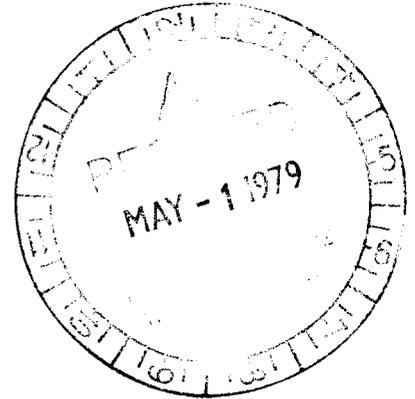




GEOLOGICAL, GEOCHEMICAL REPORT
on the
PLUG 1 - 12 MINERAL CLAIMS
YA 33037 - 33048

MAP SHEET 105B/4
LAT. $60^{\circ}12'N$; LONG. $131^{\circ}46'W$
WATSON LAKE M.D. YUKON

by
J.C. STEPHEN



090456

WORK DONE: June 16-August 24, 1978
BY: J.C. Stephen Explorations Ltd.
FUNDED BY: D.C. Syndicate

MARCH 1979

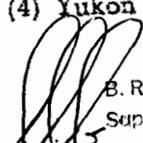
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$ 36 00. 00



~~Resident Geologist or
Resident Mining Engineer~~

Considered as representation work under
Section 53 (4) Yukon Quartz Mining Act.



B. R. BAXTER
Supervising Mining Recorder

 Commissioner of Yukon Territory

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
LOCATION AND ACCESS	2
REGISTER OF CLAIMS	2
GEOLOGY	4
ROCK TYPES	4
MINERALIZATION	6
STRUCTURE	6
GEOCHEMISTRY	
SILT SAMPLES	7
SOIL SAMPLES	7
ROCK GEOCHEMISTRY	9
CONCLUSIONS AND RECOMMENDATIONS	10
STATEMENT OF EXPENDITURES 1978	11
STATEMENT OF QUALIFICATIONS	12

LIST OF ILLUSTRATIONS

FIGURE I	PLUG CLAIM GROUP LOCATION MAP	PAGE 3
MAP I	PLUG CLAIM GROUP GEOLOGY	IN POCKET
MAP II	PLUG CLAIM GROUP GEOCHEMISTRY	IN POCKET

GEOLOGICAL, GEOCHEMICAL REPORT
on the
PLUG 1 - 12 MINERAL CLAIMS

INTRODUCTION

During the 1977 prospecting season tin mineralization was located at several places around the contact of the Seagull batholith. Early in 1978, in the face of a local staking rush, the PLUG claims were staked to cover a small intrusive plug lying three and one half miles southwest of the contact of the Seagull batholith. This intrusive was indicated on G.S.C. map 10-1960.

During prospecting in 1977 some feldspar porphyry dykes had been noted in this area and the high ridges to the east and north had been partially prospected. No silt sampling had been done downstream to the southwest and no significant mineralization had been located.

Subsequent to staking preliminary geological mapping and soil sampling were done to assess the claims.

