

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

NTS: 115N/9

ASSESSMENT REPORT

GEOCHEMICAL SURVEY

ON THE

SON PROPERTY

This report has been examined by the
 DAWSON MINING DISTRICT, Y.T.
 MATSON CREEK, AREA

Resident Geologist or
 Resident Mining Engineer

Considered as representation work under
 Section 53, Yukon Quartz Mining Act.



Claims : SON 1 - 40

Latitude : 63°37'N Longitude : 140°26'W

Period of Field Work : August 18 to August 26, 1980

090700

OCTOBER 1980

O. P. Lavin
Geochemist

COMING LTD.

WESTERN DISTRICT

EXPLORATION
Mts: 115N/9

ASSESSMENT REPORT
GEOCHEMICAL SURVEY

ON THE



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 \$ 9,000.00

[Signature]

Resident Geologist or
Resident Mining Engineer

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

[Signature]
B. R. BAXTER
Supervising Mining Recorder

[Signature] Commissioner of Yukon Territory

G. P. Lavin
Geochemist

OCTOBER 1980

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INTRODUCTION

The SON Property consists of 40 claims approximately 66 km south of Dawson, Y.T. situated west of Matson Creek, midway between Glazy Creek and Pine Creek. See Plate 1 for location of the claim group.

Field work for the recent geochemical survey was conducted between August 18th and August 26th, 1980. Three hundred and thirty biogeochemical samples (spruce twigs with needles) and 54 soil samples were collected.

GEOMORPHOLOGY

The SON area is unglaciated, having a mature physiography with rounded slopes. The central stream valley that runs east-west through the property is surrounded by swamp which extends to the south even up low angle slopes. Shallow soils and outcrop are only found on a hill north of the main creek and a north facing slope in the southwest portion of the claim group. Approximately one half of the area has been burnt by forest fire.

GEOCHEMICAL SURVEY

FIELD AND ANALYTICAL TECHNIQUES - BIOGEOCHEMICAL SAMPLES

Ideally, biogeochemical sample locations were at 50 meter intervals along all claim boundaries. At each sample location a composite sample from 2 to 5 spruce trees within a 10 meter diameter was collected. The tips of branches were clipped and placed in a numbered paper lunch bag until the bag was at least half full. The last year's growth could usually be recognized

on the branches by lighter green needles. The branches were clipped at a position of approximately 3 times the length of the last year's growth. Whenever possible, trees less than 2 meters tall were avoided. The upper limit on tree size was automatic as mature spruce trees usually do not have branches close enough to the ground to reach.

Due to the presence of swamps, forest fire burn and windfall, spruce trees could not always be found at 50 meter intervals along the claim boundaries. In these cases, the next group of spruce trees encountered along that line was sampled.

The samples were partially dried in a drying oven for 2 to 3 days, then the drying was completed in a micro wave oven. Groups of 10 samples were placed in the oven for 5 minutes. At this point the needles and twigs were separated and weighed separately. The dried whole samples ranged from 40 to 100 grams of which 15 to 25 percent were usually twigs and the remainder needles. It was decided to analyze all of the twig samples and a select sub-set (20) of the needle samples. The samples were ground to a pulp and ashed. The ash (0.1 g) was digested in HNO_3 and uranium taken up by a solvent extraction procedure, then analyzed for uranium by fluorimetry. Ground, ashed spruce twigs will hereafter be referred to as twigs and ground, ashed spruce needles will be referred to as needles.

FIELD AND ANALYTICAL TECHNIQUES - SOIL SAMPLES

Soil samples were collected at approximately 500 meter intervals along claim boundaries and corresponding to biochemical samples. The soil samples were collected primarily to correlate with the corresponding biochemical samples. The nature of the overburden determined the type of material sampled. On higher ground the B horizon was usually sampled although in some cases only C horizon material was available. In the swampy areas, samples were usually organic-rich peaty material.

The soils were dried, sieved to a minus 80 mesh fraction and analyzed by fluorimetry.

