. One half yard sample.	Au 0.529 OPT Pt 0.056 OPT



**LEGEND**

- ROAD, FORESTRY ACCESS
- STREAM
- CLEAR CUT
- LCP LEGAL CORNER POST
- 25 CLAIM POST; POST NUMBER
- FENCE
- ORGANICS
- PHOTO CENTER
- GEOLOGIC CONTACT, Approx., Inferred
- LINEMENT
- SCARP EDGE
- H-8 OUTCROP, SAMPLE NUMBER
- 34005 ASSAY: OPT, ounces per ton Au, Ag
- 70 STRIKE AND DIP
- (25.90) PARTS PER BILLION GOLD, PARTS PER BILLION PLATINUM
- S-1 (59.02) PLACER CONCENTRATE TEST

**Abbreviations (ounces per ton gold, platinum)**

Bn	Bornite	Ba	Basalt
Pb	Galena	Dr	Diorite
Py	Pyrite	Q	Quartz
Po	Pyrrhotite	Hbl	Hornblende
Cp	Chalcopyrite	Ls	Limestone
Au	Gold	Arg	Argillite
		pBa	Porphyritic Basalt

NOTE (1) Base map prepared from uncontrolled 1:25,000 1986 airphotos.  
(2) Claim boundaries approximate.

**17,803**

**REDBIRD GOLD CORP.**

**PRELIMINARY**

**Geology and Sample Location**

**Hawk 5 to 8 Claims, Heffley Lake**

**KAMLOOPS MINING DIVISION**

TECHNICAL WORK BY: M.A. ROED

SCALE: 1" = 1000'

DRAWN BY: DBM

DATE: AUGUST 20, 1987

REVISIONS: SEPT. 9 / 88

FIGURE NO. 1