GEOLOGICAL AND GEOCHEMICAL REPORT

GREER 1 - 4, MINERAL CLAIMS

OMINECA MINING DIVISION

N.T.S. Map 93F/15E

Latitude 53°48'N; Longitude 124°36'W

OWNER J.C. STEPHEN

OPERATOR DOME EXPLORATION (CANADA) LTD.



A. STANTA J.C. STEPHEN

July 15, 1979

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MAP	II	GEOLOGY AND G GREER CLAIM G	EOCHEMISTRY ROUP NORTH	In pocket at Back of Report

GEOLOGICAL AND GEOCHEMICAL REPORT

GREER 1 - 4 MINERAL CLAIMS

INTRODUCTION

A reconnaissance program in search of uranium was commenced during summer 1977. Research noted a reference to lignite, sandstone and conglomerate on the Nechako River. (G.S.C. Memoir 69, p306)

Examination of the topographic, geological and aeromagnetic maps in the Mt. Greer area indicated the possibility of Tertiary basins lying on the paleosurface of the Topley intrusives. This was considered a reasonable target for uranium exploration and a reconnaissance was done using a McPhar TC-33A scintillometer to take readings from a Bell 3 B-1 helicopter. Readings up to three times background were obtained along rhyolite ridges and the ground was staked as the GREER claim group.

Geological mapping and geochemical sampling was undertaken to assess the merits of the claim group.

CLAIMS REGISTER

Claim	Record No	. Recording Date	<u>No. of Units</u>
GREER	1 1263	July 27,1978	15
GREER	2 1264	July 27,1978	20
GREER	3 1265	July 27,1978	20
GREER	4 1266	July 27,1978	20

ACCESS AND TOPOGRAPHY

The claims are located on the west slopes of Mr. Greer and lie immediately east of the Nechako River, (see Figure 1). The Kenney Dam road, reached by following Nechako Avenue south from Vanderhoof, passes through the south east corner of the claim group. Distance from Vanderhoof is approximately 60 kilometres. Logging roads provide easy access to the central portion of the claim group.

The peak of Mt. Greer lies just east of the property at an elevation of 1254 metres. The Nechako River flows north and north east past the west and north boundaries of the claims at an elevation of 700 metres. General slopes on the property are westerly to the Nechako River except in the south east portion where drainage is to the south east into Greer Creek.

The surface topography consists of north east trending ridges separated by somewhat swampy valleys. The terrain has been shaped largely by the north east flow of continental glaciation. Rock exposures have generally been eroded to a fresh surface and only rarely are occurrences of the pre Tertiary paleosurface exposed as outcrop.

Flat lying basalt flows cap Mt. Greer and some of these occur as abrupt outcrop faces along the east boundary of the property.

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GEOLOGY

Regional geology is described in G.S.C. Memoir 324 Nechako River Map Area. The results of mapping on the property are shown on Maps I and II included in this report.

TABLE OF FORMATIONS

TERTIARY

6 Basalt

5 Rhyolite, Rhyolite Tuff

4 Dacite, Dacite Porphry, Siliceous Dacite, Vesicular Dacite Unconformity

CRETACEOUS

Topley Intrusives

3 Granodiorite, 3a Diorite

3b Granite, 3c Biotite Feldspar Porphry

Intrusive Contact

JURASSIC OR OLDER

- 2 Andesite and/or Basalt
- 1 Gneiss

ROCK TYPES

JURASSIC AND/OR OLDER

Gneiss

Small outcrops along the logging road in the north west portion of GREER 2 consist of granular quartz biotite gneiss. Only very small exposures were found and the extent and true nature of the rock is unknown. It appears to be intruded, and partially digested by diorite of the Topley intrusions.

Andesite and/or Basalt

Logging roads have exposed a small area of andesitic volcanics near the north boundary of GREER 2 which are similar in appearance to volcanics of Triassic or Jurassic age in other parts of British Columbia.

The rock is fine grained, generally dark green, with epidote developed in some areas. The upper exposures, slightly east of the main road cut are fractured and feldspathized and contain minor pyrite and chalcopyrite mineralization. It is assumed the feldspathization is due to intrusion of one of these phases of the Topley intrusives.

Near the common corner of GREER 1, 2 and 3 volcanics are recrystallized and intruded by granite dykes.

CRETACEOUS

Topley Intrusives

Fairly extensive exposures of intrusive rocks were found on the property. Actual intrusive relationships were rarely seen, the best example being at the common corner of GREER 1, 2 and 3.

