

PROPERTY FILE

February 26, 1968.

MEMO - Mr. D.C. Douglas

Thank you for your letter of February 19, 1968. The report on Quadra Island is excellent, and I have no doubts whatsoever about your conclusions. Until we are contacted further by Mr. Foort, we should let the vanadium occurrence lie.

Nobody seems to know very much about the Utah find, but the "Examiner" report is a good summary of the available information.

Probably due to the arrival of the scintillometer, your enclosures did not include E.F.P.O. 907-G. No doubt this will turn up in due course. Oil changes and grease jobs should be put on the credit card whenever possible.

H.G. RUSHTON,
Chief Geologist,
Mining Division.

HGR:LS

D.C. Douglas
2850 Fandell Street
Nanaimo B.C.

February 4th, 1968

Mining Division,
Canadian Pacific Oil & Gas Ltd.,
205 Ninth Avenue S.E.
Calgary, Alberta.

Attention: Mr. H.G. Rushton

Dear Glen;

Further to my letter of 3 Feb, and in reply to yours of 30 Jan.

Spent Tuesday to Friday inclusive in transit to, and on Quadra Island. Vehicle ferry from Campbell River to Quadra takes about 15 minutes, with roughly hourly service between 7.30 AM. and 11.30 PM. Hotel at Heriot Bay is decent though you cook your breakfast. Lunch & dinner are served.

So far I have had no reading above 15 cps, with most about 6 to 10. Two major showings in the search area gave no kicks. Ground was snow covered and cuts were snow filled.

Refer to BCMM - 1953, Fig 10 at page A 164. I have, I think, identified Pomeroy No. 3 and 1. The others I have not found as I did not have this book with me. Pomeroy 2 is $1\frac{1}{2}$ miles from end of Gowlland harbour and may be the carnotite locality. On page K 272 of the 1918 report there is a claim plan which will help in identification of workings. *(Copper Mountain Group)*

I operate with instrument on continuously relying on any change in audio signal to avoid missing anything. Snow should be gone Monday when I hope to return, there should be no difficulty in finding the other showings. ~~the~~ Area is about 50% outcrop, nothing seen but volcanics.

Will discuss instrument with you when you visit. D batteries for instance cost the same as C and last three times as long, I dont mind the added weight. Probe cable terminals are vulnerable. One connection broken on Quadra, this repaired.

May not get away tomorrow as new speedometer cable must come from Vancouver. Last Monday I was held up for a radiator hose.

1953, A 165; 1966, 71.

Grade for 1966 over 3 1/2% Cu (1,748 tons ore)
"Copper Road" worth looking up in reports. This is the only operating property, shipping Bornite each year. Manager lives in Quadra Island Hotel.

"Lucky Jim", on Intrusive/Limestone contact - 1930 page 306, gave no kick. Shipped about 1910. Worth a visit if only to see steam driven compressor with 12ft, diameter fly-wheel

....2.

(Geological Survey Summary Report)

1955 Part A ?

174 tons at 4.5% Cu²⁺
shipped 1917

Gunning/Ellsworth at page 55A 11, displayed interest in information at Open Bay (Sicker? DCD). I tried to drive there also to see Santana claims but road out, will walk in later. Man who lives at end of passable road volunteered considerable information. Claims to have assay certificate (2% Cu. and 1% Va.) from a property he knows of which was worked for gold about 50 years ago and has Cu. over a large area. Since he has not staked he will not disclose location but it is within one mile of tidewater apparently nearby on the mainland. Informant is a Gyppo logger and I think highly intelligent, has promised to find assay certificate which I want to see and copy. In our conversation he was the first user of the word "Vanadium".

Re. Utah Construction. Bob Nicholson knows little but understands there are title problems, that it is large and feasibility study may be close. Manager of "Copper Road" thinks it is a porphyry property but has no information. I will trace claim map here tomorrow and follow any leads I can get. For reasons I do not care to put on paper, it is improbable that there is much information to be had in Campbell River.


Bob Nicholson phoned re the native Cu. find at Cameron River, saying Mr. Matthews had suggested he could visit the showing when I go there. I told him elevation could delay visit to May because of snow.

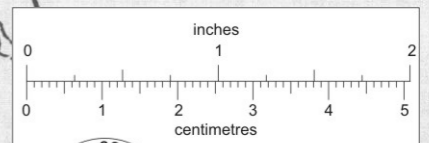
No urgency on access to logging roads. Will have a list when you visit.

