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Interview River tungsten and copper prospects.

by

S. G. Brown

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INTER - OFFICE MEMO

462002

GEOPEKO LIMITED

TO Supervising Geologist

Field Office, P.O. Box 120, Grassy, King Island, Tasmania 7256

FROM Field Geologist

Date 10th May, 1976

Re: Interview River Tungsten and Copper Prospects

These prospects which lie in the North Eastern portion of Tasmania, about 72km north of the Pieman Heads, are covered by E.L. 1/73.

During February 1976 Geopeko Limited was invited to inspect the workings by a Mr. Merv Munday, of Somerset Tasmania, the licence holder of the Exploration Licence.

These prospects were visited on the 18th - 19th of February 1976.

Access to the licence is by track from Marrawah to Temma and along the shore line to the mouth of the Interview River. Travel within the licence area is restricted to four wheel drive vehicles in dry weather. Ground conditions would be extremely wet during winter.

Except for a narrow strip of moderately heavy scrub in the back dune area adjacent to the coast, the majority of the licence is open button grass plains with strands of eucalypts along the lines of the creeks and on the better drained foothills of the Norfolk Range, in the east of the licence area.

The prospects consist of 2 main groups. The tungsten prospects lying about 2.5km from the coast within the Devonian granite, and the Copper prospects lying about 7.5km from the coast lying within Proterozoic sediments.

The Tungsten Prospects:-

These prospects consist of a series of irregularly disturbed mineralised quartz veins striking approximately 230° (magnetic), and dipping steeply east, lying entirely within the Devonian Granite.

Only one of the two main workings (Cooney's) was examined due to the present licence holder's lack of knowledge of the location of Kenny's prospect, the major prospect in the area.

Very little work has been carried out since 1943 when the area was examined by the Mines Department. Minor work was undertaken in the 1950's and also in the past few years by Renison Bell, whose grid is still visible over a large area.

The most recent work consists of a few small dozer cuts at Cooney's which exposed one small mineralised quartz vein, and dewatering, reputedly, of the shafts.

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At the time of inspection all shafts were waterfilled and only minor exposures were available for examination.

The mineralisation appears to be restricted to the narrow and discontinuous quartz veins with only low values being recorded in the wall rocks. The largest vein in the area (see photo) was only 35cm wide and appeared to pinch out over a distance of 2 metres. Fig.1.

The vein in the larger trench to the south of the main shaft is about 12cm wide and splits into two towards the southern limit of the exposure.

Attempts have been made, probably by Renison to intersect these veins along strike by digging a long, 200m, costean, but only quartz float and narrow barren veins are apparent in this exposure.

No other elements of interest were recorded in the Emmision Spectroscan carried out on the sample with the highest tungsten content and it would appear that this with lesser tin and molybdenum are the only minerals of economic significance present in the area.

On the present evidence it does not seen that these prospects have any economic potential since the quartz veins, although containing high tungsten values in some areas, are too irregular and too sparce to allow economic mining.

The Copper Prospects:-

These prospects occur in the Proterozoic siltstones and mudstones which form the foothills of the Norfolk Range. They consist of a series of mineralised quartz veins srtiking between 70° and 100° magnetic and dip steeply to the south.

These quartz veins appear to be emplaced along small shearzones. (T.S.) within the sediments which in the area of the Copper Reward have a strike of 127° and a dip of 47° NW. The major joint direction is 027°/59°E.

The quartz vein appears to be irregular and discontinuous. It is present both in banks of the Interview River and presumably in shaft A (waterfilled) 13m along strike but not in shaft B which lies a further 14.5m along strike and in which the sheer zone is well defined.

The sulphides are present within the narrow quartz vein (15cm) both as minor disseminated specks and as irregular pods. It is these discrete pods which give the high values recorded for this prospect. (Fig.2).

Samples taken from the sheared sediments and the undisturbed sediments did not give anomalous results.