LOCATION AND ACCESS

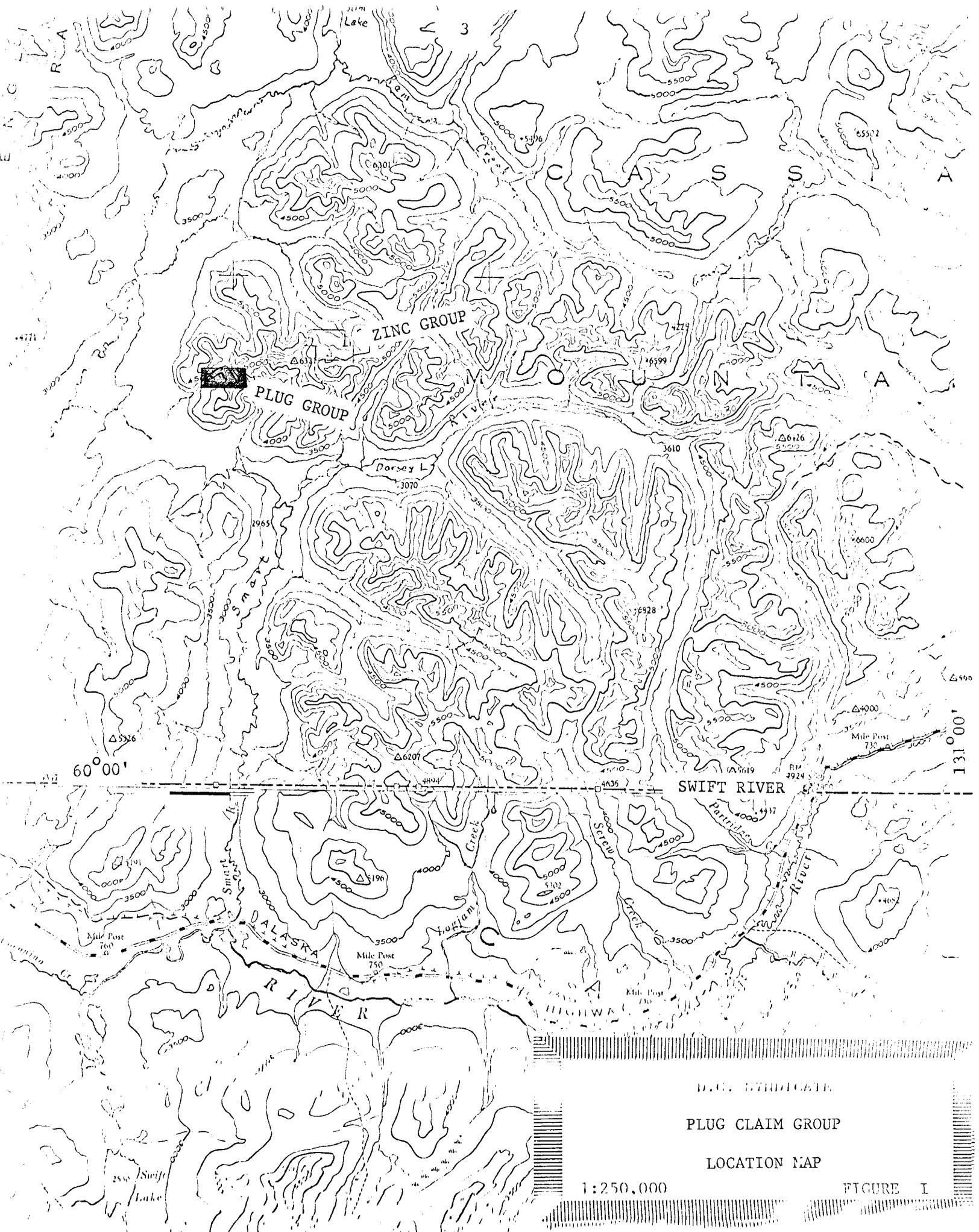
Figure I

The PLUG group is located 24 miles northwest of Swift River and 19 miles north of the Alaska highway. Elevations on the property range from about 4000 to 5800 feet. Drainage is to the southwest to the Morley River which lies about four miles west of the property.

Access to the property has been entirely by helicopter.

REGISTER OF CLAIMS

<u>NAME</u>	<u>RECORD NO.</u>	<u>DATES</u>		<u>STAKER</u>
		<u>STAKED</u>	<u>RECORDED</u>	
PLUG 1- 8	YA33037-33044	June 10/78	June 15/78	Keith Westfall
PLUG 9-12	YA33045-33048	June 10/78	June 15/78	Patrick Milligan



ZINC GROUP
PLUG GROUP

SWIFT RIVER

DALASKA RIVER

D.C. SYDIGATE
PLUG CLAIM GROUP
LOCATION MAP
1:250,000
FIGURE I

GEOLOGY

Regional geology is shown on G.S.C. map 10-1960, Wolf Lake, which shows the claim area to be underlain by Upper Devonian and Lower Mississippian sediments which are intruded by a small satellite stock of the Seagull batholith.

Exploration in the region during 1977 and 1978 had encountered tin mineralization related to the contacts of the Seagull batholith. Staking was conducted on the assumption that satellite intrusives might be favourable structures .

Geological mapping on the claim group was done by J.A. Turner using enlarged air photographs. Observations were plotted at 1"-660 feet and are presented as Map I "Geology".