Should your visit be for this week, you could get me by phone at the Quadra Island Hotel. 6.30 PM, your time, is dinner time - beside a phone.

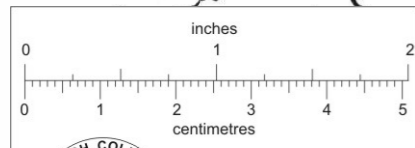
If Quadra is negative, I should so establish this week. If otherwise I should be able show you something on the forthcoming visit.

Yours very truly,

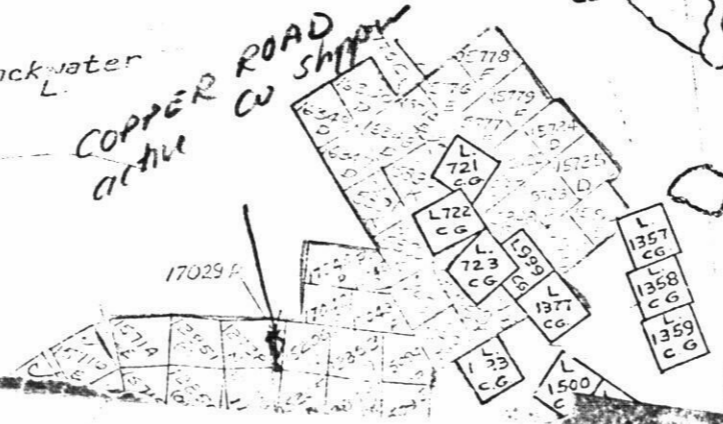

D.C. Douglas



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.



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SANTANA M-8

L 1350 C.G.	L 1351 C.G.
L 1346 C.G.	L 1347 C.G.
L 1340 C.G.	L 1341 C.G.
L 1343 C.G.	L 1349 C.G.
L 1344 C.G.	L 1345 C.G.

92K/3E

DEPARTMENT OF MINES



CANADA

GEOLOGICAL SURVEY

BUREAU OF MINES Office of Prov. Mineralogist Rec'd JUN 13 1922 Ans'd <u>NA</u>

Ottawa, June 7th, 1922.

Dr. W. F. Robertson,
Provincial Mineralogist,
Victoria, B. C.

PROPERTY FILE

Dear Sir,-

I wish to thank you for your kind interest and assistance in sending me samples from the claims of Mr. Neave, and from the property of The Valdez Island Copper Company. I also got into touch with Mr. Neave and he sent me several pounds of specimens, which, however, he said did not represent his best material. None of the specimens I have had so far from either yourself or Mr. Neave show any indications of the presence of radium in commercial quantity. Some of them are very slightly radioactive, but are quite worthless from the commercial standpoint.

I agree with you that it is quite probable that the slight radioactivity shown by Mr. Neave's rocks may be due to radium precipitated from springs by sulphates generated from oxidizing sulphides in the rock.

Regarding the copper ore, I think it is possible they might get pitchblende or other uranium minerals in an ore of that kind, though the sample I have shows none.

As to the report by Mr. Robert Clark of McGill on the mineral collected by Mr. J.F. Campbell, it appears that he went to a great deal of trouble in determining the radium by the emanation method and did not make any tests for uranium. According to his tests specimen No. 1 is equal to high grade carnotite ore, while the others are too low to be of commercial value. It would be interesting to look into this locality if the opportunity occurs.

-2-

Ottawa, June 7th, 1922

Dr. W. F. Robertson.

Again thanking you for your interest, and hoping
you will keep me posted on anything of this sort that turns
up,

I am,

Yours truly,

A. W. Ellsworth

A.

APR 18 1922

this claim, in an endeavour to get more Capital, to further work his property.

I have not now, any samples of his ore, but if I can get any, it will be sent you.
Ottawa, April 24th, 1922.

I do not know of anything further at present, but I will see J. D. MacKenzie, and see if we can scare up anything more, to justify a trip out here.
Provincial Mineralogist,
Department of Mines,
Victoria, B. C.

Dear Mr. Robertson - I am,

Could you tell me anything
Yours truly,

regarding the occurrences of radium minerals on Vancouver and Vasson Islands recently made by F. H. Heave as reported in Provincial Mineralogist. As I have for the last year been investigating radium mineral occurrences in Ontario I am specially interested in this reported discovery in British Columbia. I would be glad to have your opinion on this occurrence and if possible would like to get into touch with Mr. Heave and get some samples. His address was not mentioned in the newspaper report.