VARIATION IN U AT INDIVIDUAL SAMPLE SITES

Four sample locations were sampled in triplicate to assess the degree of variation at an individual site. At these locations 3 separate trees of the same general description were sampled and the twigs from each tree were analyzed separately. The results are shown in the table below.

Table 1. Results of Replicate Twig Samples from the Same Location

	<u>LOCATION</u> *			
	3000E/2540W	2510E/1250W	1670E/0W	3800E/1320W
U (ppm)	0.8	0.1	0.2	0.5
	0.2	0.4	0.2	0.1
	1.0	0.3	0.9	0.1

* assume the southwest corner of the claim group is the 0,0 position on the grid (metric)

Considering the relatively low concentration levels, the variation in U at a single sample location is not considered to be extreme; however, care must be taken at the interpretation stage not to put too much emphasis on the results of single samples.

The relationship between size of tree and U concentration was also investigated as it has been suggested that the tree size is an important variable when considering the amount of U in a spruce tree sample (Dunn, 1980). At four separate sample locations triplicate samples were collected, one from a small tree (0.5 - 2.0 m), one from a medium sized tree (3 - 10 m) and one from a larger tree (greater than 20 m high and at least 15 centimeters in diameter at the base). The results from these samples are shown below.

Table 2. U in Twigs from Various Size Trees

Tree Size	Location			
	3050E/2960W	2510E/1300N	710E/40N	3500E/2750W
Small	0.8	<0.1	<0.2	0.2
Medium	0.2	<0.1	0.3	0.5
Large	1.5	<0.1	0.2	<0.1

There appears to be no regular relationship between tree size and U concentration. If there is any relationship, it is probably overshadowed by the variation of U in twigs at a single sample site.

DESCRIPTION OF GEOCHEMICAL RESULTS IN ROUTINE SAMPLES

Cumulative frequency diagrams for U in soils, twigs and needles are given in Plate 2. Uranium concentration is highest in the soils with 50 percent of the samples having more than 1.6 ppm U. Values in twigs are generally lower with only 5 percent of the samples having greater than 1.6 ppm U, and needles marginally lower than twigs. The shapes of the cumulative frequency curves for soils and twigs are unusual and definitely not normal in a statistical sense. For both media there appears to be a truncation in the distribution at about 1.0 ppm. Values above 1.0 ppm are unusually sparse considering the shape of the distribution below 1.0 ppm.

Uranium values in soils, twigs and needles are shown in Plate 3. Because of the large degree of variability at a sample site and the widely spaced lines, the values cannot be contoured; however, there are three main areas of higher U in twigs. The most obvious string of high U (greater than 1.3 ppm) samples are located along the southwestern edge of the northern block of claims, particularly where they cross the northern branch of the main creek. A second area of relatively high values is found on a line of samples taken along the northwestern edge of the claim group. A more diffuse area of high values is found at the western edge of the claim group.

The correspondence between U in twig samples and soil samples is relatively weak, but there appears to be even less of a relationship between U in twigs and needles from the same sample. The comparative data are provided in Table 3.

A tentative explanation of this spurious relationship is that variation of U in needles is extreme and therefore results tend to appear as random numbers, whereas twigs and soils could be more faithfully reflecting U in the hydrosphere.

INTERPRETATION OF GEOCHEMICAL RESULTS

The strongest anomaly in twigs is found approximately 400 m northeast of the confluence of the two major drainages in the area. Anomalous samples are found on the creek valley floor and at higher elevations on freely drained ground. It is believed that the anomalous values could represent subcropping mineralization.

CONCLUSIONS

Three areas within the SON claim group show higher levels of uranium (≥ 1.3 ppm) in spruce twig samples. These areas are believed to represent a bedrock source of U.

Although outcrop is generally sparse on the property, overburden is relatively shallow north of the creek, and mapping of outcrop and rock fragments in soil would probably be helpful in defining more exactly the geological setting and stratigraphy.