Results of an Emission Spectroscan of the sulphides rich sample did not show any anomalous results other than Copper.

Although the other main prospects in this area were not located, examination of the other exposure of quartz veins in the area showed that these were confined to shear zones with similar trends to that at the Copper Reward.

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The whole group of prospects in this area appear to be a continuation of the Mt. Balfour mineral field, with the copper mineralisation occuring in a similar geological enviroment, although much more restricted in width than that at Mt. Balfour.

It would appear from the sparce outcrop available that these narrow mineralised quartz veins are discontinuous and occur in sheer zones widely spaced throughout this area. There would appear to be no economic potential.

With regard to both these prospects it is felt the field trip did not fulfil its full potential due to the fact that a large number of the prospects were not inspected. This was due to the fact that their location was unknown to the prospector.

Further the prospects seen were not able to be fully evaluated due to the fact that in all cases the main mining shafts at both sites were filled in and floodded.

Attached are the assay results, thinsection reports and photos.

S. Lynne Brown

S.G. BROWN.

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462005

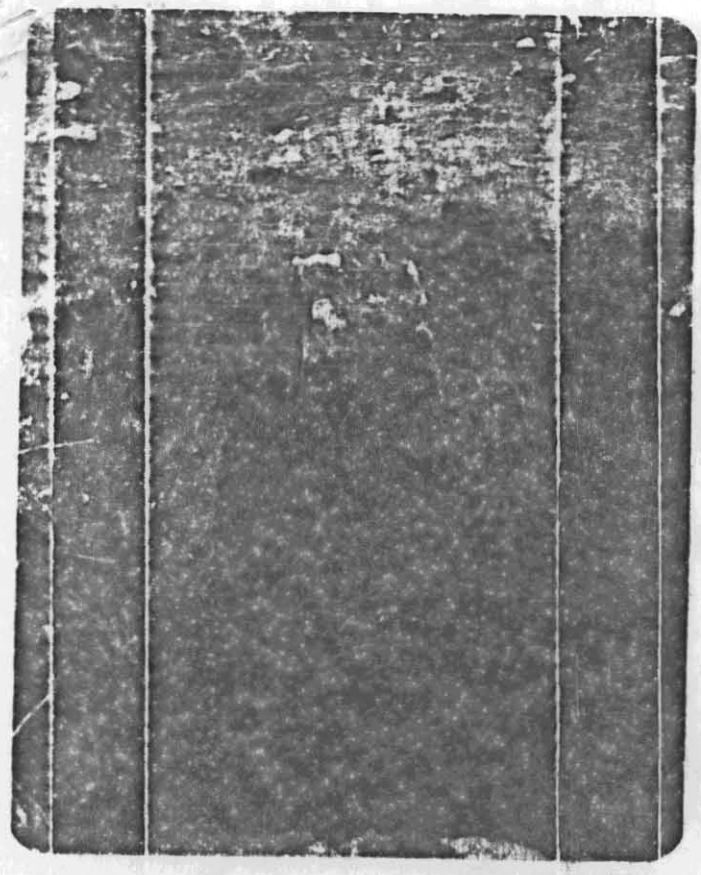

Photo 1. Shaft 'A' Tungsten prospect Interview River.