WER/P

Thanking you in advance, I am,

Yours very truly,

W. C. MacKenzie

... contained 1.67 x 10⁻¹⁰ grams of Radium ...
made up by myself two years previously and has probably not deteriorated in the interval as it gave the same rate of 10-12 in the electroscope as it did when made up.

The electroscopes and of glass selected inside and of 750 cc. capacity. The gold leaf was in fair condition; it was calibrated over a considerable part of the scale and an interval of seven divisions was selected over which the rate of leak was almost uniform. All observations were taken over this interval. The work connection of the electroscopes was kept in deflection of the gold leaf being effected by placing an artificial light and used for illumination; it was reflected into the electroscopes from a small mirror to avoid heating effects. The heat

Dr. H. V. Ellsworth

DEPARTMENT OF MINES



CANADA

GEOLOGICAL SURVEY

BUREAU OF MINES
Office of Prov. Mineralogist

Rec'd APR 18 1922

Ans'd _____

Ottawa, April 12th, 1922.

Wm. Fleet Robertson, Esq.,
Provincial Mineralogist,
Department of Mines,
Victoria, B. C.

Dear Mr. Robertson:-

Could you tell me anything regarding the discoveries of radium minerals on Vancouver and Valdez Islands recently made by H. E. Neave as reported in Toronto- Mail and Empire, March 6, 1922? As I have for the last year been investigating radium mineral occurrences in Ontario I am specially interested in this reported discovery in British Columbia. I would be glad to have your opinion on this occurrence and if possible would like to get into touch with Mr. Neave and get some samples. His address was not mentioned in the newspaper report.

Thanking you in advance, I am,

Yours very truly,

H. V. Ellsworth

*1320 University St
Esq. Ellsworth*

EXAMINATION OF A MINERAL SUPPOSED TO CONTAIN RADIUM AND HELIUM.

When received this mineral was in lumps of a loose texture and apparently had a sedimentary origin; two of the pieces contained a quantity of what was apparently clay, the others were yellow in colour and under the glass were seen to contain a little pyrites, and a good many small crystals of silica. In general appearance there were three varieties present and one of each of these was tasted. They proved to be very unequal indeed in their RADIUM content. This was determined by the emanation method.

Four samples were prepared for a test by the emanation method. The details of these are given in the annexed table. The first sample was of a large lump and was quite yellow in colour; on roasting, a quantity of sulphur dioxide was given off, and the material burned a bright red in colour. The second sample was dark, almost black in colour. The third had an appearance like a lump of clay and the fourth was similar but somewhat darker in colour.

Each specimen was first roasted at a low temperature to drive off the sulphur, and was then fused in a crucible over a blast-lamp with 5 times its weight of an equimolecular mixture of K_2CO_3 and Na_2CO_3 . The melt was removed by boiling the crucible up with water. Hydrochloric acid was then added with the result that nothing remained after boiling for several hours but a precipitate of silica. The solution was evaporated to dryness, ignited at a low temperature (200°C. app) dissolved in water, the precipitated silica filtered off and washed. The filtrate and washings were then mixed and either boiled down or made up to 350 cc. transferred to a round bottomed flask and sealed up. The precipitated silica might possibly have carried down radium. It was therefore ignited after burning off the filter with the mixed carbonates and the resulting solution was sealed up as well.

All glassware used was new and therefore presumably had never contained Radium. The hydrochloric acid, sodium carbonate and potassium carbonate used, were tested by neutralizing some of the carbonates with the acid and testing the solution.

The amount of RADIUM revealed was too small to measure with certainty, being of the order of 10-13 grams per gram. No connection therefore was made on account of the radio activity of the reagents used.

When the solutions were first prepared they were boiled for ten minutes and the leading out tubes sealed off with the blow pipe. On preparing a test for the emanation content, the tips of the tube was scribed with a glass knife and broken off, air rushed in to the flask preventing the loss of emanation by diffusion and the flask was immediately connected to a rubber tube leading to the electroscope. The flask was then boiled and the contained air and emanation collected over nearly boiling water (90°C).

After standing for ten minutes it was let into the electroscope. The flask was boiled until the steam completely condensed which took about ten minutes. All the flasks in this respect were treated in exactly the same manner. The gasses were dried over KOH and P_2O_5 before entering the electroscope.