Report by:

O.P. Lavin

O. P. Lavin
Geochemist

Endorsed by:

G. Harden

G. HARDEN
Manager, Exploration
Western District

30 October 1980
OPL/jel

Distribution:

Mining Recorder (2)
Western District (1)
O.P. Lavin
File

C A N A D A
YUKON TERRITORY
TO WIT:

STATUTORY DECLARATION

I, ROBIN LAWSON WOODS, of the District of North Vancouver, in the Province of British Columbia, DO SOLEMNLY DECLARE THAT:

1. I am the Supervisor, Exploration Accounting for Cominco Ltd., 2300 - 200 Granville Street, Vancouver, British Columbia, and, as such have knowledge of the facts deposed to herein.
2. Attached to this Statutory Declaration, as Schedule A, is a statement of expenditures indicating the expenditures charged by Cominco Ltd. to the Son Property account for the period January 1, 1980 to November 30, 1980.
3. The statement of expenditures referred to in paragraph 2 is true and accurate to the best of my knowledge, information and belief.
4. This Statutory Declaration is made in support of an application for a Certificate of Work pursuant to the Yukon Quartz Mining Act.

AND I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

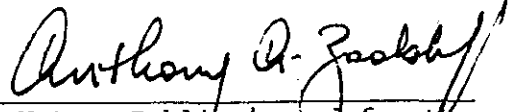
DECLARED before me at the City)
of Vancouver in the Province)
of British Columbia, this *12th*)
day of *December* 1980)

Anthony G. Zook
A Notary Public in and for the
Province of British Columbia



Robin Lawson Woods

This is Schedule A referred to
in the Statutory Declaration
of ROBIN LAWSON WOODS
declared before me this 12th day
of December, 1980


A Notary Public in and for the
Province of British Columbia

STATEMENT OF EXPENDITURES


SON PROPERTY

DAWSON M.D., YUKON

JANUARY 1, 1980 TO NOVEMBER 30, 1980

Geochemistry	\$5,658
Transportation	2,075
Camp costs	506
Tenure	498
Administrative services	874
	<hr/>
	\$9,611
	<hr/> <hr/>

Cominco Ltd.
Vancouver Office
December 10, 1980
Copies: Mining Recorder (2)
Senior Technician
File (2)



Robin Lawson Woods
Supervisor,
Exploration Accounting

STATEMENT OF QUALIFICATIONS

I, Owen Lavin, of the City of Kingston, in the Province of Ontario, hereby certify:

1. That I am a geochemist residing at 15 Adelaide St., Kingston, Ontario with business address at 853 - 409 Granville Street, Vancouver, British Columbia.
2. That I graduated with B.S. degree in geology from the Eastern Washington University in Cheney, Washington, 1973 and a M.Sc. degree in geology from Queen's University in 1976.
3. That I have been practising geochemistry with COMINCO LTD. from Spring 1980 to the present.

DATED THIS 1 DAY OF NOVEMBER, 1980 AT VANCOUVER, BRITISH COLUMBIA.

Owen Lavin

Owen Lavin
Geochemist

COMINCO LTD.

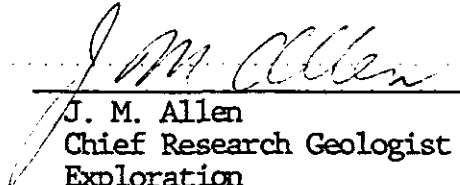
EXPLORATION

WESTERN DISTRICT

SUPPORTING STATEMENT OF QUALIFICATIONS

I, J. M. Allen, Chief Research Geologist for COMINCO LTD., Exploration, of 409 Granville Street, Vancouver, British Columbia, hereby declare that Mr. O. P. Lavin has participated in and supervised the geochemical survey on the SON property, Dawson Mining District, Y.T. He has also written the assessment report for this work.

Mr. O. P. Lavin has a M.Sc. Degree in Exploration Geochemistry and he is terminating a Ph.D. program in the same specialty. I consider him to be a competent geochemist who is well qualified to perform work described in this assessment work report.



