

GM 33904

1978 FIELD WORK, LAC COSTEBELLE PROJECT

Documents complémentaires

Additional Files



Licence



License

Cette première page a été ajoutée
au document et ne fait pas partie du
rapport tel que soumis par les auteurs.

Énergie et Ressources
naturelles

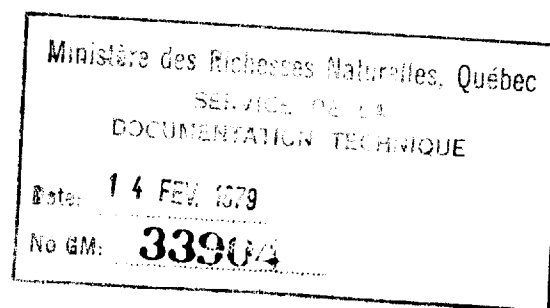
Québec 

ESSEX MINERALS COMPANY

LAC COSTEBELLE PROJECT

1978 FIELD WORK

SUMMARY REPORT



August 14th, 1978

S.L. Tihor

TABLE OF CONTENTS

- 1.0 Introduction.
- 2.0 Conclusions and Recommendations.
- 3.0 Field Program.
- 4.0 Program and Results.
 - 4.1 Area C.
 - 4.2 Area B North.
 - 4.3 Area A.

References.

Appendix I. Drill Logs and Analytical Results.

Maps.

1.0 INTRODUCTION

In 1976, Essex Minerals Company acquired a group of 684 claims, around and to the south of Lac Costebelle, Comte Duplessis, in Eastern Quebec. The claims covered airborne radiometric anomalies detected during a regional survey carried out in 1975 by the Geological Survey of Canada.

During 1977, a close spaced airborne radiometric survey supplemented by ground surveys and geological mapping delineated four separate areas of anomalous radioactivity within the claim group. These anomalous areas were designated Areas A, B North, B South and C. The original claim group was reduced to two smaller groups containing a total of 232 claims; one to the west and south of Lac Costebelle, covering Areas A, B North and B South, and a second group on the west side of the Nabisibi River, covering Area C. (see map 1).

The 1978 program consisted of diamond drill testing of Area C on a semi detailed basis and reconnaissance drill testing of Areas A and B North. Thirty four short, relatively large diameter holes and five deeper, standard diameter holes were drilled in Area C, four standard diameter holes were drilled in Area B North and two holes were drilled in Area A, for a total of 3066 feet in rock.

2.0 CONCLUSIONS and RECOMMENDATIONS

Drilling in Area C confirmed that the red granite of that area (Tihor, 1977) is the source of the anomalous radioactivity and the host for the uranium mineralization in Area C. The average U_3O_8 content of samples of red granite obtained from the drill holes is .005%, and the range of individual samples is from .001 to .034%. The drilling program was not designed to delineate and define the ultimate limits of the red granite, but it did confirm that the granite does occur in relatively large bodies of mineable dimensions and that the shape of these bodies, in three dimensions, is extremely irregular.

Drilling in Area B North was of a reconnaissance nature and was intended to confirm the continuity in depth of the white granite which the 1977 work indicated was the host for the U_3O_8 mineralization of that area and to obtain samples of the white granite. The white granite persists to a depth of at least 100 feet and probably much further. The average U_3O_8 content of the white granite is .014%, and the range of values in individual samples was from .001 to .027% U_3O_8 . The uranium values tend to be uniformly distributed through the white granite, although some concentration is associated with coarse biotite segregations. Geological mapping in Area A indicated that uranium values in that area are associated with a white granite which appeared to occur in a westerly dipping dike-like body. Drilling results did not confirm the projected distribution of the white granite and indicates that the geology of the area is more complex than previously expected. Only one significant interval of white granite was encountered in the drilling (hole 78-A-1 from 18.8 to 28.5 meters) and this sample contained .047% U_3O_8 .

