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TARGET PROJECT #117

SECOND QUARTER REPORT

APRIL - JUNE 1979

J.C. Stephen Explorations Ltd.
1124 West 15th Street,
North Vancouver, B.C.

June 30, 1979

TARGET PROJECT #117

SECOND QUARTER REPORT

TABLE OF CONTENTS

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INTRODUCTION

Work was focused on the SWAB and GREER claim groups during the quarter. On SWAB a grid was established, topography was surveyed and boulder mapping was conducted.

On GREER preliminary geological mapping and soil sampling were done.

Some reconnaissance exploration was done, primarily rock geochemistry, in the area between Prince George and Williams Lake.

Air photo interpretation and minor silt sampling and prospecting were done near the Alaska Highway in map sheet 104'0' to investigate scheelite panned from a gravel pit along the highway. Results have been poor although not entirely negative.

Efforts to joint venture uranium exploration on the NIT, BIN, GREER properties have not been successful.

SWAB CLAIM GROUP

Dr. Bayrock of Bayrock Surficial Geology Ltd. was consulted with regard to the SWAB soil anomalies. A file of data was provided for his use and several soil samples were made available for analysis. Stephen met with Dr. Bayrock and his assistant Jim Murphy on two occasions to discuss the property. A copy of a letter, with enclosures, received subsequent to sample analysis and our discussions is provided with this report.

A new grid was established with the base line running up ice from the collar of DDH SWAB #1. Picket lines were laid out to cover the area from the logging road north to the north side of the logged area. Topography was surveyed by stadia to produce a contour map and relocate 1978 soil sample locations.

Boulder mapping was done, rather painstakingly, over the logged area covering the soil sample anomalies and incorporating outcrops in proximity to the clearing.

The geologist Angie Stanta mapping on SWAB was encouraged to submit rock specimens to Vancouver Petrographics for a petrographic report. At this moment I do not have the location of the specimens sent but believe they are all of the rock type we called alaskite. The petrographic reports give the names "Graphic Quartz Monzonite" and "Porphyritic Granodiorite Quartz Monzonite" to these samples. Copies of these reports are included in this report.

During preliminary mapping Angie Stanta and Stephen found a green tuffaceous boulder near the west end of the new SWAB grid which contained a radioactive fracture. Chips of the best material were forwarded to Dome for examination. A copy of a report by Dr. Gorman and assay results for sample 19007, supplied by Dome, are included in this report for reference. No other radioactive boulders were found in the grid area during mapping.

Stephen spent one day prospecting the boulder field south west of SWAB and the area up to two kilometres west of SWAB. Three tuffaceous or volcanic boulders with somewhat radioactive fractures were found. These are located west of SWAB about in line with the soil anomalies. These ran 1.5, 8.0 and 24.0 ppm U and 1150, 1400 and 360 ppm Mn respectively. Further prospecting is warranted but the crew presently available is not sufficiently experienced to allow us to assign them this work.

* See letter of July 27-79

GREER CLAIM GROUP

Geological mapping and reconnaissance soil sampling were done on GREER using air photos for control. Stephen spent two days traversing in the central portion of the claim group.

Topography of the Topley intrusives is relatively rugged but these granitic rocks appear fresh on almost all outcrops. Only in one place was a possibly Tertiary paleosurface seen and weathering into the Topley was quite restricted. Various phases of Tertiary volcanics are evident. Faults trending about N 10^{o}E cut all formations. No distinctly sedimentary beds were seen by Stephen.

One small area of feldspathization in volcanics of probably Jurassic age, with very minor pyrite and chalcopyrite mineralization, was seen.

Partial geochemical results have been received but copies of the mapping are not immediately available. Uranium results range up to 32 ppm, copper up to 290 ppm, Mo up to 6 ppm. No significant anomaly can be deduced.

The work done is intended to be filed as assessment work.

BIN CLAIM GROUP

Arrangements have been made to have Bema Industries conduct a program of deep soil sampling using a Ponjar drill. A pattern of holes has been laid out to test areas where initial soil sampling showed weak results near creeks which were quite anomalous. This work is to be completed prior to August 10 and will be used for assessment work.