The standard solution employed contained 1.57×10^{-9} grams of RADIUM as RADIUM bromide, and considerable free hydrochloric acid. It was made up by myself two years previously and has probably not deteriorated in the interval as it gave the same rate of leak in the electroscope as it did when made up.

The Electroscope was of glass silvered inside and of 750 cc. capacity. The gold leaf was in fair condition; it was calibrated over a considerable part of the scale and an interval of seven divisions was selected over which the rate of leak was almost uniform. All observations were taken over this interval. The earth connection of the silvering was good; no deflection of the gold leaf being caused by bringing up an electrophorus. The charging rod was always set in the same position. Artificial light was used for illumination; it was reflected into the electroscope from a small mirror to avoid heating effects. The heat

radiated from the lamp was also screened off. The position of the microscope was unaltered during all the examinations. The electroscopes was always charged to the same potential. Similar experiments were conducted by Woods (1) which showed that in this case the action of the water...

EXAMINATION FOR HELIUM

Owing to the very nature of this mineral and the moderate quantity of RADIUM it contains, as large and as representative a quantity as possible was taken, it weighed 39.42 grams. This was boiled for two weeks with a solution of sulphuric acid of 12.5% strength. The gas evolved was pumped off as completely as possible by the TEEPLER pump, and transferred to a bulb containing coconut charcoal connected to a spectrum tube.

On cooling the bulb the pressure fell very low and no trace of helium spectrum could be seen. The experiment was repeated the next morning and the line 5876 A.U. was faintly visible. It is therefore to be concluded that HELIUM is present, but only in a very small quantity.

An upper limit to the amount of HELIUM may be arrived at approximately as follows: The volume of the apparatus, including bulb, filling syphon, spark tube etc. is about 120 cc. Were the gas in the tube pure helium the discharge might refuse to pass when the pressure was as much as 0.1 mm., which would correspond to a volume of helium at ordinary pressure of $\frac{120}{760} \times 1$ or 0.016 cc. or 0.0004 cc. per gram of mineral.

As there was hydrogen present the pressure could hardly have been as much as this.

It is of course possible that the boiling with sulphuric acid did not liberate all the helium, but most observers have found that the quantity liberated by this means is generally greater than by any other process, such as fusing with potassium bisulphate. The residue in the flask was thoroughly disintegrated and this fact together with the long period during which it was boiled would rather indicate that most of it had been liberated.

A selection of the helium contents of various rocks is given in table C.

SUMMARY:

22.60 1.87 x 10-9

From the results in the attached table it is evident that the sample submitted contains material of very variable radium content. One specimen is quite worthless and another approaches an ordinary carnotite. The others are not quite so good, but they are away above the ordinary rocks in their radium content. The mineral contains some rather hard particles and it would appear that the number of them is related to the amount of radium present, as the two good specimens contained many more of them than the poor one. I did not have enough material left to separate these out and see whether or not they were of higher radium content than the rest, but this I think should be done, as the mineral might be very much concentrated by such mechanical separation. They might if they turned out to be radioactive to a higher degree than the rest, be separated on a table, or by flotation.

The information sent with the sample indicates that only traces of radium were present. The amount of radium in the better samples is such that the uranium content should be very appreciable. In this respect the mineral is a peculiar ore. The radium in equilibrium with one gram of uranium is 3.4×10^{-7} grams (1) which would give the following percentages of uranium in the various specimens:

Specimen No.1	5.50%
No.2	.003%
No.3	.104%
No.4	.014%

It is possible that the mineral may have had radium deposited in it by the action of water. It contains sulphur so that under the action of the atmospheric oxygen H₂SO₄ might be formed in small quantity. This

would extract almost all the radium from a water seeping through the rock if there were anything such as barium salt which would precipitate at the same time and serve to carry down the radium. Similar specimens have been examined by Danne (2) McCoy (3) showed that in this case the large values of the Ra; Ur was due to the action of the water, which deposited radium from an uraniferous rock in the neighbourhood.

Danne found his specimens to vary greatly in their uranium content. His minerals he says were actually worked for their radium.

The poorer specimens do not call for much comment, they contain only a very small quantity of radium, I have been unable to find in the literature any account of a similar mineral being profitably extracted. These specimens if they contain an equilibrium quantity of uranium should analyse 0.01% UC_2 .