Although relatively large bodies of uraniferous rock occur in Areas B North and C, the uranium content of these rocks is low when compared with the uranium content of present and projected sources of uranium. The next steps in evaluating the economic potential of the Lac Costebelle area uranium concentrations should be mineralogical and metallurgical testing to determine the extent to which the uranium values can be extracted from the rock, followed by preliminary studies to determine whether mining and processing of these low-grade uraniferous rocks can be done profitably at present and projected prices for uranium oxide.

There is no evidence of any significant supergene redistribution of uranium, or of any significant variation of uranium content with depth, in the Costebelle area.

3.0 FIELD PROGRAM

The 1978 field program consisted of diamond drilling in Area A, B and C and a topographic survey of a portion of Area C. The camp was established on the Nabisibi River adjacent to Area C in late April and was occupied by the field crew on May 17th.

Drilling was carried out by Canadian Longyear Limited. The drill equipment was moved in by May 20th and drilling started on May 24th. A Longyear "38" skid mounted drill was used. In Area C, the moves between holes were accomplished with a small caterpillar tractor and a muskeg tractor. In Areas A and B North, the equipment was moved with a Bell 204 helicopter.

Thirty four vertical HWG diameter holes (core diameter - 3 inches) were drilled to a depth of about 30 feet in bedrock in Area C, with standard equipment. Five vertical wireline BQ diameter holes (core diameter - 1 3/8 inches) were also drilled to a depth of 200 feet in Area C. Four vertical holes, each 100 feet deep, were drilled in Area B North, and two inclined holes, each 200 feet deep were drilled in Area A. The total footage drilled was 3066 feet. Core recovery was virtually complete.

Core was logged geologically and radiometrically. Radiometric logging was performed with a McPhar Spectra 44 D spectrometer using a 76 x 76 mm crystal. Because background readings in the camp were relatively high, and would fluctuate within a wide range over periods of a few seconds, it was therefore necessary to shield the instrument. In practice, a five gallon pail was immersed in a water-filled forty-five gallon drum,

creating a "dry hole" in the water. The detector crystal and the section of core to be read were placed side by side in the pail. Counting time was 60 seconds. Core pieces used for the radiometric logs were taken at intervals of 25, 50 or 100 cm, depending upon rock type, and were about 10 cm long.

The radiometric logging of the core, as a method of estimating the amounts of uranium present, proved to be highly unreliable due to three main factors:

1. the low concentrations of radioactive elements in the core;
2. the high ambient background radiation; and
3. the incompatible geometry of the cylindrical drill core and the square detector crystal housing.

Of the 23 holes from Area C which were systematically logged radiometrically, only 22% showed a positive correlation between the highest radiometric assay in the highest chemical (XRF) assay.

After the core was geologically and radiometrically logged, representative sections of core 2 to 10 cm in length were taken and preserved as a skeleton log. The remainder of the core was sent to the laboratory to be crushed and analyzed. A sample preparation lab was set up in Aguanish where core was crushed and ground to minus 40 mesh. A two kilogram split was sent to Montreal for analysis and the remainder of the crushed core was stored. In addition, a composite sample of fines from each hole was analyzed. Analysis was by semi-quantitative X-ray fluorescence methods. The sample preparation facility was operated under contract by Metriclab of Montreal, and analyses were performed by the same organization. At the present time, the skeleton logs and a two kilogram split from each sample are stored in Aguanish.

The topographic survey in Area C was carried out with an electronic level supplied by Edwin Gaucher Ltd. of Quebec.

Helicopter support was provided throughout the program with a Bell G 47 A operated by Helicopters Les Ailes du Nord from Sept Iles. In addition, a Bell 206 B and a Bell 204 from the same organization were used from time to time.

The drilling was completed on July 8th, 1978 and all equipment was removed from the field by July 12th.

The program was carried out under the supervision of Ms. Sharon Tihor. Mr. Robert A. Quartermain was program geologist, assisted by Mr. William D. Love and Ms. Susan Yatabe.