REGIONAL PROSPECTING

A few rock and chip samples were taken in two areas north of Williams Lake in search of geochemical evidence of gold mineralization. Results for gold are generally poor but some anomalous values for copper and silver were received and some follow up sampling should be done.

In the Hixon area analysis of stored samples had indicated one creek anomalous for Molybdenum and tungsten. The crew resampled this area after completing the GREER mapping. Results have not yet been received.

A financial summary is provided with this report.

Respectfully submitted

J.C. Stephen Explorations Ltd.

J.C. Stephen

JCC/dc

TARGET PROJECT #117

FINANCIAL REPORT TO JUNE 30, 1979

ITEM	EXPENDITURE SECOND QUARTER	YEAR TO DATE
ADVANCES - EXPENSES	$ 313.43	$ 313.43
INSTRUMENTS & MAPPING EQUIPMENT	800.00	800.00
FOOD	485.48	485.48
MAPS, PHOTOS, PUBLICATIONS, ETC.	61.80	64.30
ASSESSMENT RECORDING	575.00	985.00
GEOCHEMISTRY	1,042.29	1,432.61
SALARIES & BENEFITS	4,991.48	4,991.48
WORKER'S COMPENSATION	163.58	163.58
TOOLS AND SUPPLIES	314.63	314.63
BLUEPRINTING, DRAFTING & SUPPLIES	87.50	242.17
EQUIPMENT RENTAL & REPAIRS	163.18	363.66
TRUCK RENTAL	1,408.00	1,408.00
VEHICLE OPERATING	633.88	633.88
PUBLIC RELATIONS & SYMPOSIUMS ETC.		10.70
TRAVEL EXPENSE	611.11	611.11
GEOTECHNICAL & CONSULTING	624.41	624.41
TELEPHONE, POSTAGE	104.38	169.32
EXPRESS, CARTAGE	4.10	20.60
J.C. STEPHEN EXPLORATIONS LTD. SERVICES	2,320.30	3,241.42
OVERHEAD	675.07	675.07
INTEREST & BANK CHARGES	11.00	13.00
TOTAL EXPENDITURES	15,390.62	17,563.85
TOTAL CONTRIBUTIONS		30,000.00
BALANCE PER BANK		$ 12,436.15

BAYROCK SURFICIAL GEOLOGY LTD.

SUITE 201 - 1429 DOMINION STREET
NORTH VANCOUVER, B.C.
CANADA
V7J 1B3

TELEPHONE: (604) 980-4505

June 1, 1979

J.C. Stephen Explorations Ltd.,
1124 West 15th Street,
North Vancouver, B.C.
V7P 1M9

Dear Cam:

Enclosed is the data on the SWAB Claim Group which you submitted to Bayrock Surficial Geology Ltd. A list of the material is included on the attached sheet. Everything is being returned except the four soil samples which we analysed for extractable uranium by Min-En Laboratories Ltd.

As a result of the analysis by Dr. Bayrock of the current data, as well as the discussions with you, it is apparent that the main uranium anomaly on the SWAB Claims is not related to the distribution of primary uranium within till but is instead a hydromorphic anomaly. As such, there is no reason for Dr. Bayrock to examine the till within the anomalous area.

All the best during the coming field season.

Sincerely,

J.D. Murphy, P.Geol.

JDM/mp
Encls:

