



Energy, Mines and  
Resources Canada

Geological Survey  
of Canada Sector

601 Booth Street  
Ottawa, Ontario  
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Énergie, Mines et  
Ressources Canada

Secteur de la Commission  
géologique du Canada

802696  
Tantalus  
104B/9W

9 May 1991

P. Lougheed  
Senior Geologist  
Prime Explorations  
11th Floor, Box 10  
808 West Hastings Street  
Vancouver, B.C. V6C 2X4

Dear Peter:

Don Harris has put together this short mineralogical report on samples that we collected last summer from the Tantalus Property. You might notice that there are few interesting unusual minerals (e.g. sartorite) and indications of both As and Sb suggesting that these occurrences might have some affinities with Eskay Creek.

Yours sincerely,

R.V. Kirkham

RVK/lo

Encl.

cc: S.B. Ballantyne  
J. Chapman  
D.C. Harris  
J.R. Henderson  
M.N. Henderson

Mineralogical examination of samples collected by R. Kirkham, Tantalus Property, Treaty Creek.

OHSA 545 - Northwest side Treaty Glacier.

Sample is pyrite-rich with minor rutile. A distinct flow texture is present. Orpiment was identified by X-ray diffraction from a gash vein.

OHSA 546 - Same locality as 545.

Sample contains major pyrite with minor rutile and a few coarse grains of a sulfosalt known as sartorite  $Pb_{1.0}(As_{1.2}Sb_{0.8})S_{4.0}$ . X-ray diffraction also identified some kaolinite and natroalunite.

KQ 90-183A - Zone F. North of Atkins Glacier, South of icefield.

Minerals identified consist of major pyrite, galena, sphalerite, tetrahedrite and trace amounts of chalcopyrite, arsenopyrite, bournonite, covellite and carbonaceous matter. Some pyrite have a framboidal texture. Arsenopyrite occurs as rims on pyrite and intergrown with pyrite. Carbonate matrix.

Carbonate CaO 2.6, MgO 1.1, FeO 18.3, MnO 33.7.

Bournonite Cu 12.6, Pb 39.8, Sb 25.3, S 19.9.

Sphalerite Zn 62.7, Fe 3.4, Cd 0.3, S 33.4.

Tetrahedrite Cu 24.8, Ag 17.4, Fe 2.5, Zn 4.0, Sb 27.1, S 22.9.

KQ 90-183B - Zone F.

Minerals identified consist of major galena with minor sphalerite, pyrite, tetrahedrite and traces of arsenopyrite, chalcopyrite, bournonite with secondary anglesite and covellite. Several cellular carbonaceous matter. Some framboidal pyrite.

Sphalerite Zn 65.3, Fe 0.8, Cd 0.5, S 33.8

Tetrahedrite Cu 26.2, Ag 16.0, Fe 4.1, Zn 2.4, Sb 27.5, S 23.4.

Bournonite Cu 13.0, Pb 40.5, Sb 24.7, S 19.8.

KQ 90-183D - Zone D.

Minerals identified consist of framboidal to colloform zoned pyrite, fine euhedral arsenopyrite, coarse bournonite and boulangerite intergrown with coarse galena with minor sphalerite. Carbonate in matrix.

Carbonate CaO 1.2, MgO 1.0, FeO 20.6, MnO 33.2.

Sphalerite Zn 61.7, Fe 2.7, Cd 0.8, S 33.0.

Boulangerite Pb 53.3, Sb 26.0, S 19.2.

Bournonite Cu 12.6, Pb 40.6, Sb 24.7, S 19.8.

KQ 90-183E. North Side Atkins Glacier. Zone C.

Minerals identified consist of coarse stibnite with minor fine grained euhedral pyrite and traces of arsenopyrite.

MINERALOGY LABORATORY

File Number

Sample Examination Report

M 91-30

Submitted by: R. Kirkham Date submitted: Nov. 1990

Title of study: Treaty Creek - Mitchell - Sulphur Project No. 700059

Sample description: 6 P.S.

Locality:

Information and data required:

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Results:

*Attached.*

Signed: \_\_\_\_\_ Date: May 91 Approved: \_\_\_\_\_  
Mineralogy Section Section Head

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Mineralogical examination of samples collected by R. Kirkham, Tantalus Property, Treaty Creek.