4.0 PROGRAM and RESULTS

4.1 Area C. (Map 2a)

Area C lies about 1 km west of the Nabisibi River and 6 km north of the Gulf of St. Lawrence. The area of interest is about 1 km by 1.5 km and is included within claims 364127 - 2 and 3, 364130 - 3 and 4, and 364131 - 3 and 4. The area is underlain by granitic gneiss and paragneiss which surround and enclose large irregular bodies of a red, coarse grained granite. The red granite is the source of the anomalous radioactivity in Area C.

Area C was tested with 34 relatively short (30 feet in bedrock) HWG diameter and 5 deeper (200 feet) BQ diameter diamond drill holes. The purpose of these holes was to obtain representative rock samples for analysis and to determine the continuity of the granite with depth and between outcrops. The distribution of the red, coarse grained granite in Area C, as determined by the geological mapping and drilling, is shown in Map 2a. The drill logs and analytical results are in appendix I.

In general the drilling showed that the red, coarse grained granite is irregular in depth, with thicknesses of less than one or more than 60 meters being encountered in the drill holes. The more persistent zones in length and depth, occur along the east side of line 114 S and the west side of line 115 S and 116 S. The drilling did not show conclusively that these zones are part of the same larger zone. Of the thirty-nine holes drilled in Area C, 26 were mostly or entirely in red granite.

There are two main phases of the red granite: a very coarse grained phase with the feldspars ranging up to 5 cm in size, and rare bastnaesite; and a more medium grained 0.2 to 1.0 cm equigranular phase containing bastnaesite, zircon, magnetite and rare molybdenite. The medium grained red granite is the principal host for the uranium, which appears to be associated with zircon and bastnaesite.

Assay results indicate that the uranium content of the red granite is generally very low. Only about 10% of the 286 samples analyzed from Area C contained more than about 0.25 lb/ton U_3O_8 from the crushed core samples. The overall average for the composite fines was a little higher at .007% or 0.14 lb/ton. However, the values for the fines represent a very much smaller volume of sample.

4.2 Area B North (Map 2b)

Area B north lies on the north side of a small bay in the south-west corner of Lac Costebelle. The area of interest is about 700 m long and 500 m wide and is included in claim 364057 - 2. The area is underlain by white, coarse grained granite and augen gneiss. The white granite is the source of the radiometric anomalies.

Area B north was tested with four 100 foot BQ diameter drill holes. The purpose of this drilling was to test the depth and continuity of the white granite at the strongest radiometric anomalies, as well as to obtain samples for analysis. The distribution of the white granite in Area B north, as determined by geological mapping and drilling, is shown on Map 2b. The drill logs and analytical results are in appendix I.

In general, the drilling showed that the white granite is quite continuous down to 30 meters, with sections of augen gneiss and amphibolite up to about 5 meters in thickness within the granite. White granite, with associated and equally radioactive augen gneiss, makes up 95% of the rock drilled in Area B north, and three of the four drill holes ended in the white granite.

Hole 78-B-3 ended in amphibolite. There is a 10 meter thick amphibolite body, enclosed by white granite and augen gneiss crops out on the hillside south of the drill hole. If the amphibolite encountered in the drill hole is the same body which crops out on the hillside, then a continuation of hole 78-3-B should encounter white granite below the amphibolite.

The radiometric logging of the core from Area B north indicated a higher, and much more consistent uranium content than Area C. The U/Th ratio is also higher in Area B north than in Area C.

The XRF assay results from Area B north confirmed the higher and more consistent uranium content in the rocks from Area B as compared to those from Area C. The overall average value of the U_3O_8 analyses for the white granite is 0.014% or .28 lb/ton and most of the individual sample results do not vary much from this value. The U_3O_8 values obtained from the composite fines samples was considerably greater at 0.08% or 1.6 lb/ton.