LIST OF ITEMS RETURNED June 1, 1979

(1) GSC Memoir 324 with Map 1131A 'Geology' and Figure 1 'Glacial Features',
(2) print of 1:50,000 map 93F/15 'Silt Geochem',
(3) print of 1:50,000 map 93F/15 'Air Scintillometer',
(4) print at 1:6,000 SWAB Group 'Geology',
(5) print at 1:6,000 Swab Group 'Geochemistry',
(6) print at 1:6,000 Swab Group 'Helicopter Radiometric Survey',
(7) print at 1:2,500 Swab Group 'Detail Soil Sample Results',
(8) print at 1:2,500 Swab Group 'Scintillometer Survey',
(9) report 'Magnetic Survey and Diamond Drill Report' SWAB 2 & 3 CLAIMS
(10) airphotos BC4030/156-160; BC4030/196-202.
(11) flourine and thorium analysis on 54 soil samples from the SWAB detail soil grid.
(12) a summary list "Rock Geochem Results to Date" which shows uranium values for alaskite specimens from surface and from drill core.
(13) 1" - 4 mile "Interpretation of Geology" to show rock distribution as we now understand it.
(14) a copy of correspondence and a report submitted to Dome by Min met Scientific covering electron micro probe examination of four samples.
(15) Certificate of analysis by X-Ran Assay Laboratories on twelve soil samples from SWAB as a check on Chemex results.
(16) Rock specimen 23014A
(17) Rock specimen 23008A
(18) Two core samples from 449' and 456' in D.D.H. #1
(19) the field file of soil sample forms showing data recorded by samples on SWAB group.
(20) eight soil samples
(21) geochemical analysis results of four samples using U-Solvent extraction and fluorometric U analysis.

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

B93

ANALYTICAL REPORT

Project ..... Date of report April 30/79.

File No. 9-109 Date samples received April 27/79.

Samples submitted by: Jim Murphy

Company: Bayrock Surficial Geology Ltd.

Report on: 4 Geochem samples

..... Assay samples

.....

Copies sent to:

1. Bayrock Surficial, North Vancouver, B.C.
2. .....
3. .....

Samples: Sieved to mesh ..... Ground to mesh .....

Prepared samples stored ☐ discarded ☐

rejects stored ☐ discarded ☐

Methods of analysis: U-Solvent Extraction.Fluorometric Analysis.

Bicarbonate U-Leaching, Fluorometric Analysis.

Remarks: .....

.....

.....

COMPANY: Bayrock Surficial Geology Ltd.

PROJECT No.:

ATTENTION: Jim Murphy

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2

PHONE (604) 980-5814

B93

02/05/79

FILE No. 9-10

DATE: May 1 1979.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	U ppm	Bicarb U ppm
3+50W8+75S													105.0	85.0
1+50W8+75S													165.0	125.0
3+75E8+75S													390.0	390.0
4+50E9+75S													110.0	90.0

CERTIFIED BY

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph. D., Geologist

Vancouver

Report for: Angie Stanta,
c/o J.C.Stephen Expl.,
General Delivery,
Vanderhoof, B.C.

Invoice 1044

copy to: J.C.Stephen Expl.,
1124 West 15th Street,
North Vancouver, B.C. V7P 1M9

Samples: 5A, 18, 19, 30, R

The samples may represent three phases of a major near-surface intrusion; they are grouped as follows:

1) Coarse Graphic Quartz Monzonite (K-feldspar alteration)
coarse grained groundmass and coarse graphic intergrowths;
plagioclase almost completely replaced by K-feldspar

samples 19, 18

2) Porphyritic Fine Graphic Quartz Monzonite
finer grained groundmass and fine graphic intergrowths
plagioclase phenocrysts have distinctive K-feldspar rims, and are partly altered to K-feldspar in the interiors

samples 5A, 30

3) Porphyritic Granodiorite - Quartz Monzonite
no graphic intergrowths
plagioclase phenocrysts have partial rims of K-feldspar, weak alteration to K-feldspar in interiors

sample R

Other distinctive features are biotite distribution and pyrite-iron oxide relations.

Biotite forms slender lathy phenocrysts in samples 5A and R; biotite is rare in samples 18 and 19.

Pyrite is abundant in sample R, and occurs in a vein in sample 18; in the latter it is strongly replaced by hematite, possibly of weathering origin. In other samples, and in sample 18 away from the vein, the opaque minerals are probably magnetite and hematite; all samples are slightly magnetic except sample R.

Feldspars are altered by abundant dusty semiopaque, possibly Ti-oxide; in some samples this alteration is described as opaque, but re-examination under bright light at high power shows that it is slightly translucent.

A fine grained secondary mineral occurs in cavities in some rocks; it cannot be positively identified because of the fine grain size, but the most probable mineral is clay (kaolinite). In some samples the identification of the mineral is hindered by dusty to fine grained limonite.