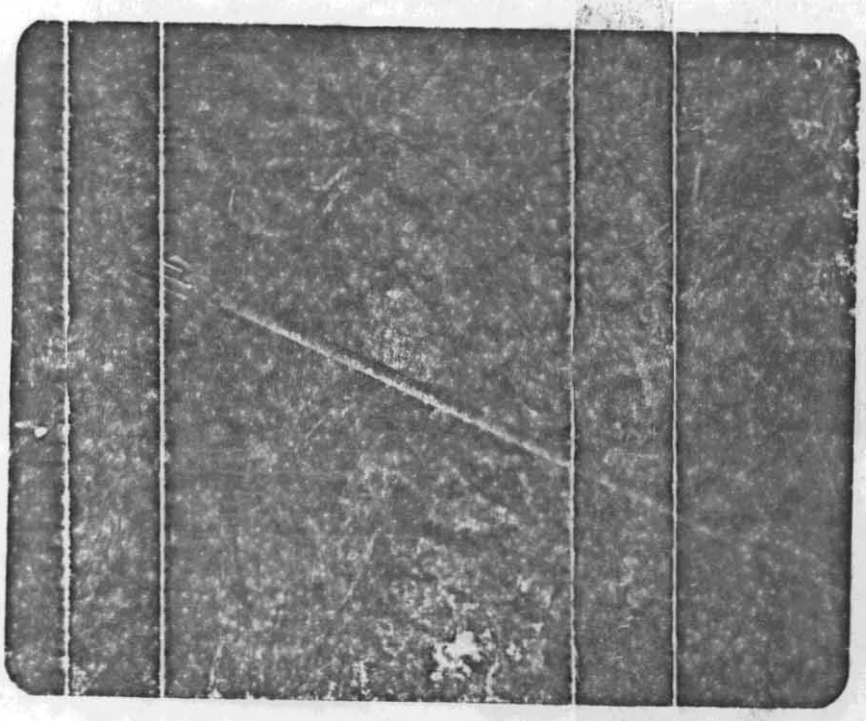

Photo 2. Outcrop of mineralized quartz vein, Copper prospect Interview River.

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462006

Ian R. Pontifex & Associates

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SOUTH AUSTRALIA

P.O. BOX 91, NORWOOD
SOUTH AUSTRALIA 5067

MINERALOGICAL REPORT NO. 1928

23rd March 1976

TO: Mr. S. Grieve Brown,
GeoPeko Ltd.,
P.O. Box 120,
Grassy,
KING ISLAND, Tasmania 7256

YOUR REFERENCE: Order No. KPL 67
Your letter of 11/3/76

MATERIAL & IDENTIFICATION: 1955 - copper ore
1956 - dyke rock

WORK REQUESTED: 1955 - mineragraphic description
1956 - petrological description

SAMPLES & SECTIONS: Returned to you

IAN R. PONTIFEX & ASSOCIATES

462007

1955: massive chalcopyrite, scattered inclusions of pyrite-marcasite, quartz gangue, and accessory pyrrhotite; incipient supergene alteration to covellite ± chalcocite

The sample consists predominantly of a massive granular aggregate of chalcopyrite. Irregular patches up to 2 mm across, of iron sulphide (25%) and quartz gangue (20%), are randomly disposed through the chalcopyrite.

The iron sulphide consists mainly of pyrite which commonly has incipiently leached cores, and within a given grain is generally gradational to patchy areas of marcasite. The pyrite-marcasite ratio is about 2 : 1.

Much smaller (0.1 mm) irregular grains of pyrrhotite (3-5%) are also randomly scattered as inclusions in chalcopyrite. A network of fine fractures through the chalcopyrite has facilitated supergene alteration to covellite ± accessory chalcocite. Minor irregular voids through the chalcopyrite are similarly lined by covellite ± chalcocite.

1956: quartz-sericite schist (metamorphically recrystallised argillaceous siltstone): minor quartz-chlorite chalcopyrite mineralisation along schistosity

This is a very fine, homogeneous schist composed essentially of sericite and silt to very fine sand size quartz. The schistosity and minor scattered patches of mineralisation cut at a very high angle across an original very fine bedding plane, indicated by laminae of relatively greater and lesser concentration of fine detrital quartz. The sericite is a greenschist facies metamorphic derivative of sedimentary argillaceous material originally mixed with the quartz. Minor (3-5%) extremely fine authigenic tourmaline is scattered.