4.3 Area A. (Map 2c)

Area A lies on the east side of the southern extension of Lac Costebelle. The area of interest is about 800 m long and 300 m wide and is included in claims 364066 - 1 and 364071 - 3. The area is underlain by granite-gneiss and white, coarse grained granite, both of which show anomalously high radioactivity.

Area A was tested with two 200 foot BQ diameter drill holes set at 60° off horizontal and drilled grid east. These holes were designed to test the depth extensions and continuity of zones of anomalous radioactivity which appeared to be associated with westerly dipping bodies of white granite in a granite-gneiss host rock. The distribution of the various rock types as determined by geological mapping and drilling is shown on map 2c. The drill logs and analytical results are in appendix I.

In general, the drilling showed that the geology of this part of Area A is more complex than was indicated by the surface mapping. Outcrop in the area of hole 78-A-2 is patchy and some of the rock which was mapped as granite-gneiss in surface exposures may in fact be the more felsic portion of the paragneiss. Hole 78-A-2 was collared in paragneiss and remained in paragneiss through most of its length. Hole 78-A-1 encountered augen gneiss and amphibolite over most of its length and only minor sections of white granite.

The radiometric logs and the analytical results show consistently low values of uranium and other radioactive elements in the core

from Area A. The single exception was a sample of white granite from hole 78-A-1 which contained .047% U_3O_8 . This 10 meter section of white granite is similar to the white granite in Area B north in its U/Th ratio, higher U values in the radiometric log, and higher U_3O_8 (XRF) assay (.047%). In the other rocks encountered in the holes, the U/Th ratio was similar to the rocks in Area C.

S.L. Tihor,

S.L. Tihor.

REFERENCES

Tihor, S.L. 1977 Summary Report. Essex Minerals Company,
Lac Costebelle Project - 1977 Field Work.
Company Report.

A P P E N D I X I

Drill Hole Logs and Analytical Results

Note: 1. Geological and Radiometric logs in meters.

2. Assay results in percent.

3. Horizontal lines in Geological log:

- solid line - rock type division

- dashed line - variations within a rock type

4. Cross hatched sections in log column indicate where piece of core was removed for skeleton log.

5. Solid horizontal lines in sample and assay columns indicate sample length.

6. Collar elevations relative to a point on the base line at 108 + 00S which was given the arbitrary value of 100. Values are in meters.

Ministère des Richesses Naturelles, Québec
SERVICE DE LA
DOCUMENTATION TECHNIQUE

Date: 14 FEV, 1979

No GM: 33904

78-6-1

CLAIM #
364130-3

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS %	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	ThO ₂
0	3.31	Coarse Red Granite- light red color, grain size up to 3 cm. Felsic portion- impure euhedral salmon red feldspars(orthoclase), up to 3 cm; smokey grey to green transparent anhedral quartz, up to 1 cm. Mafic portion- consists of four black minerals; Biotite, magnetite, zircon and bastnaesite. Biotite is largely sub to anhedral, 3mm to 2 cm, magnetite is anhedral 2mm to 1 cm. Both zircon(up to .5 cm) and bastneasite (up to 1.5 cm) have well formed euhedral crystals. Alteration- minor chloritization of biotite and some minor epidote associated with the biotite; minor alteration of magnetite to hematite. Mineral percentages; feldspar 60, quartz 25, biotite 10, magnetite 2, bastnaesite 3, zircon 1, epidote 1.		0.25 0.50 0.75 1.00 1.25 1.50 1.75					40	0	1.81	.003	.007
1.72	1.87	....more biotite rich section , fine to coarse grained, contact to above at 86° to core and minor foliation continues through section and stays approximately perpendicular to the core axis. Biotite makes up about 15% of the rock, shows minor chloritization and some brownish alteration which may be vermiculite.		2.00 2.25 2.50					41	1.81	3.62	.002	.008
1.87	2.12	....coarse red granite continues as described above 0-1.72 with less bastnaesite and more biotite.		2.75									
2.12	2.22	....this section contains up to 25% biotite in books up to 4 cm. Other mafic minerals were not seen.		3.00									
2.22	3.17	....similar to 0-1.72, fracture cuts core at 60° at 2.97.		3.25									
3.17	3.31	...core ground and fractured into pieces .5 cm to 6 cm.		3.50									
	3.31	....contact 90° to core axis											
3.31	3.44	Biotite Rich Granite- black, salmon red and light grey, grain sizes from 1mm to .5 cm. Felsic portion - light grey to salmon red feldspars, white to grey quartz. Mafic portion- euhedral biotite flakes 2mm or less foliation approximately perpendicular to core. Alteration- some biotitesurfaces with brown alt. Mineral percentages; feldspar 25, quartz 25, biotite 50.		3.75 4.00 4.25					42	3.62	4.15	.001	.007
				4.50					43	4.15	5.22	.002	.004