John Payne

John Payne,
June, 1970.

Sample 5A **Porphyritic Graphic Quartz Monzonite**

phenocrysts	
plagioclase	20%
biotite	2- 3
groundmass	
plagioclase	5
quartz	15
K-feldspar	25-30
graphic K-feldspar, quartz	25-30
opaque	2- 3
biotite	1- 2
muscovite	minor
Ti-oxide	trace

Plagioclase phenocrysts are from 1 to 4 mm in size. Many have thin rims (0.05 mm) of K-feldspar, and a few are partly altered to K-feldspar. Grains are mainly moderately altered to dusty sericite and Fe-oxide; minor clay may be present. Patches in some grains contain abundant limonite.

Biotite forms delicate laths up to 1.5 mm long; pleochroism is from light straw to medium reddish brown.

The groundmass felsic minerals are mainly 0.15 to 0.5 mm in size. Plagioclase forms scattered subhedral grains with minor dusty alteration. Quartz forms anhedral grains, including a few coarse grains up to 1.5 mm. K-feldspar forms subhedral to euhedral rectangular grains from 0.3 to 0.5 mm in size; some may be replacement of original plagioclase. All have dusty alteration to opaque.

Graphic K-feldspar-quartz intergrowths are from 0.15 to 0.3 mm in grain size, with quartz lenses in K-feldspar commonly as fine as 0.02-0.05 mm. These intergrowths are similar in texture but much finer than those in samples 19 and 18.

Opaque forms irregular grains from very fine up to 0.5 mm; they are in part magnetite, and probably the rest is hematite. Ti-oxide forms tiny grains with opaque.

Biotite forms ragged laths and irregular grains with similar pleochroism to phenocrysts. Muscovite forms ragged grains, some with fine grained disseminated opaque and Ti-oxide, probably a replacement of biotite.

One triangular patch 0.2 mm across of sericite? as in samples 18 and 19 occurs interstitial to quartz and graphic quartz-K-feldspar. In sample 30 this mineral is tentatively identified as clay.

Sample 18 K-altered Graphic Quartz Monzonite

plagioclase ?	10-15%	(mainly phenocrysts altered to K-feldspar)
K-feldspar	15	
quartz	15	
graphic quartz-K-spar	45-50	
pyrite	1	(rimmed by secondary hematite)
magnetite-hematite	1- 2	
biotite	0.5	
Ti-oxide, leucoxene	minor	
sericite? (clay?)	minor	(in cavities) (see description of sample 30)
zircon	minor	
apatite, muscovite	trace	

The sample is similar to sample 19.

Plagioclase forms coarse grains from 1 to 2.5 mm in size; most are subhedral slightly elongated prisms. A few grade into graphic quartz-K feldspar intergrowths near their ends. All are completely or almost completely altered to K-feldspar. Dusty opaque alteration occurs in all K-feldspar, and masks primary textures.

K-feldspar and quartz form finer grains 0.3 to 1.0 mm in size as irregular aggregates. A few phenocrysts? of quartz are up to 1.5 mm across. Quartz-K-feldspar intergrowths locally grade into graphic intergrowths.

Graphic quartz-K feldspar form anhedral grains 0.3 to 1.5 mm in size, with each mineral in optical continuity within the grain. Quartz forms rounded to lensy blebs in K-feldspar, ranging in size from 0.05 to 0.2 mm.

Scattered through the rock are anhedral to subhedral opaque grains 0.05-0.2 mm in size. In polished section these are seen to be hematite (2/3) and magnetite (1/3), commonly intergrown in coarse aggregates.

Biotite forms irregular laths up to 0.7 mm long, with pleochroism from light straw to medium greenish brown. Associated with biotite is subhedral to euhedral zircon grains from 0.05 to 0.1 mm in size.

Ti-oxide and leucoxene form scattered patches up to 0.2 mm across, in part with a brown color, probably caused by minor limonite.

Apatite forms one corroded grain 0.5 mm long.

Muscovite forms a few grains up to 0.05 mm long with opaque.