The "mineralisation" noted above consists of rather irregular sinuous-like veins and thin lenses, sporadically distributed along the foliation planes. These consist mainly of quartz-chlorite and subordinate fine chalcopyrite (3-5%). The chalcopyrite shows marginal oxidation.

Accessory, very fine, subhedral, transparent crystals accompanying this mineralisation include tourmaline, clinozoisite.

This mineralisation no doubt, occurred during metamorphism. It conceivably represents components inherent to the original sediment, locally reconstituted, or alternatively, it may constitute material injected by metasomatic agencies.

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462009

A.C.S. Laboratories Pty. Ltd.
50 MARY STREET
UNLEY, S.A. 5061
P.O. BOX 3
UNLEY, S.A. 5061
PHONE: 272 2412
TELEX: AA82623

ADELAIDE SYDNEY

ANALYTICAL RESULTS

Samples from: GEOPEKO PTY LTD.

Area:

Samples of: ROCK CHIPS.

Preparation: CRUSHED & PULVERISED AS REQUIRED.

Sheet No.: 1.

Batch No.: A 1304. O/N 1166

Date: 18.3.76.

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Sample Description	Cu%	Pb%	Ag ppm	W ppm	Sn ppm	Notes
1894				240	30	granite S of trench
5				5.22%	0.10%	[illegible] granite N of trench
6				200	<20	granite base of shaft
7				210	<20	weathered wall rock
8				120	30	granite external N of trench
99	2.61	<0.01	12	<20		dyke.
1900	20.0	0.01	60	<20		sulphides
1952	0.55	<0.01	<2	<20		dyke
3	0.13	<0.01	<2	20		c/2
1954	0.02	<0.01	5	<20		mullock drift A.
Repeat and Check						
1896				230	<20	
1954	0.02	<0.01	5	<20		

ANALYTICAL METHODS: Cu, Pb, Ag by AAS Assay following HCl leach and HCl/HNO_3 leach in latter stages of 1g sample. W, Sn determined by XRF.

NATA

DISTRIBUTION: GEOPEKO PTY LTD.

Signed: [signature]

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ADELAIDE SYDNEY

462010

GEOCHEMICAL RESULTS

SEMI QUANTITATIVE EMISSION SPECTROSCOPY

All Values in ppm

A.C.S. Laboratories Pty. Ltd.
P.O. BOX 3
UNLEY, S.A. 5061
PHONE: 272 2412, 272 2518
TELEX: AA89623

Samples from: GEOPEKO PTY LTD.

Area:

Samples of: PULPS.

Sheet No.: 1.

Batch No.: A 1369. (Ex part A. 1304)

Date: 14.4.76.

GROUP		SAMPLE IDENTIFICATION								
		1895	1900							
ES 1	Be (1)	10	<1							
	Co (5)	30	10							
	Cr (20)	5000	100							
	Fe (2)	<2	<2							
	Mn (5)	10000	100							
	Mo (3)	3	10							
	Nb (20)	<20	<20							
	Ni (3)	50	100							
	Os (10)	<10	<10							
	Pd (10)	<10	<10							
	Pt (10)	<10	<10							
	Re (10)	<10	<10							
	V (10)	500	50							
	W (50)	>10000	<50							
	Ta (100)	300	<100							
	Th (100)	100	100							
ES 2	Ag (0.1)	2	50							
	As (50)	1000	2000							
	Au (3)	<3	<3							
	Bi (1)	30	50							
	Cd (3)	<3	<3							
	Cu (0.5)	200	>10000							
	Ge (1)	<1	<1							
	In (5)	<5	<5							
	Pb (1)	3000	1000							
	Sb (30)	<30	<30							
	Sn (1)	1000	1000							
	Tl (1)	<1	<1							
	Zn (20)	20	500							
ES 3	Ba (30)	2000	<30							
	Ca (20)	>10000	10000							
	Ce (300)	<300	<300							
	La (100)	<100	<100							
	Sc (50)	<50	<50							
	Sr (30)	<30	30							
	Ti (100)	3000	1000							
	Y (10)	<10	10							
	Zr (100)	100	300							
ES 4	Hg (30)	<30	<30							
	P (100)	1000	3000							
	Te (20)	<20	<20							
ES 5	K (5)									
	Li (1)									
	Na (50)									
	Cs (30)									
	Rb (10)									
ES 6	B (10)	1000	10							

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

Preparation:

Distribution: GEOPEKO PTY LTD.