[illegible]

[illegible]

GEOLOGICAL LOG BY R. Quartermain DATE May 29/80 HOLE #
RADIOMETRIC LOG BY _____ DATE _____ 78C-2

CLAIM #
364/31-3

[illegible]

[illegible]

[illegible]

[illegible]

B. Shaktin

GEOLOGICAL LOG BY R. Quartermain DATE 30/5/78 HOLE #
RADIOMETRIC LOG BY _____ DATE _____ 78-C-3

CLAIM #
364131-3

[illegible]

[illegible]

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain

DATE 31/5/78

HOLE #

RADIOMETRIC LOG BY _____

DATE _____

78-C-4

LAT. 115°00S LONG. 1°72E COLLAR ELEV. 97.43 DEPTH 10.75 m DIP 90° CORE SIZE HW CORE RECOVERY 96 %

CLAIM #
364130-4

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	2.34	RED MEDIUM GRAINED GRANITE Black to red, medium grained (a few grains up to 2 cm. occur), relatively equigranular. Felsic portion: white to red, sub to euhedral, .5-2 cm. K-feldspars; smoky grey to clear, anhedral, .3-1 cm. quartz. Mafic portion: three minerals--black, subhedral, 1-5 mm. biotite; black, euhedral, .5-1.5 cm. bastnaesite; grey, sub to anhedral, .2-1.5 cm. magnetite. There is an altered fracture at 1.67 at 45° to core with chlorite and vermiculite on the surface. Mineral percentages: Felsics: K-feldspar 50, quartz 35. Mafics: magnetite 8, biotite 5, bastnaesite 1, chlorite 1, vermiculite 4, others (hematite) 1. .....the granite has xenoliths of paragneiss (see 78-C-2) up to 10 cm by 6 cm on core surface. .....the granite is red, essentially equigranular and consists of red K-feldspars 50%, smoky quartz 35, grey magnetite 13, black biotite 2. .....contact at 24° to core. (Gradation into paragneiss over 5 cm).		0.25					9	0	2.34	.004	.016	
				0.50										
				0.75										
				1.00										
				1.25										
				1.50										
				1.75										
0	.75			2.00										
1.70	2.25			2.25										
	2.34			2.50						10	2.34	3.06	.004	.008
2.34	10.75	PARAGNEISS Purple, fine grained, equigranular. Felsic portion: consists of white to light red, subhedral, 1-2 mm, K-feldspar and smoky grey to clear anhedral 1-2 mm quartz. Mafic portion: biotite--black, 1-2 mm. subhedral. Within this section there are zones, some coarse grained and more felsic; others more mafic. Described below. Foliation of biotite grains varies from 27° to core near surface to 18° at 3.51 m, 30° at 5 m., and 20° at 6.5 m. Minor chloritization of biotite, predominantly along fractures. Mineral percentages: Felsics- K-feldspar 45, quartz 35. Mafics- biotite 20, chlorite 4. .....a medium-grained felsic layer at 27° to core with		2.75										
				3.00										
				3.25						11	3.06	3.36	.001	.001
				3.50						12	3.36	4.02	.001	.006
				3.75										
				4.00										
2.81	2.86			4.25						13	4.02	5.46	.003	.016
				4.50										