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Bournonite Cu 12.6, Pb 39.8, Sb 25.3, S 19.9.

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Tetrahedrite Cu 24.8, Ag 17.4, Fe 2.5, Zn 4.0, Sb 27.1, S 22.9.

**KQ 90-183B - Zone F.**

Minerals identified consist of major galena with minor sphalerite, pyrite, tetrahedrite and traces of arsenopyrite, chalcopyrite, bournonite with secondary anglesite and covellite. Several cellular carbonaceous matter. Some framboidal pyrite.

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Tetrahedrite Cu 26.2, Ag 16.0, Fe 4.1, Zn 2.4, Sb 27.5, S 23.4.

Bournonite Cu 13.0, Pb 40.5, Sb 24.7, S 19.8.

**KQ 90-183D - Zone D.**

Minerals identified consist of framboidal to colloform zoned pyrite, fine euhedral arsenopyrite, coarse bournonite and boulangerite intergrown with coarse galena with minor sphalerite. Carbonate in matrix.

Carbonate CaO 1.2, MgO 1.0, FeO 20.6, MnO 33.2.

Sphalerite Zn 61.7, Fe 2.7, Cd 0.8, S 33.0.

Boulangerite Pb 53.3, Sb 26.0, S 19.2.

Bournonite Cu 12.6, Pb 40.6, Sb 24.7, S 19.8.

**KQ 90-183E. North Side Atkins Glacier. Zone C.**

Minerals identified consist of coarse stibnite with minor fine grained euhedral pyrite and traces of arsenopyrite.

Sample Examination ReportM 90-21(9)Submitted by: R.V. Kirkham Date submitted: Dec. 12/90Title of study: Sulphurets Project No. 700059Sample description: KQ-90-180B  
- sil py rhyoliteLocality: Treaty Glacier (top of ridge W. of toe)Information and data required:  
X-ray identification fine-grained minerals in cavities  
1) orange mineral (orpyment?)  
2) colourless to white (?) (f.g. xtl)

## Results:

Orange = Mica Gp. + Pyrite + Quartz X-74056Colourless = Quartz X-74055Signed: Andrew Roberts Date: 12/12/90 Approved: \_\_\_\_\_

Mineralogy Section

Section Head

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Sample Examination ReportM 90-21(8)Submitted by: R.V. Kirkham Date submitted: Nov. 26/90Title of study: Sulphuret, B.C. Project No. 700059Sample description: ONSA 545Locality: Tantalus Property, Treaty Glacier

Information and data required:

X-ray identification orange mineral (orpiment?)  
in gash vein.

Results:

orange = Orpiment X-74031Signed: Andrew C. Pollock Date: 26/11/90 Approved: \_\_\_\_\_

Mineralogy Section

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## Sample Examination Report

M 90-21(7)Submitted by: R. V. Kirsham Date submitted: Nov. 21/90Title of study: Sulphurets, B. C. Project No. 700059Sample description: veins & sulphide zonesLocality: Tantalus Property - Treaty & Atkins glacier areas

Information and data required:

KQ-90-194 - X-ray identification grey metallic mineral  
 195 - " " white, nonmetallic needle crystals  
 196 - and " " translucent yellow crystals (native S?)  
 " " " semi-metallic grey material  
 (on projection of one saw line)

Results:

KQ-90-194 grey metallic = Djurleite X-74024 ( $\text{Cu}_{31}\text{S}_{16}$ )  
 KQ-90-195 white needles = Cerussite X-74023  
 KQ-90-196 yell. xls. = Sulfur X-74025  
 KQ-90-196 grey = Sulfur X-74026

Signed: Andrew C. Probert Date: 21/11/90 Approved: \_\_\_\_\_

Mineralogy Section

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## Sample Examination Report

M 90-21(7)Submitted by: R.V. Kirrham Date submitted: Nov. 21/90Title of study: Sulphurets, B.C. Project No. 700059Sample description: veins & sulphide zonesLocality: Tantalus Property - Treaty & Atkins glacier areas