Signed: [signature]

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462011

CENTRAL MINERALOGICAL SERVICES

Date 10th January 1973.

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
Piemar 1.
Quartz-Muscovite Tourmaline Rock with Scheelite.

Job No. CMS 73/1/5 Date Received: 4th January 1973.

Reference Letter 2nd January 1973.

Sample No. Pieman 1.

Nature of Sample: Hand-specimen.

DESCRIPTION **SECTION No.** 10679

a. Hand Specimen:

Quartz-muscovite rock with fluorescent grains (short-wave UV).

b. Microscopic:

Some fluorescent grains were hand-picked and checked optically. Scheelite was confirmed. The grains are scattered through the rock sometimes as crytals lining vugs, and are up to 0.5 mm in size.

The host rock is a typical greisen (or perhaps micropegmatite would be more accurate) consisting of fairly coarse (1-2mm), quite strongly stressed quartz, coarse shreds and books of muscovite, also stressed and bent.

Rather fragmentary crystals of distinctive yellow-amber tourmaline occur (these appear a resinous dark-brown in hand-specimen); they are fractured and stressed. The tourmaline is probably dravite.

The scheelite may have been introduced at a late stage, during or after the stress phase, because of its occurrence in vugs or cavities. It has a white to pale yellow colour and probably contains minor Mo.

The rock is preferably regarded as a rock of pegmatitic - pneumatolytic origin because there is no evidence of pre-existing feldspar (as there would be in say a greisenised granite).

H.W. Fander, M.Sc.

462012

CENTRAL MINERALOGICAL SERVICES

Date 11th January, 1973.

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
Pieman 2.
Quartz-Tourmaline- Scheelite. Wolframite Vein.

Job No. CMS 73/1/5 Date Received: 4thJanuary, 1973.

Reference Letter 2nd January, 1973.

Sample No. Pieman 2.

Nature of Sample: Hand-specimen.

DESCRIPTION **SECTION No.** 10680.

a. Hand Specimen:

Coarsely-crystalline quartz - ? scheelite rock with ? wolframite.

b. Microscopic:

The specimen is coarsely-crystalline, presumably vein-material, and all the components are stressed.

Scheelite is a very prominent constituent, making up about 20% of the thin-section and occurring as euhedral stressed crystals up to 8 mm in size.

Wolframite is intergrown with scheelite, as patches up to 4 mm across. Its identity was confirmed by XRD (the quickest, most positive method).

Quartz is the main constituent, as coarse, quite strongly stressed patches of typical vein-quartz.

Tourmaline crystals are quite abundant, also as zoned individuals ranging from pale yellow to amber and blue. This tourmaline is essentially a dravite (mg-tourmaline) and is distinctive. It may have genetic significance in being associated with scheelite. If this is substantiated, this could be used as a prospecting or indicator mineral.

H.W. Fander, M.Sc.

CENTRAL MINERALOGICAL SERVICES

Date 11th January, 1973.

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
Pieman 3
Na-K Granite/microgranite, greisenised. Wolframite/Scheelite.

Job No. CMS 73/1/5 Date Received: 4th January, 1973.

Reference Letter 2nd January, 1973.

Sample No. Pieman 3.

Nature of Sample: Dump Material.

DESCRIPTION **SECTION No.** 10681.

a. Hand Specimen:

Fine and coarse quartz/muscovite rock. Slugs of wolframite (with scheelite) up to 20 in size.

b. Microscopic:

Several larger fragments were selected for thin-sectioning. The material was also examined under the stereobinocular microscope.