[illegible]

CLAIM #
364131-4

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

GEOLOGICAL LOG BY R. Quartermain DATE 2/6/78 HOLE # 78-C-7
RADIOMETRIC LOG BY _____ DATE _____

CLAIM #
364131-4

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
		grained. Felsic portion consists of pink to red .2-.8cm, subhedral K-feldspars and clear to smoky, .2-.5cm, anhedral quartz. Mafic portion consists of black, .1-.8cm, subhedral biotite and grey, .2-.4cm anhedral magnetite; Mineral percentages: K-feldspar 45, quartz 25, biotite 25, magnetite 5, Minor alteration of biotite to chlorite. 4.00 ....contact over 3 cm.		4.75					35	4.61	6.40	.009	.053	
				5.00										
				5.25										
				5.50										
4.00	4.50	MEDIUM TO COARSE RED GRANITE		5.75										
4.00	4.34	Similar to 2.43-253 except 5% more biotite.		6.00										
	4.34	....contact over 3cm.		6.25										
	4.34	...biotite-rich section. Similar to 3.45-3.70, but only 2% magnetite.		6.50										
	4.50	....contact over 3 cm.		6.75										
4.20	7.38	COARSE RED GRANITE		7.00										
4.20	4.62	....similar at 3.70-4.04.		7.25										
	4.62	....contact over 3cm.		7.50					36	6.40	7.04	.001	.018	
4.62	4.82	....biotite-rich section. Similar to 4.04-4.20.		7.75										
4.82	6.68	....bastnaesite increases in abundance up to 5%.		8.00										
	6.68	....contact gradual over 5 cm.		8.25										
6.68	7.38	....red, coarse-grained (1-3cm). Felsic portion: pink to red, 1-3cm, striated, hematite-stained K-feldspar and smoky grey to clear, 1 cm, anhedral quartz. Mafic portion: black, subhedral, .2-.8cm biotite; grey .1-.3cm anhedral magnetite; and a silver-grey, .1 mm anhedral disseminated mineral--a minor chloritic alteration of biotites. Mineral percentages: Felsics- K-feldspar 50, quartz 35. Mafics- biotite 10, magnetite 2, chlorite 2, ?-- 7.38 ....contact gradual.		8.50					37	7.04	8.65	.011	.090	
				8.75										
				9.00										
				9.25										
7.38	10.57	MEDIUM RED GRANITE												
	8.27	Similar to 0-6.38.												
	8.42	....biotite-rich zone, similar to 3.70-4.04.												
	10.57	End of hole.							38	8.65	10.27	.009	.024	

HOLE #
78-C-7

[illegible]

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain

DATE 3/6/78

HOLE #

RADIOMETRIC LOG BY _____

DATE _____

78-C-8

CLAIM #	DESCRIPTION	DATE	AMOUNT	STATUS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

LAT. 115+00S LONG. 4+43 E COLLAR ELEV. 101.38 DEPTH 9.96 m DIP 90° CORE SIZE HW CORE RECOVERY 93

[illegible]

[illegible]

[illegible]

DATE 3/6/78

CLAIM #
364131-4

CLAIM #
364131-4

[illegible]

[illegible]

[illegible]

GEOLOGICAL LOG BY R. Quartermain DATE 5/6/78 HOLE #
RADIOMETRIC LOG BY _____ DATE _____ 78-C-10

CLAIM #
364131-4

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	FROM	TO	U ₃ O ₈			
				4.75										
				5.00										
				5.25										
				5.50										
				5.75					69	5.46	7.06	.004		
				6.00										
				6.25										
				6.50										
				6.75										
				7.00										
				7.25					70	7.06	8.52	.004		
				7.50										
				7.75										
				8.00										
				8.25										
				8.50										
				8.75					71	8.52	10.30	.004		
				9.00										
				9.25										

Feldspars are approximately 50:50 white to red grains. Fractures at 4.26 and 5.14 are at 10° to core. There is a fine zone from 4.26 to 4.50 with grain size \leq .3cm.