ROCK TYPES

UNIT 1: Andesite and Volcanic Fragmentals

Massive andesite flows, dark green in color, outcrop in the west half of the claim group. Some areas, not differentiated, are dioritic in appearance and may be more coarsely crystalline portions of the andesite. Associated with the andesite flows are beds of volcanic fragmentals and tuffs. These formations are generally similar to the volcanics on the ZINC group to the north east as well as at other localities around the Seagull batholith.

UNIT 2: Argillite, Slate

These are typical soft, black, well bedded siltstones with some graphite. Turner included some possible chert beds in this unit - "... well bedded, white, hard, and contain bedded pyrite (1-3% disseminated)."

UNIT 3: Limestone

"The limestone is massive marble to differentially weathered cherty limestone, these limestones locally grade into the chert horizons. The limestone is soft (limestone) to very hard (chert with 1-3% pyrite)". Rugose corals are present in some of the limestone beds.

Only minor skarnification along contacts with sills occur. These were lamped but no significant scheelite mineralization was found.

UNIT 3a: Chert, Tuff, Skarn

Much of this unit is probably similar to what was termed silicified limestone on the J.C. group. The rock is fine grained hard and siliceous.

UNIT 4: Quartzite, Greywacke

"The sediments are well bedded, banded (cherts) and locally phyllite. Sedimentary features such as cross bedding, slump structures and graded bedding can be seen. They are hard (cherty) to medium hard (phyllite) buff brown to brown weathering (biotite, minor K-spar)."

UNIT 5: Quartz Feldspar Porphyry Dykes, Sills

These rocks are "much finer grained and slightly harder than Unit 6. They resemble a pyritic chert but the pyrite is not bedded as in the chert. The pyrite (5-20%) is finely disseminated and relic plagioclase crystals are rimmed with pyrite. The contact with the limestone is weakly skarned ...".

UNIT 6: Seagull Batholith

"Only minor expressions of the Seagull were seen. These were dykes of quartz feldspar porphyry which is hard, white to buff colored, and porphyritic with phenocrysts of 1-5 mm within a fine grained matrix. ... the unit is similar to the Seagull at the J.C. group except the phenocrysts are smaller here. To the north on

M.C. 7 claim a coarse grained diorite, possibly related to the Seagull forms a small stock"

It should be noted that most bodies of diorite to gabbro in the vicinity of the Seagull batholith were apparently older than the Seagull and were in some cases intruded by it. Turner does not give any evidence to indicate this diorite is actually related directly to the Seagull.

MINERALIZATION

A minor showing mineralized with arsenopyrite and sphalerite is located close to the fault on PLUG 4. No other mineralization of apparent interest has been reported.

STRUCTURE

The sediments appear, locally, to overlie the volcanics unconformably. However, regionally, the sediments appear to be generally conformable with the volcanics.

On the PLUG group, and in its vicinity, the sediments dip gently to the south with little evidence of folding.

A fault is mapped across the southeast corner of PLUG 4 which may be part of an air photo linear that trends along the creek on PLUG group, over the steep mountain where it is mapped, and easterly toward the tin zones on the J.C. group. No substantial offset has been demonstrated along this supposed fault zone.

GEOCHEMISTRY

SILT SAMPLES

The silt samples taken on and near the property are shown on Map I "Geology". Analysis was done for Cu, Zn, W and Sn. Values are generally low except in the creek flowing south through PLUG 8 where tin values range up to 60 ppm. These samples have been plotted on the main creek but some sample notes indicate they were taken from "side creek". In any case the source is likely to be at, or north of, the north boundary of the claim group.

SOIL SAMPLES

A few soil samples were taken during mapping and the following is a summary of their values:-

On PLUG 3 a sample near the middle of the claim ran 1250 ppm Zn; 20 ppm W and 40 ppm Sn. Another sample about 400 feet east ran 850 ppm Zn, 4 ppm W; 20 ppm Sn. These are quite significant values and should receive further attention.

On PLUG 4 two samples ran 365 and 555 ppm Zn with only low W and Sn.

On PLUG 5, near the southeast corner, a sample ran 78 ppm Zn; 2 ppm W; 250 ppm Sn.