J. M. Allen
Chief Research Geologist
Exploration

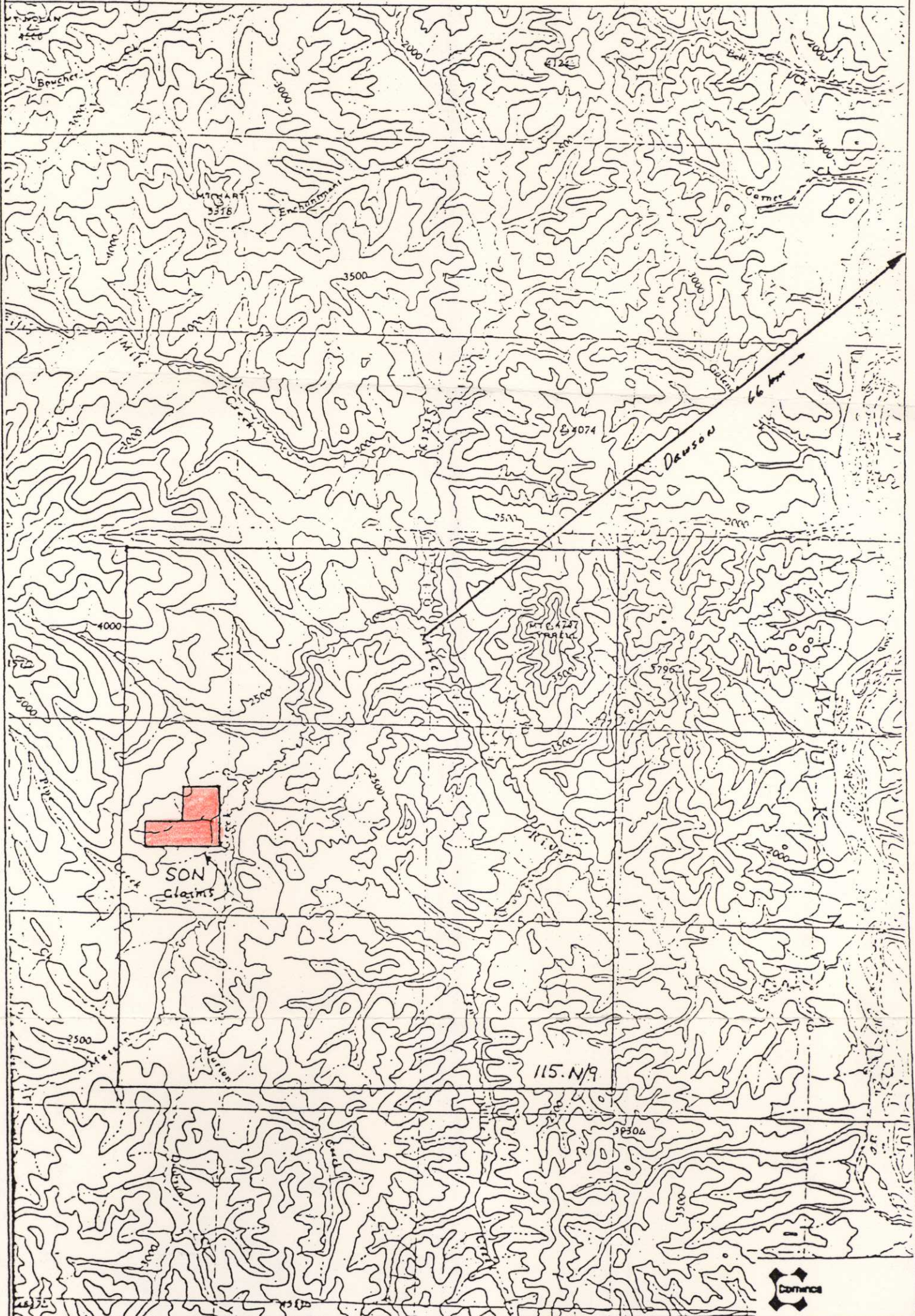
November 25, 1980

30'

15'

140°00'

45'