The diorite is a dark grey equigranular medium grained rock, generally fresh in appearance. A few exposures show prominent biotite and hornblende and are somewhat coarser grained than usual.

The rocks classed as granodiorite appear to be a phase of the diorite. They are perhaps younger and more widespread than the diorite. They are generally medium grained, massive and fresh.

Granite dykes occur in the north west corner of GREER 2. These are fine to medium grained, pink in color, and consist primarily of pink orthoclase and quartz with relatively little hornblende.

Near the middle of the north boundary of GREER 2, two small exposures of biotite feldspar porphyry were found. These are similar in general appearance to rocks of this type in the Babine Lake area but exposures are too restricted to even give an idea of the nature of the occurrence.

In the south part of GREER 2 a single small outcrop of grey biotite feldspar porphyry is thought to be related in composition and probably age. This occurrence however may be part of a near surface intrusion or even a surface flow.

TERTIARY

Dacite, Dacite Porphyry

Dacite outcrops are found near the common corner of GREER 1, 2 and 3. The rock is light grey coloured and very fine grained. An outcrop of dacite showing flowbanding with siliceous looking fragments was found in a stream channel 773 metres north of the common post of GREER 1, 2 and 3. The flowbanding was displaced around some of the fragmentals. Two petrographic reports describing dacites from the south part of GREER 3 are included as Appendix I.

Rhyolite, Rhyolite Tuff

Rhyolites on the claim group are reddish pink. The texture is very fine. Flow banding is common. It shows up as bands of different colour and texture, and is more noticeable on a weathered surface than on a freshly broken surface. In the rhyolite tuff, quartz and feldspar (especially k-felds) are the most common type of phenocryst. A few outcrops of scoriaceous rhyolite tuff were found. The rock is highly vesicular due to the very numerous gas cavities.

Basalt

Basalt outcrops on GREER are found along the eastern edge of the claim group. The rock is fine grained and dark black in colour. Some amygdaloidal basalt outcrops were also found.

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STRUCTURES AND RELATIONSHIPS

The Topley Intrusives appear to have invaded country rocks consisting of Jurassic or older volcanics and possibly gneissic terrain of much greater age. Intrusion occurred in several stages, probably closely related, but resulting in development of diorite, granodiorite and granite. Late stages appear to have produced dykes following fracture systems in older rocks, including earlier stages of the intrusive, and feldspathization of some of the volcanics.

The period of intrusion was followed by uplift (G.S.C. Memoir 324, p 49) and extensive erosion. The Topley Intrusives were exposed and partially eroded.

During Tertiary times eruption of acid volcanics under explosive conditions deposited obsidian, rhyolite and tuff, together with dacite and trachytic volcanics on the erosion surface. On the claim group beds of coarsely fragmental nature have been found in close proximity to exposures of older volcanics intruded by granitic dykes. In only two locations however has the eroded granitic surface been found in outcrop.

It is possible sediments were deposited within some of the basins in the pre Tertiary surface but, although fragments of lignite have been found along the Nechako River west of the property no Tertairy sediments have been located.

Faulting, trending almost north, is indicated by north trending air photo linears and fault zones found in outcrops of Tertiary volcanics. Direction and amount of movement are unknown. It is possible these are old fault zones and only the latest movements have affected the Tertiary deposits.

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GEOCHEMISTRY

Purpose

Soil and stream sampling were undertaken to cover the claim group on a reconnaissance scale in an attempt to find indications of uranium mineralization. Two of the silt samples taken in 1978 showed anomalous amounts of copper and as a result samples were run for uranium, copper and molybdenum.

Method

Soil samples were collected at somewhat irregular intervals along the lower slopes of most main ridges. Silt samples were collected where creeks were encountered. These samples were hung to air dry as much as possible and then shipped to Chemex Labs Ltd., North Vancouver, for processing.

Uranium determinations are by fluorimetric analysis while copper and molybdenum determinations are total extractions and atomic absorption determination.

Results

Geochemical results for Uranium, Molybdenum and Copper values are shown at sample sites on Maps I and II with this report. Except for a few samples anomalous for copper and a few slightly anomalous for uranium, no significant anomalies are indicated.

On GREER 1 sample 79 TAC 59 in the south west corner is slightly anomalous (11.5 ppm) for uranium and above background for copper (44 ppm). No other significant values were obtained in the area and, apparently no outcrop was seen. The values do not appear to be important. Along the east boundary of GREER 1, 79 TAC 18 and 23 run. 11.5 and 32 ppm U respectively. 78 TAC 446 ran 24 ppm U. These values are rather low and widely separated, however, they occur on the east side of a rhyolite tuff ridge in the vicinity of a probable north trending fault and may have significance in light of the geological structure.