Of course if this mineral has had its radium deposited from solution, which can be determined by making accurate analyses for the uranium, there must be some source of the radium and that within a measurable distance. Should the uranium content be too small, then such a deposit should be looked for. I cannot make these analyses myself as I have not the material available.

From the property of The Valdez Island Copper Company, I also got into touch with Mr. Neave and he sent me (Signed) Robert Clark, B.A., McGill University. He said he did not have any of the best material. None of the specimens I have had so far from either yourself or McGill University show any indications of the presence of radium in commercial quantities. Some of them are very slightly radioactive, but are quite worthless from the commercial standpoint.

On further consideration I think it most probable that the radium is down with the clay. In other words, the other materials are probably inert, and if the clay were extracted it might contain all the radium. Unfortunately, I have not sufficient material to test this possibility.

Table of Russian Results.

Specimen No. Rate of leak. Radium in specimen. Weight of specimen. Radium per gram.

Specimen No.	Rate of leak	Radium in specimen	Weight of specimen	Radium per gram
Standard	12.60	1.57×10^{-9}		
1 Acid	20.6	not measurable	1.91g	1.91×10^{-8}
Alkaline	0.01	not measurable		
2 Acid	0.097	1.21×10^{-9}	1.128g	1.072×10^{-11}
Alkaline	0.00	not measurable		
3 Acid	6.05	$.744 \times 10^{-9}$	2.061g	0.363×10^{-9}
Alkaline	0.105	1.30×10^{-10}		
4 Acid	0.924	1.15×10^{-10}	2.386g	0.482×10^{-10}
Alkaline	0.001	not measurable		

RADIUM CONTENT OF VARIOUS MINERALS. Table C

Mineral	Locality	Percent		Helium cc/gm
		U3O8	Th O2	
Pitchblende	Joachimstahl	73.5		1.07
"	Cornwall	29.15		.08
Cupro-Uranite	"B"	60.00		.10
Monazite	Norway	1.0	0.65	1.54
	Virginia	0.1	12.43	1.57
	Brazil	0.1	1.54	0.81

INVESTIGATION REPORT

CARNOTITE LOCALITY - QUADRA ISLAND BRITISH COLUMBIA

By: DC.Douglas Jan/Feb 1968

Handwritten initials: J.P., H.R., R.M.

Location: Reference Map N.T.S. 1:50,000 Quadra Island 92 K/3 E & W and marked portion of claim plan attached.

Access: Quadra island is a 15 minute vehicle ferry trip from Campbell River, V.I., which is about 100 miles "up-island" from Nanaimo, being reached by the Island Highway. The carnotite locality is well served by bush roads, suitable for 4 W.D. vehicles.

Summary: Carnotite was reported, in situ, in 1932 and several points of strong radioactivity were also then located. A government geologist at this time found several grains of carnotite in overburden and no radioactive rock. Magnetometer and radiometric was flown in this area in 1956, without detecting a radiometric anomaly. My work of Jan/Feb 1968 detected no radioactivity. There is no reference in the various reports listed to radioactivity in this area since 1932. The finding of Vanadium resulted from the government investigation in 1932, this was not in significant amount but led to further government investigation in 1943 and a M.Sc. thesis in 1960. The property was active as a copper shipper as late as 1964. The actual location of the 1932 carnotite find is poorly described and, it appears, no work was ever done on it; accordingly it may have been missed by me.

Description: The area of the carnotite find is well described in the following B.C.M.M. reports:-

- 1914 page K 383-385 - Copper Mountain Group
- 1918 " 271-274 - " " "
- 1953 " A 163-165 - Dodge Copper Mines Ltd.

History Development, including considerable diamond drilling and small scale shipping of copper ore has been intermittent from prior to 1914 until 1964. All mineral showings are currently staked.

The first index reference to radioactivity, 1914, is an error (1)

Radioactive minerals were reported in 1922, but discounted by government examination and assay, (2).

In 1930, R. Crowe-Swords claimed to have found carnotite in outcrop and government assay confirmed the mineral to be carnotite. Prof. Seyer found several points of strong radioactivity and a company, Radium Explorers Ltd. was formed, in 1932. Dr. Gunning examined the area in 1932 finding only a few grains of carnotite in soil and no radioactive rock. He found vanadium in concentrations not previously known in Canada (4 & 5).

History, Contd. There is no evidence that any work was ever done on the carnotite showing, which seemingly is separate from the numerous copper workings. (3&4)

Radium Explorers Ltd. has one B.C.M.M. index entry (3). It seems it was formed, and expired, in 1932.