The rock contains a few interstitial patches of sericite? as in sample 19, with grain size 0.00[illegible]-0.02 mm.

The rock is cut by a wispy vein containing coarse to fine pyrite, partly altered to hematite; the latter mineral forms concentric alteration zones around irregular cores of pyrite. Possibly finer grained hematite in the vein and in the rock represents completely replaced pyrite.

Sample 19 K-altered Graphic Quartz Monzonite

plagioclase?	15-20%	(mainly altered to K-feldspar)
quartz	10-15	
K-feldspar	10-15	(possibly in part after plagioclase)
graphic K-feldspar, quartz	45-50	
opaque	1- 2	
biotite	minor	
sericite? (clay?)	1	(see description of sample 30)
Ti-oxide	minor	
zircon, limonite	trace	
cavities	1- 2	

Plagioclase forms subhedral crystals up to 3 mm long; most are slightly elongate prisms, but one is 3 X 0.2 mm. Some have thin rims of K-feldspar, and most are strongly altered to K-feldspar. Dusty opaque is superimposed on all K-feldspar and plagioclase, rendering their distinction difficult in thin section; relations are better seen in the stained block.

Quartz and K-feldspar form discrete grains mainly from 0.2-0.5 mm in size; these are intergrown with graphic K-feldspar-quartz grains.

Graphic intergrowths are in grains ranging from 0.2 to 1.5 mm in size, with a wide variety of textures. Percentages of phases ranges from 30 to 70. In a given grain, each mineral is in optical continuity.

The opaque is a black oxide, some of which is magnetite. A polished section description of Sample 18 probably is similar to that of Sample 19; i.e., magnetite and hematite are present. Opaque forms patches of fine anhedral grains intergrown with quartz and K-feldspar, and a few coarser grains up to 0.4 mm across.

Biotite forms a few ragged grains, mostly 0.1-0.2 mm in length, with one lath 1.5 mm long. Pleochroism is from pale straw to medium brown. Some grains, including the coarse grain, are partly replaced by finer grained secondary biotite-sericite and dusty opaque and Ti-oxide.

Sericite? occurs as partial filling of interstitial cavities. Its properties are: light brown color (possibly caused by limonite), low birefringence, low to moderate relief, elongate laths and flaky aggregates 0.01-0.02 mm in grain size, length-fast. The mineral resembles sericite, but the birefringence seems too low.

Ti-oxide occurs as fine grained aggregates with opaque.

Zircon forms two grains 0.05-0.1 mm across enclosed in opaque.

Limonite forms one bright orange lens 0.3 mm long, consisting of an extremely fine grained aggregate.

Sample 30 **Porphyritic Graphic Quartz Monzonite**

phenocrysts	
plagioclase	25%
groundmass	
plagioclase	5-10
K-feldspar	25-30
quartz	10-15
graphic K-feldspar, quartz	15-20
biotite	1- 2
opaque	2- 3
clay	2- 3
Ti-oxide	minor

The sample is similar in many respects to sample 5A, but contains many fewer biotite phenocrysts.

Plagioclase phenocrysts from 1 to 4 mm are euhedral to subhedral. Some show broad concentric zones with different alteration patterns. Some cores are very strongly altered to a very fine grained aggregate of sericite, limonite, and calcite?; other cores are relatively fresh and cut by coarse fractures with these minerals along the fractures. Most grains are moderately altered to sericite and variable limonite. Many have thin rims of K-feldspar, and some are partly altered to K-feldspar.

In the groundmass plagioclase crystals are less strongly altered to sericite, but contain dusty opaque. Quartz forms angular to rounded grains from 0.05 to 0.3 mm in size. K-feldspar forms some euhedral rectangular grains 0.3-0.5 mm in size, surrounded by quartz or graphic K-feldspar-quartz intergrowths. All K-feldspar has abundant dusty opaque alteration.

Biotite forms scattered grains up to 0.5 mm in size; many are partly to completely altered to muscovite with Ti-oxide and opaque; and minor zircon occurs with biotite.