Across the boundary in the west portion of GREER 2 samples 78 TAC 442, 79 TAC 4, 79 TAC 158 at 15, 18 and 15 ppm U respectively appear to be a continuation of the anomalous values in eastern GREER 1.

In the north east portion of GREER 2 sample 79 TAC 114 ran 12 ppm U and 78 TAC 465 ran 9.5 ppm U. These are very widely separated and no favourable geological structure is known. Samples 79 TAC 112 (46 ppm) 79 TAC 128 (66 ppm) 79 TAC 127 (32 ppm) 78 TAC 465 (660 ppm) and 78 TAC 466 (196 ppm) indicate above background copper values over a wide area. Only very low values, 1 - 4 ppm Mo, were obtained.

On GREER 3 79 TAC 3 (14 ppm U) and 79 TAC 262 (5.5 ppm U) contain 290 and 46 ppm Cu as well. These are upstream from 79 TAC 263 which ran 13.5 ppm U and 200 ppm Cu. The values are in the vicinity of small outcrops of biotite feldspar porphyry and may warrant further search, primarily for copper.

About 600 metres north of the south west corner of GREER 3 79 TAC 95 and 96 ran 27 and 9 ppm U; 5 and 10 ppm Mo: 182 and 94 ppm Cu respectively.

These values occur along the north trending fault zone near a point where scintillometer count reached 400 cps locally.

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To the north near the fault zone 79 TAC 212 ran 11 ppm U and 58 ppm Cu.

On GREER 4 sampling is more sparse due to difficulty of access. 79 TAC 202, near the centre of the south boundary ran 16 ppm U 5 ppm Mo and 192 ppm Cu. 79 TAC 201 to the south (215 metres) ran 6.5 U, 1 Mo, 42 Cu. The nearest outcrops are of granodiorite. The area may warrant further prospecting.

Silt sample 79 TA 7, midway along the east boundary of GREER ran 18 U, 2 Mo and 40 ppm Cu. This is near a basalt outcrop but whether it is near the base of a small basalt cap can only be determined by more detailed mapping. To the north west (400 metres) silt 79 TA 6 ran 26 ppm U, 1 Mo; 40 Cu. The area would appear to warrant more detailed prospecting.

Near the north boundary 79 TAC 180 ran 24.5 ppm U, 1 Mo; 22 Cu.

Mineralization

No significant uranium mineralization was located on the property. In the northern part of GREER 4 an area is indicated where readings of up to 300 cps were obtained. In the south west corner of GREER 3 counts up to 400 cps were recorded near small dacite outcrops. In the north west portion of GREER 2 weak feldspathization with a little pyrite, chalcopyrite mineralization was located.

To the west of this mineralization a float fragment of Tertiary rhyolite tuff was found which locally gave anomalously high readings.

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RECOMMENDATIONS

No zone of apparent economic interest has been located by work done to date. Widely spaced samples and reconnaissance mapping indicate a zone along the common boundary of GREER 1 and 2 somewhat anomalous for uranium and in the vicinity of the north trending fault which should be investigated in more detail. To the north in the west portion of GREER 3 relatively high scintillometer counts and samples anomalous in U, Mo and Cu indicate a second zone of interest along the fault.

The area lying east of the weak pyrite chalcopyrite mineralization is in the vicinity of biotite feldspar porphyry intrusives and silt samples anomalous for copper.

These three indicated zones should be soil sampled on tape and compass grids and mapped geologically in more detail.



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COST STATEMENT

The following tabulation of expenditures is provided as part of this report.