R. Crowe-Swords was active on Quadra Island from 1927 to 1932. His activity can be followed in the index up to 1962. From 1933 there is no evidence that ^{he} returned to Quadra Island. (B.C.M.M. Index & reports).

Dr. H.C. Gunning and D Carlisle restudied the vanadium showing in 1943 and another at Menzies Bay, on V.I. opposite Quadra island, they make no reference to radioactivity. (8).

J.L. Jambor wrote a M.Sc. thesis in 1960. "Vanadium bearing inter-lava sediment from Campbell River area B.C." (10). This is not available at B.C. Mines Dept. library and was not seen.

Magnetometer, with radiometric, was flown in 1956 by B.C. Govt. and covered that portion of Quadra island where carnotite was reported. Dr. A. Sutherland Brown, of B.C. Dept. of Mines checked the magnetic anomalies found on Quadra. He informs me that the radiometric record indicated nothing of interest. Aeromag maps have legend for radiometric anomalies, but show none. The report does not mention radioactivity. (11 & 12)

There is a long history of the search for, and minor production of, copper in vicinity of carnotite area. From prior to 1914 until 1964. it is presently staked. (See B.C.M.M. index under Copper Mountain Group and Dodge Copper Mines Ltd.).

Examination of Jan/Feb 1968

The writer, using Sharpe GIS-1 Gamma Ray Spectrometer operating "broad band" on 30 cps scale operating on audio continuously, made extensive traverses in the area as indicated in green in attached claim plan. Workings "Pomeroy 1,2,3 & 4 and Beaver" as shown in B.C.M.M. report 1953, page A 164 were located and read in detail. It is possible that vanadium was found at Pomeroy 2. No reading higher than 15 cps was obtained with the low being 8 cps. A "wild" reading of 140 cps was obtained at Pomeroy 2, but almost certainly is attributable to a two ton granitic boulder of glacial origin.

The description of the carnotite locality (4) is plotted on the claim plan. The bearing probably is approximate since Gowlland harbour would not be visible from this point. There is no copper to be seen in this area and it is difficult to understand why Crowe-Swords would have been so attracted to the area that he was able, in one place, to find carnotite in outcrop. Gunning, who examined the find, did NOT find carnotite in outcrop, but only a few grains in soil, in a crevice 8 feet long.

Examination Contd.

In view of the above paragraph, and that no work was done on the find, I have no certainty that I traversed the carnotite locality or that its existence could be confirmed or refuted without extensive work, involving grid lines at 100 ft. spacing. The area is about 30% outcrop and consists of round topped outcrops with steep sides and dense bush between. It was impracticable to traverse on bearings with the equipment, outcrops were followed

A further days work was planned in more detailed traversing of the target area but the instrument became unserviceable. The work done, however, indicates that should a radioactive area exist, it must be small and isolated.

Grid tapes in area suggest that the area has been of interest to others within the last two years. There was no evidence of soil sample holes.

Examination of the workings and reports suggests that the property is of marginal interest as a copper producer and that the vanadium content is of academic interest only.

Readings were made at several other areas, not shown on claim plan, and were all in the order of 8 to 15 cps. This included the "Lucky Jim", an old producer (B.C.M.M. reports 1907 to 1958)


One, William FOORT of Herriot Bay, Quadra island B.C., encountered whilst seeking road directions, volunteered information that he holds assay certificate to indicate 2% Cu. and 1% Va. on what he regards as an extensive showing, not staked, somewhere nearby on the mainland. I invited him to write me to give the actual figures from the assay certificate, this he has not done. This interested me as I am unaware of reported Va. on the mainland coast and for the possible carnotite Va. association. For the record, his phone number is:- 285-3368.

Discussed Aeromag-Radiometric survey with Dr. A. Sutherland Brown at B.C. Dept of Mines. There was no anomaly, magnetic, in the carnotite area and Dr. Sutherland Brown said the radiometric excited no one but that I could examine tapes if I so wished. This not done. I will make verbal reference as to reliability of a person involved in find. Coverage plot of Aeromag/Radiometric is attached hereto. This seems to be total extent of such survey, by govt. on Vancouver Island.

I consider that further work on the Quadra island carnotite locality is not justified.

Atts.