Opaque is partly magnetite and partly hematite; it forms irregular to rounded grains and a few elongate laths from 0.1 to 0.3 mm in size. Ti-oxide forms very fine grained (0.02-0.05 mm) aggregates with opaque.

Clay forms interstitial patches up to 0.3 mm across of very fine grained felty aggregates; the mineral has the following properties: light yellow color, low to moderate relief (R.I. greater than that of quartz), very low birefringence. It is free of limonite. It probably is the same mineral described in samples 18, 19, and 5A as sericite?

Sample R Poprhyritic Granodiorite - Quartz Monzonite

phenocrysts	
plagioclase	20-25%
biotite	1
groundmass	
plagioclase	20-25
K-feldspar	30-35
quartz	10-15
biotite	2- 3
pyrite	3- 5
Ti-oxide	1- 2
rock inclusion	1

Plagioclase phenocrysts are subhedral to euhedral, equant to elongate, averaging 1-1.5 mm, with the largest being 3.5 mm long. They are slightly to moderately altered to dusty to fine grained sericite and semiopaque (Ti-oxide?). Some have partial rims of K-feldspar, and K-feldspar forms patchy replacement zones.

Biotite forms a few delicate laths from 0.5 to 1.5 mm long and 0.05 mm across; pleochroism is from light straw to medium reddish brown.

The groundmass consist of lathy to irregular feldspars from 0.1 to 0.3 mm long and anhedral interstitial quartz, mainly 0.1 mm in size with a few grains up to 0.3 mm. Feldspars are altered to dusty semi-opaque and minor opaque. No graphic intergrowths are present.

Biotite forms irregular grains and thin laths from 0.05 to 0.3 mm long scattered in the groundmass; pleochroism is from pale straw to light brown. A few coarser grains up to 1 mm across have a deeper reddish-brown color similar to that of the phenocrysts.

Pyrite forms rounded to subhedral grains 0.05-0.15 mm in size, commonly in interstitial clusters with feldspars and quartz. The rock is cut by thin opaque and semiopaque veinlets, possibly pyrite and Ti-oxide.

Ti-oxide forms clusters of fine to very fine grains, commonly with pyrite.

The rock contains an inclusion of an equigranular rock 2 mm across. Mineralogy is mainly quartz, plagioclase, and K-feldspar, with 30% quartz (much more than in main rock). Grain size is 0.2 to 0.3 mm.

REPORT ON RADIOACTIVE SPECIMEN NO. 19007

PROJECT 117, SWAB

Two polished sections were made of the darker portions of the sample, and autoradiographs made. No radioactivity was detected on the films.

Three more autoradiographs were made, one of a flat surface of the light colored rock, and two of irregular surface material. Only one of these gave evidence of radioactivity, a diffuse haziness on the film, caused by surface material. When examined under the binocular microscope, the surface alteration was seen to be a thin skin of clayey material. No discrete radioactive mineral was seen in it.

Many fragments of the original sample were examined under the U.V. lamp. Three hazey patches of green fluorescence were seen on fracture surfaces. These may or may not be caused by very fine secondary radioactive minerals, but probably not.

CONCLUSIONS

The radioactivity is concentrated in a clayey alteration on the surface of the sample. No discrete uranium minerals were detected, but if present, would be of a secondary nature, and very fine. Otherwise, the radioactivity could be caused by ionic uranium admixed with the clay.

D. H. Gorman

X-RAY ASSAY LABORATORIES
LIMITED
1885 LESLIE STREET DON MILLS, ONTARIO M3B 3J4 (416) 445-5755

Certificate of Analysis

NO. 4768 PAGE 1 of 1

TO. Dome Exploration (Canada) Ltd.,
Attn: Dave Stone,
365 Bay St., Ste. 600,
Toronto, Ontario.
M5H 2V9

RECEIVED May 29, 1979 INVOICE NO. 4768

SAMPLE(S) OF 1 rock SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample	$\%U_3O_8$	$\%ThO_2$
19007	0.060	Trace

117 TECH

X-RAY ASSAY LABORATORIES LIMITED

DATE June 6, 1979 CERTIFIED BY