Wages

G.	Cohoon 14 days @	August 8-22, 1978 1500./month	\$ 700.00
н.	Awmack 14 days (August 8-22, 1978 880./month	410.00
В.	Jacques 14 days @	August 8-22, 1978 1100./month	515.00
Α.	Stanta 25 days (June 3-28,1979 1100./month	917.00
в.	Rode 25 days @	June 3-28, 1979 1100./month	917.00
н.	Awmack 5 days (June 5-10, 1979 1100./month	183.00
М.	Seifert 5 days (June 5-10, 1979 9 1100./month	183.00
C.	Stephen 4 days (June 6-10,1979 100./day	 400.00

\$ 4,225.00

Food and Camp Supplies

								<i></i>		1,080.00
	1	man	x	4	days	x	\$10./day		40.00	
	2	men	x	5	days	х	\$10./day		100.00	
1979:	2	men	x	26	days	x	\$10./day		520.00	
1978:	3	men	х	14	days	x	\$10./day		420.00	

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Truck Rental and Operation

1978:	14 days @ \$660./month	\$	310.00
1 979	25 days @ \$660./month	<u></u>	550.00

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\$ 860.00

Geochem Cost

1978:	12	silts for U, Mo, Cu @ \$4.45	53.00
	5	rock geochem U, F1, Th @ 6.50	32.00
1979	39	silts for U, Mo, Cu @ 4.45	173.00
	1	rock geochem U, Mo, Cu @ 6.50	6.00
:	247	soils for U, Mo, Cu @ 5.10	1,260.00

Total

\$ 7.689.00

\$ 1,524.00

Respectfully submitted, J.C. Stephen Explorations Ltd.

J.C. Stephen

JCS/ms

APPENDIX I PETROGRAPHIC REPORTS



Vancouver Petrographics Ltd.

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

P.O. BOX 39 8887 NASH STREET FORT LANGLEY, B.C. VOX 1JO

PHONE (604) 533-1155

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

Invoice 1661

Samples: 79 ASG 9-9, 9-11

- Sample 9-9 is a porphyritic volcanic rock with plagioclase and biotite phenocrysts in a groundmass of feldspars, with abundant K-feldspar. Quartz is very minor. Thus the rock is a fine grained equivalent of a monzonite to syenodiorite. Vesicles in the rock are partly filled with zeolites and lesser montmorillonite?
- Sample 9-11 is a siliceous porphyritic dacite, with plagioclase phenocrysts strongly altered to K-feldspar in a very variable siliceous groundmass.

Both rocks are flows, with a groundmass crystallized from magma. Sample 9-11 may have a groundmass recrystallized in part at least from volcanic glass, and possibly recrystallized under contact metamorphism of low metamorphic grade. In sample 9-9, a faint flow foliation and flow banding is defined by distribution of semi-opaque minerals, (hematite and Ti-oxide).

ohn Payne.

June, 1979

79-ASG 9-9

Porphyritic Latite

phenocrysts plagioclase	15-20%
biotite apatite, quartz opaque	5 2-1 1
groundmass	65-70
vesicles, amygdules	5

Flagioclase phenocrysts occur individually or in clusters; grain size ranges from 0.5 to 2.5 mm. Most are subhedral and a few have broken, irregular borders. A few are strongly concentrically zoned from tiny cores of An_{34} to rims of An_{26} ; other grains are unzoned, with compositions near An_{24-26} . Grains are fresh to very slightly altered.

Biotite forms eqant to very elongate laths from 0.5 to 1.5 mm long; pleochroism is very strong from light brown to very dark brown. Some laths appear to be partly resorbed by the groundmass.

Apatite forms needles up to 1 mm long, mahy included in plagioclase grains.

Quartz forms a very few angular fragments up to 0.8 mm long.

Opaque forms grains up to 0.6 mm long with ragged borders, commonly altered to hematite. Bome is magnetite. Other grains are subhedral to euhedral with cubic and hexagonal outlines; these are about 0.1 mm across. Some of this appears to be pyrite. One opaque patch contains an irregular zircon grain 0.05 mm across.

One phenocryst 0.8 mm across is strongly altered in two concentric zones; its original composition is unknown. The outer zone appears to be very fine grained clay, and the inner zone fine grained sericite with limonite stain.

The groundmass consists mainly of feldspar; the stained block indicates that much of this is K-feldspar. No quartz was recognized. Feldspar forms equant anhedral grains averaging 0.01-0.02 mm across. Through the groundmass are wispy acicular grains or aggregates of hematite and/or Ti-oxide averaging 0.05-0.10 mm long. These define a faint flow foliation. As well, irregular patches 0.005 mm in size of the same semi-opaque minerals are scattered in the groundmass. A weak flow banding occurs in much of the sample; this is defined mainly by variation in content of semi=opaque in bands 0.05 to 0.15 mm thick. Flow foliation is strongly contorted in much of the sample; this is probably a primary feature.