## Information and data required:

KQ-90-194 - X-ray identification grey metallic mineral  
 195 - " " white, nonmetallic needle crystals  
 196 - and " " translucent yellow crystals (native S?)  
 " " " semi-metallic grey material  
 (on projection of one saw line)

## Results:

KQ-90-194 grey metallic = Djurleite X-74024 (Cu<sub>31</sub>S<sub>16</sub>)  
 KQ-90-195 white needles = Cerussite X-74023  
 KQ-90-196 yell. xls. = Sulfur X-74025  
 KQ-90-196 grey = Sulfur X-74026

Signed: Andrew C. Polert Date: 21/11/90 Approved: \_\_\_\_\_

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Sample Examination Report

M 89-43(9)

Submitted by: Rod Kirkham Date submitted: Dec 9/89Title of study: Treaty Glacier, B.C. Project No. 700059

## Sample description:

133A - abundant quartz & pyrite but main  
 interest is to try to identify alunite  
 as part of advanced argillic alteration  
 suite

## Locality:

## Information and data required:

KQ-89-122E - green nonmetallic - sericite?  
 KQ-89-133A - yellow mineral - native sulphur?  
 - grey beside it - alunite?

## Results:

green = Mica Gp. X-73418  
 yellow = Dickite X-73420  
 grey & soft (in veins) = Alunite Gp. (Alunite structure)  
 X-73419 \*

\* need electron microprobe quantitative chemistry  
 to "pigeon-hole" the phase properly.

Signed: Andrew Roberts Date: 11/12/89 Approved: \_\_\_\_\_

Mineralogy Section

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Sample Examination Report

M 90-21(c)

Submitted by: R.V. Kirkham Date submitted: Oct. 26/90

Title of study: Sulphurets, B.C. Project No. 700059

Sample description: ~~KA~~ OHSA 546-1  
layered f.g. pyrite, quartz ( $\pm$  feldspar??) with yellow

Locality: Trente Glacien natroalunite Tantalus Prospects

Information and data required: X-ray identification of soft grey  
metallic mineral in minute gash veins (galena?)

Results:

grey metallic = Sartorite ( $PbAs_2S_4$ ) X-73973

Signed: Andrew Roberts Date: 26/10/90 Approved: \_\_\_\_\_

Mineralogy Section

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Sample Examination Report

M 90-21(4)

Submitted by: R.V. Kirkham Date submitted: Oct. 24/90Title of study: Sulphurets, B.C. Project No. 700059Sample description: KQ-90-183ELocality: Atkins Glacier (N. side) Tantalus propertyInformation and data required: X-ray identification of 2  
metallic grey minerals (one hard & one soft)  
→ stibnite and?X-rayed  
previously

## Results:

hard metallic = Pyrite X-73949  
soft metallic = Stibnite X-73950Signed: Andrew Roberts Date: 25/10/90 Approved: \_\_\_\_\_

Mineralogy Section

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Sample Examination Report

M 90-21(4)

Submitted by: R.V. Kirkham Date submitted: Oct. 24/90

Title of study: Sulphurets, B.C. Project No. 700059

Sample description: KQ-90-183E

Locality: Atkins Glacier (N. side) Tantalus propert,

Information and data required: X-ray identification of 2  
metallic grey minerals (one hard & one soft)

X-rayed  
previously

→ stibnite and ?

Results:

hard metallic = Pyrite X-73949

soft metallic = Stibnite X-73950

Signed: Andrew Roberts Date: 25/10/90 Approved: \_\_\_\_\_

Mineralogy Section

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Submitted by: Rod Kirkham Date submitted: Dec 9/89Title of study: Treaty Glacier, B.C. Project No. 700059

## Sample description:

## Locality:

## Information and data required:

133A - abundant quartz & pyrite but main interest is to try to identify alunite as part of advanced argillic alteration suite

KQ-89-122E - green nonmetallic - sericite?

KQ-89-133A - yellow mineral - native sulphur? - grey beside it - alunite?

## Results:

green = Mica Gp. X-73418

yellow = Dickite X-73420

grey & soft (in veins) = Alunite Gp. (Alunite structure) X-73419 \*

\* need electron microprobe quantitative chemistry to "pigeon-hole" the phase properly.

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