19 Feb 68


D.C. Douglas
Exploration Engineer

URANIUM/ VANADIUM References Quadra island B.C.

(Note:- Quadra, Maurelle & Sonora islands were once thought to be one island, then known as Valdez - early references are to "Valdez")

- (1). Index No. 1 to BCMM reports at page 379 has entry:-
"Quadra Island
Radium Reported 1914 p. 383."
This is an index error, there is no such reference.
- (2). BCMM Report 1922 p. N 240
- (3). BCMM " 1932 p. 208
- (4). GSC Econ Geol Series No. 11, 1932 p. 139 ~~H V Ellsworth~~ H V Ellsworth
- (5). GSC Summary Report 1932 Part A 11 -p. 51 A 11 H V Ellsworth & H C Gunning
- (6). same as (4)
- (7). Econ Geol Series No. 16 - 1952. p. 46 Lang A.H.
Canadian Deposits of Uranium & Thorium
- (8). Trans. Cdn Inst. Min. Met. Vol XLVII, 1944 p. 415-423
Vanadium on the West Coast of B.C. - Gunning H.C. & Carlisle D.
- (9). GSC Paper 66-57 p. 9.
Vanadium Occurrences in Canada - E.R.Rose
- (10). Unpublished U.B.C. M.Sc. thesis 1960 Jambor J.L.
Vanadium Bearing Inter-Lava Sediment from Campbell River Area B.C.
(Not seen by DCD)
- (11). BCMM report 1957 p. A 58
Refers to airborne magnetometer survey on Quadra island.
- (12). Results of survey, reference (11).
Map AM 57 - 1 & 2, scale 1 in. = 2640 ft. (terrain clearance 500 ft. &
Flight line spacing 1320 ft.)

Report:- Airborne magnetometer surveys 1956-57

D.C.D.
D.C. Douglas
February 1968

PROPERTY FILE

INTEROFFICE MEMORANDUM

Created: 18-Sep-1997 09:58am PDT
Sent: 18-Sep-1997 11:51am PDT
From: Robert Pinsent of EI
RPINSENT
Title: District Geologist
Dept: Employment & Investment
Tel No: 660-0223

TO: Greg Carriere of EI (GCARRIERE)
CC: Ted Hall of EI (TJHALL)
Subject: Quadra Island

Felix was in the office just now. He has flow-through money to spent. Presumably there is no reason why he shouldn't run non-intrusive grid programs. Actually, I didn't think to mention it but flying a high-resolution radiometric survey might be an excellent way of addressing the current issue.

I can fill you in a bit on the Radium - Senator geology but not on the bureaucratic implications.

As I suspected, it has to do with the discovery of "carnotite", a powdery yellow vanadium/uranium oxide mineral in veins in the volcanic flows in the early 1920's. Paul Wilton, my predecessor as Regional Geologist, obviously had an interest in the site and I have a reasonable amount of information on the occurrence. His files contain some early correspondence between a Mr. Neave and the GSC regarding some samples from Quadra (Valdez) in 1922. They also show that a UBC Professor "established several points of strong radioactivity indicating possible radium bearing minerals at greater depth, in 1932. Small seams of carnotite were found on surface, varying from a knife-blade seam to a couple of inches in thickness". The carnotite was analysed and found to contain around 28% uranium oxide "which is radium-bearing" (EMPR Annual Report 1932).

However, the GSC examined the same ground later the same year and state that "no more than traces of of these carnotite pockets remained, but specimens of the rock were taken and subsequently tested for radioactivity none of the specimens showed appreciable radioactivity" (GSC Summary Report 1932, ptA11). One sampled analyzed by the GSC contained vanadium but "not detectable" uranium which suggests there isn't a simple one to one correlation between the two.

Thereafter, various people looked at the vanadium content of the rock and identified an "extremely thin" vanadium bearing sediment between two of the flows. This is described in a UBC MSc Thesis by J. L. Jambor around 1957/1960.

There is also a company report in the file entitled "Investigation Report on the Carnotite Locality - Quadra Island" by D.C. Douglas, dated 1968. The results were not encouraging. Mr. Douglas failed to find any sign of radioactive mineralization. Interestingly, he mentions an aeromag-radiometric survey flown by BCDM in 1956 and states that Atholl Sutherland Brown indicated that the radiometric record "indicates nothing of interest".

Given the above, it would seem that the carnotite occurrence is far more likely to turn out to be an interesting curiosity than a major source of radiation.

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