Irregular vesicles and amygdules up to 10-15 mm long occur throughout the rock. Most smaller ones are filled with zeolite with the following properties: low R.I. (much less than quartz), low birefringence (0.005), length-slow, fibrous to radiating aggregates, grain size 0.1 mm. Larger ones contain this zeolite, and in the centers an extremely fine grained \$0.005 mm) aggregate of montmorillonite? with the properties: low birefringence (nearly isotropic), low relief (R.I. less than zeolite), light brown color.

Limonite forms in a few patches in the groundmass and in amygdules, and in wispy fracture-filling veinlets.

<u>79-ASG 9-11</u> Siliceous Porphyritic Dacite

phenocrysts plagioclase 15% (mainly altered to K-feldspar, lesser quartz Ti-oxide, opaque 3% and minor biotite) groundmass 80-85%

Plagioclase forms scattered phenocrysts from 0.5 to 1 mm in size. Most are altered to K-feldspar as fine grained aggregates with extinction not quite parallel. In some fine grained quartz occurs intergrown with or in patches in the feldspar. Coarser patches of quartz from 0.05 to 0.15 mm in size occur in some phenocrysts, and a few of these also contain biotite.

Ti-oxide with disseminated opaque forms patches up to 0.5 mm across. The opaque may be in part magnetite (the rock is slightly to moderately magnetic), or mainly leucoxene. Grain size is less than 0.02 mm.

The groundmass has a very patchy irregular texture with variation in grain size and mineral composition. Finer grained patches contain more feldspar (both plagioclase and K-feldspar) than coarser patches which contain more quartz and opaque. Biotite occurs in irregular patches up to a few mm across intergrown with quartz, feldspar, and opaque. Grain size ranges from 0.003 to 0.015 mm. Most patches have irregular gradational borders, but one quartz-rich patch 1 mm across has sharper rounded borders. The origin of the patchy texture is probably primary in a fairly viscous siliceous flow unit. Some recrystallization may have occurred, perhaps under contact metamorphic conditions, but this would not be necessary to produce the present textures. Features suggesting recrystallization are the texture of biotite in some patches where it is abundant, and of the coarser grained, quartz-rich patches.

Chlorite forms a few patches of fine grains 0.05-0.1 mm across intergrown with quartz, minor apatite, and muscovite. Apatite forms a few grains from 0.05 to 0.2 mm long. One muscovite grain is 0.1 mm across. Ti-oxide forms scattered fine patches up to 0.10 mm across; these may be of the same origin as the coarser patches described above. Zircon forms a few euhedral prismatic grains 0.1 mm long, some surrounded partly by opaque and biotite.

The rock is cut? by discontinuous veinlets of Ti-oxide and disseminated opaque as in the patches described above. Zircon is common in these zones as anhedral to subhedral grains 0.05-0.08 mm long.

A veinlet of quartz-muscovite with a narrow alteration halo (bleached in hand sample) cuts across the rock; grain size is up to 0.15 mm.



APPENDIX II

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STATEMENT OF QUALIFICATIONS

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STATEMENT OF QUALIFICATIONS

I, Angie Stanta am a candidate for Honours Bachelor of Science, University of Windsor, 1980.

Employment experience included the following:-

May - September 1979 - Geologist with J.C. Stephen Explorations Ltd. North Vancouver, B.C.

June - September 1978 - Assistant to Chief Geophysicist, Husky Oil Operations, Calgary, Alberta.

′ July 23, 1979

Angie Stanta

STATEMENT OF QUALIFICATIONS

J.C. STEPHEN

Ass. Member British Institute of Engineering Technology 1951 Member Canadian Institute of Mining and Metallurgy

EXPERIENCE

DATES POSITION COMPANY 1947 - 49Engineering staff Central Patricia Gold Mines Ltd. 1949 - 50Univ. of Alberta Geology student 1950 - 51 Geological staff Eldorado Mining & Refining (1944) Ltd. 1951 Madsen Red Lake Engineering staff 1952 Geological staff Hasaga Gold Mines Ltd. 1953 - 55 Engineering and Pickle Crow Gold Mines Ltd. Geological staff 1955 - 56 Exploration staff Combined Developments Ltd. 1956 - 59 Associate and field. Jay-Kay Syndicate R.G. Crosby and Assoc. man 1960 - 62Senior construction Haddin, Davis & Brown Ltd. Inspector 1962 - 68 Exploration staff Mastodon Highland Bell Mines Ltd. 1968 **- 76** Exploration Sup't Bacon & Crowhurst Ltd. NBC, LUC, DC Synd's 1977 -Manager D.C. Syndicate President J.C. Stephen Explorations Ltd.



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MAP II