A more comprehensive soil sample program was conducted on a tape and compass grid over the areas of most extensive overburden. Two hundred, twenty two samples were taken and most were analysed for copper, zinc, tungsten and tin. Copper was not determined on some intermediate lines.

COPPER

Values range from 12 to 128 ppm. No anomalous zones are apparent and no significant copper mineralization has been found.

ZINC

Values range from 15 to 510 ppm. Only five samples ran 300 ppm Zn or greater and these appear to be spatially related to the Sn, W anomalies at the east end of the grid and may be related to mineralization along east trending faults.

TUNGSTEN

Values range from 2 to 35 ppm and some slightly anomalous areas are indicated. These are generally related to the tin anomaly apparently associated with east trending faulting. Values are probably peripheral to tin and are not high enough to constitute a significant tungsten anomaly.

TIN

Values range from 1 to 79 ppm. Three separate anomalies are indicated although values are relatively low.

- (1) On PLUG 8 and 10 tin values between 15 and 79 ppm occur generally along the edge of the volcanic outcrop area. It may be that the area is underlain at shallow depth by intrusive rocks and the zone is similar in some respects to the tin anomalies on ZINC group which lie over intrusive areas just below the volcanic contact.
- (2) In the northeast corner of PLUG 4 tin values range from 12 to 59 ppm. The rock unit 3a "chert, tuff, skarn" is mapped in this vicinity and is cut by an east trending fault.
- (3) In the south portion of PLUG 4 tin values of 11 to 50 ppm occur trending westerly along the approximate trace of an east-west fault zone. Relatively coincident tungsten and high zinc values

occur along this same trend. Low tungsten anomalies on PLUG 7 and 9 are also on this general trend.

The soil sample grid did not extend far enough south on PLUG 3 to cover the area of high zinc, tungsten and tin values indicated by soil samples taken during geological mapping.

ROCK GEOCHEMISTRY

A few specimens showing some mineralization were analysed.

<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>Cu</u>	<u>Pb</u>	<u>DETERMINATIONS</u>					<u>ppm</u>
				<u>Zn</u>	<u>Ag</u>	<u>Sn</u>	<u>As</u>		
66510	Heavy pyrrhotite, no fluorescence	210	8	1645	1.2	1			
66511	Heavy arsenopyrite, epidote				1.2	110			
53511	Med.grain Seagull int, schorl						1	23	
53513	Aplite with arseno on fractures						1	>500	

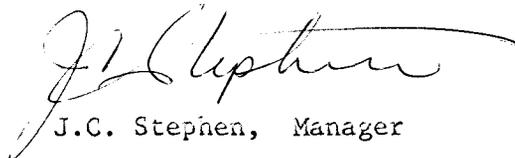
CONCLUSIONS AND RECOMMENDATIONS

It is understood Dupont-Duval Joint Venture have encountered tin values in a gossan north of the PLUG group. This, together with the anomalies indicated by soil sampling, suggest the claims should be retained for further investigation.

Further mapping and sampling should be done with some particular attention to the fault zone with apparently associated tin and tungsten anomalies. Further soil sampling might be done on PLUG 10, 11 and 12, and some rock geochemistry should be conducted here to investigate any zones of alteration or mineralization.

The extreme range of topography makes the presentation of the geology difficult. Any further mapping should be conducted on a prepared topographic map.