SON
claims

Dawson
6.6 km

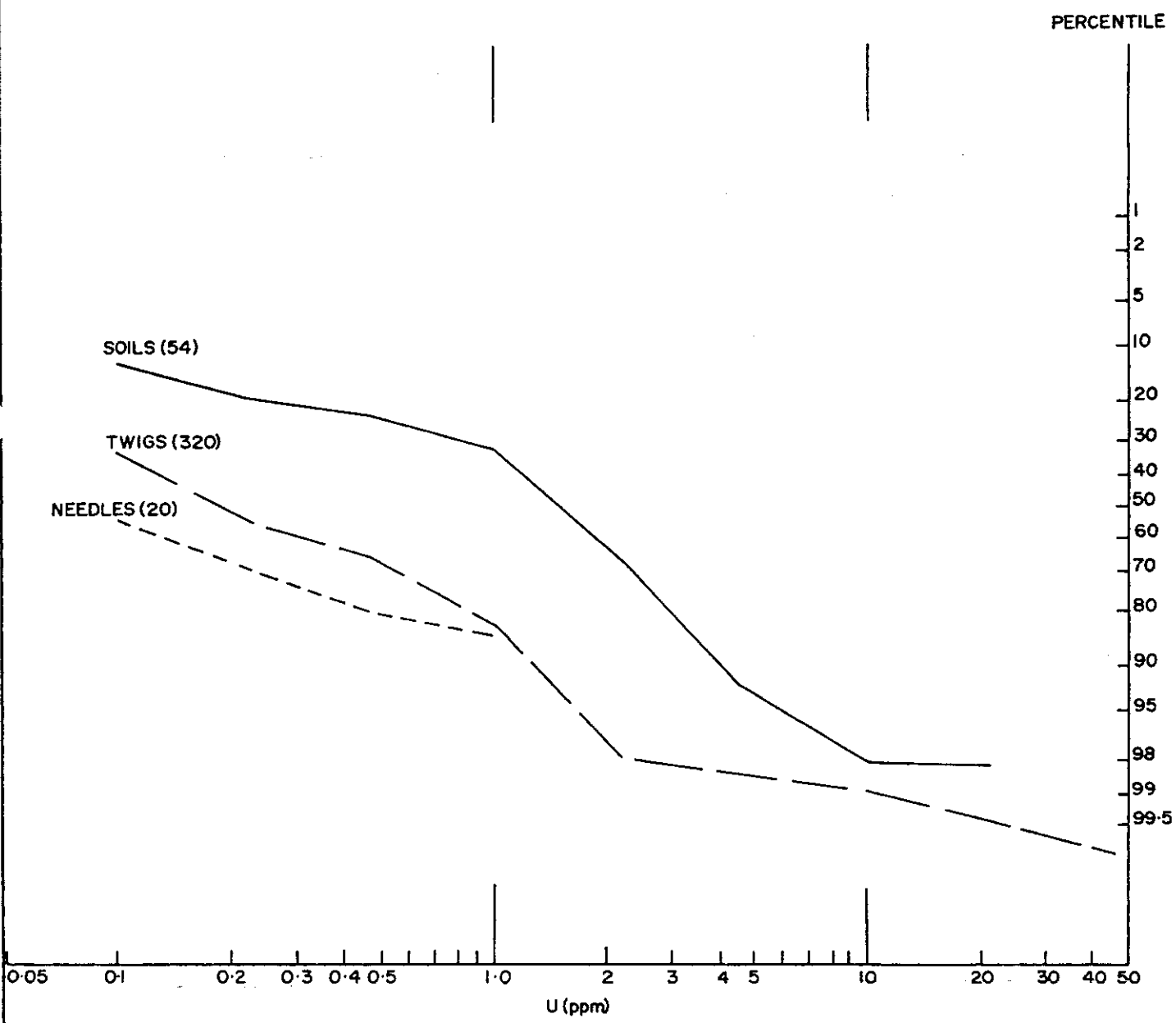
115.N/9



Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

SON Claims
location map
DPL

Scale: 1:250,000 Date: 10/10/80 Plate 1



Drawn by:		Traced by: M.J.D.	
Revised by	Date	Revised by	Date

SON CLAIMS · GEOCHEMISTRY
CUMULATIVE FREQUENCY DIAGRAMS FOR URANIUM IN SOILS, SPRUCE TWIGS
AND SPRUCE NEEDLES

OPL

Scale: _____ Date: OCT 1980 Plate: 2