One of the fragments is massive vein quartz with small inclusions of scheelite/wolframite (generally intergrown). Two other fragments are petrologically similar, and obviously closely related rocks. They differ slightly in fabric and degree of pneumatolysation.

These rocks are microgranites and porphyritic microgranites, verging on granites in terms of fabric and grainsize. They consist of quartz, orthoclase and albite (the feldspar proportions are variable), with accessory chloritised biotite. Pneumatolytic muscovite and dravite (yellow) tourmaline have been introduced as replacive phases. Traces of a dark, semi-opaque mineral also occur; this is probably anatase or brookite, but may be cassiterite.

Evidently these were the host-rocks for the vein-type wolframite-scheelite mineralisation. Scheelite/wolframite ratios are difficult to determine because of sampling difficulties in this unsized material, but it appears that wolframite is much more abundant than scheelite. The two minerals appear to be closely related and usually intergrown.

Assays for Sn and WO_3 are recommended.

H.W. Fander, M.Sc.

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462014

CENTRAL MINERALOGICAL SERVICES

Date 11th January, 1973.

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
MM 15
Cassiterite, Scheelite, Wolframite.

Job No. CMS 73/1/5 Date Received: 4th January, 1973.

Reference Letter 2nd January, 1973.

Sample No. MM 15.

Nature of Sample: Stream Concentrate.

DESCRIPTION **SECTION No.** 10682.

a. Hand Specimen:

Grains of quartz, scheelite and other minerals.

b. Microscopic:

A thin-section was prepared of this material, and fragments were also examined in immersion oils.

A large proportion of the sample, probably 60% or more (by weight) consists of cleavage-fragments and crystals of cassiterite, both free and composite with quartz. The cassiterite is a fairly pale, cloudy, resinous brown variety which lacks the usual "splendent" appearance. Grainsizes range from 0.1 mm to several millimetres; most are 1-2 mm in size, i.e., quite coarse. They contain inclusions of muscovite quartz and dravite, linking them genetically with the pneumatolytic/greisening phase. It is thought that the source may be quite close by.

Small amounts of wolframite and scheelite are also present, but as relatively small grains only (generally below 3 mm); the two minerals are sometimes intergrown. The scheelite shows some alteration to an amorphous white substance. They occur in about equal amounts.

Other minerals include quartz and yellow tourmaline; the tourmaline seems to be a constant associate of this mineralisation.

H.W. Fander, M.Sc.

H.W. Fander, M.Sc.

462015

CENTRAL MINERALOGICAL SERVICES

Date 11th January, 1973

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
MM 16
Cassiterite, Scheelite, Wolframite.

Job No. CMS 73/1/5 Date Received: 4th January, 1973.

Reference Letter 2nd January, 1973.

Sample No. MM 16.

Nature of Sample: Stream Concentrate.

DESCRIPTION **SECTION No.** 10683.

a. *Hand Specimen:*

Similar to MM 16.

b. Microscopic:

This sample is interesting in relation to MM 15, as it shows certain trends which may be useful.

Cassiterite is finer, more rounded and less abundant than in MM 15. Grainsizes range from 0.1 mm to 2 mm, and average 0.3 - 0.5 mm (cp MM 15). The grains are commonly subrounded, and far fewer composites with quartz occur. It is thought to be further from its source.

Scheelite and wolframite are much more abundant; the scheelite is altered but occurs as cleavage-fragments, as does the wolframite. It is thought that (especially in view of the poor abrasion-resistance of the scheelite), the source is fairly close. Wolframite and scheelite each comprise 1-2% of the sample. Cassiterite comprises perhaps 35-40% of the sample.

The remainder consists of quartz, yellow tourmaline and minor muscovite. Again, the presence of yellow tourmaline may be significant.

H.W. Fander, M.Sc.