Respectfully submitted;
J.C. Stephen Explorations Ltd.
for D.C. Syndicate


J.C. Stephen, Manager

LEGEND

CRETACEOUS

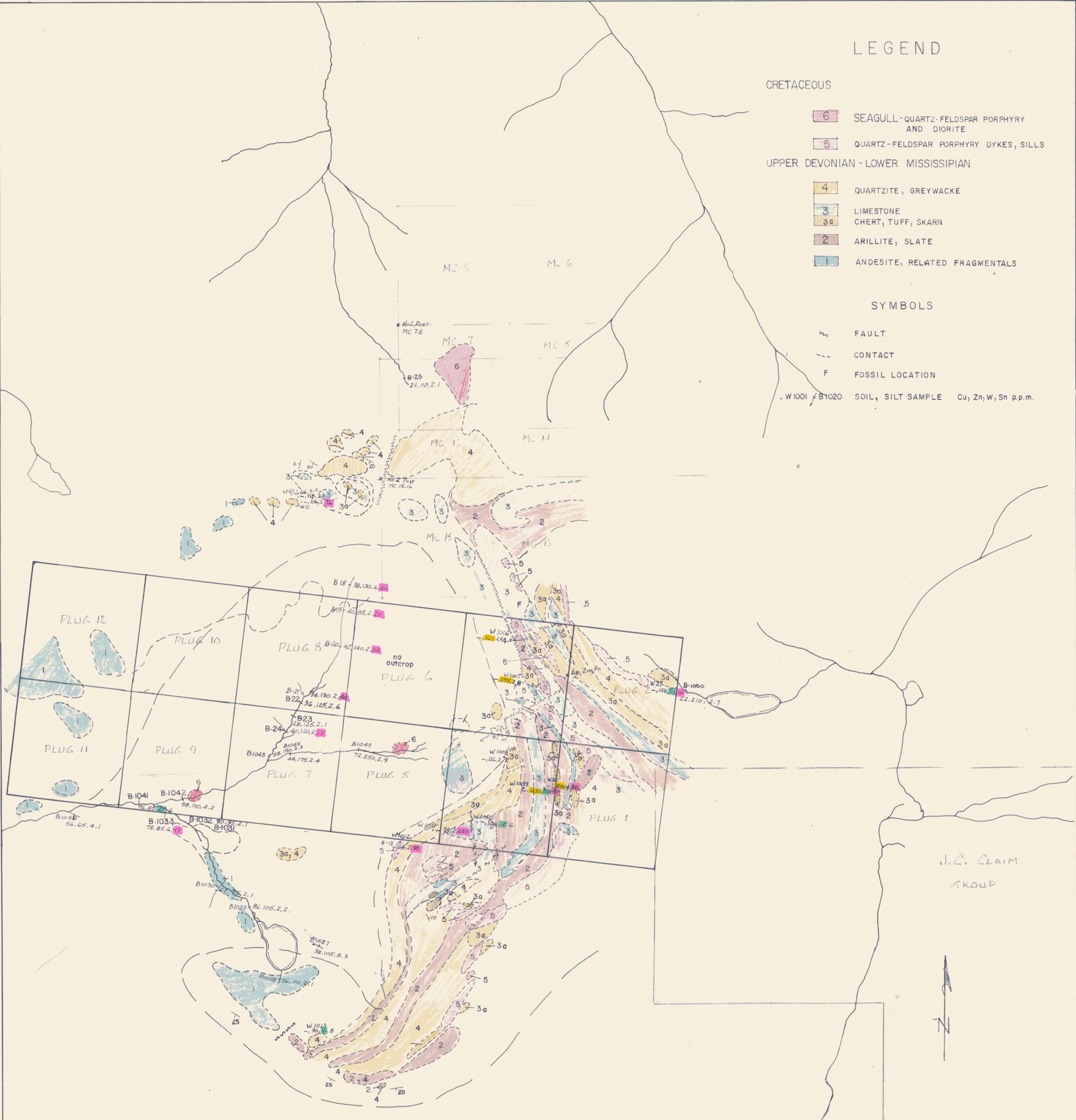
- 6 SEAGULL-QUARTZ-FELDSPAR PORPHYRY AND DIORITE
- 5 QUARTZ-FELDSPAR PORPHYRY DYKES, SILLS

UPPER DEVONIAN - LOWER MISSISSIPPIAN

- 4 QUARTZITE, GREYWACKE
- 3 LIMESTONE
- 3a CHERT, TUFF, SKARN
- 2 ARILLITE, SLATE
- 1 ANDESITE, RELATED FRAGMENTALS

SYMBOLS

- FAULT
- CONTACT
- F FOSSIL LOCATION
- W1001 B1020 SOIL, SILT SAMPLE Cu, Zn, W, Sn p.p.m.



J.C. STEPHEN EXPLORATIONS LTD.

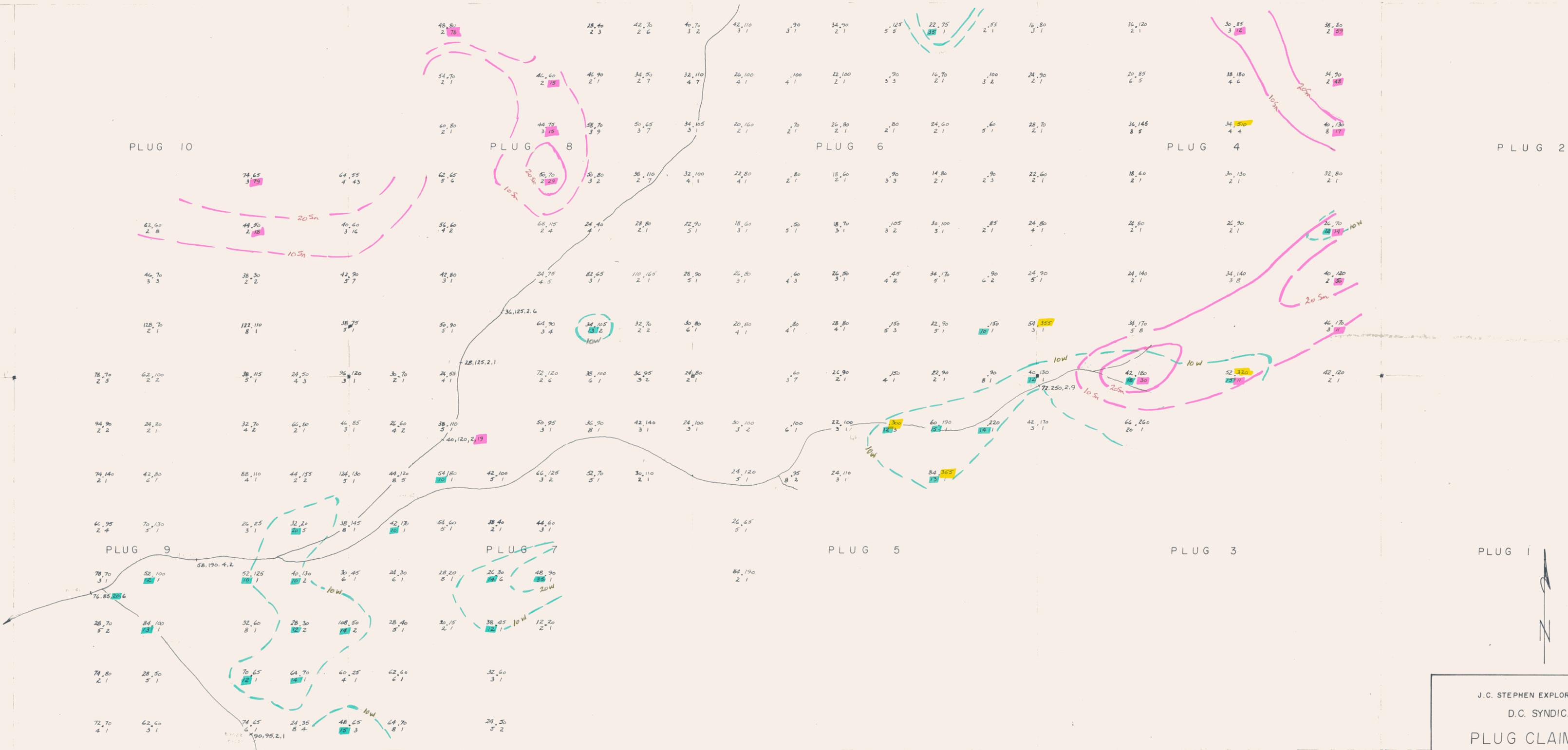
D.C. SYNDICATE
PLUG CLAIM GROUP
GEOLOGY

GEOLOGY BY J.A. TURNER
 REVISED BY J.C. STEPHEN

SCALE: 1" = 660'

AUGUST 1978
 DECEMBER 1978

MAP I



12.90
6.2 = SOIL SAMPLE Cu, Zn PPM
W, Sn

J.C. STEPHEN EXPLORATIONS LTD.
D.C. SYNDICATE
PLUG CLAIM GROUP
GEOCHEMISTRY
Scale: 1" = 200'
March 1979