Mineral percentages:

Felsics- K-spar 50, quartz 25.

Mafics- biotite 10-15, bastnaesite 1-3, hematite 5, magnetite 2-5, tourmaline 1-2, zircon 1, molybdenite--trace.

.....contact at 40° to core.

BIOTITE SCHIST

Black, fine-grained (.1-.2cm).

Felsics: white subhedral, .1-.2cm, K-spars and white to clear, anhedral, .1cm quartz. Black euhedral .1-.2cm biotite and black .2cm anhedral magnetite form the mafic portion.

Alteration of biotite to chlorite. Minor pyrite and chalcopyrite mineralization. The foliation is sub-parallel to core--approximately 10° and the section is cut by a 2cm quartz vein at 7.50 meters.

Mineral percentages:

Felsics- K-spar 20, quartz 15.

Mafics- biotite 60-65, magnetite 1-2, pyrite 1, chalcopyrite--trace.

GEOLOGICAL LOG BY <u>R. Quartermain</u>	DATE <u>4/6/78</u>	HOLE # 78 - C - 11.
RADIOMETRIC LOG BY _____	DATE _____	

CLAIM #	364131-4
---------	----------

[illegible]

[illegible]

[illegible]

HOLE #
78 - C - 12

CLAIM #
364131-3

[illegible]

[illegible]

[illegible]

DATE _____


CLAIM #
364131-4

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	11.56	COARSE RED GRANITE Red, medium to coarse-graine (.5-2cm). Felsic portion: pink to red, .5-2cm,sub to euhedral, striated, limonite-stained K-spars and smoky green to grey, .5-1cm, anhedral quartz. Mafic portion: black, .2-1.3cm subhedral biotite; black,euhedral .5cm bastnaesite; black, subhedral .4-.8cm tourmaline (?); black, euhedral .2cm zircon; red, .3cm anhedral hematite; grey, .5cm anhedral magnetite; minor silver-grey, .1cm,euhedral molybdenite. Minor alteration of biotite to chlorite and vermiculite. Hematite staining occurs between K-spar grains and minor kaolinization of K-spars near top of hole. Mineral percentages: Felsics- K-spar 45-55, quartz 25-30. Mafics- biotite 10-12, hematite 2-3, chlorite 2-3, bastnaesite 2, magnetite 2, tourmaline 1-2, vermiculite 1, zircon 1, molybdenite--trace.		0.25					100	0	2.10	.006		
				0.50										
				0.75										
				1.00										
				1.25										
				1.50										
				1.75										
				2.00										
				2.25					101	2.10	4.20	.004		
				2.50										
				2.75										
				3.00										
				3.25										
				3.50										
				3.75										
				4.00										
				4.25										
				4.50					102	4.20	6.30	.009		

[illegible]

[illegible]

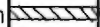
[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
23.17	24.09Interlayed coarse grey granite and paragneiss. Granite similar to 19.36-19.66.		23.75										
				24.00										
				24.25										
				24.50										
				24.75										
				25.00										
24.70	25.91Medium grey granite. Similar to 19.36-19.66.		25.25										
				25.50										
				25.75										
				26.00										
				26.26										
				26.50										
26.52	27.72Coarse Red Granite Felsic portion: red, .5-1.5cm K-spar 50-55%; white to gray .5cm quartz 30%. Mafic portion: grgy, .5cm magnetite 15%. Upper contact at 85° to core; lower at 65° to core.		26.75					110	26.60	31.60	.005		
				27.00										
				27.25										
				27.50										
				27.75										
				28.00										
	27.44banding at 25° to core.		28.25										

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
33.54	37.50biotite up to 30% of core.		33.25										
				33.50										
				33.75										
				34.00										
				34.25										
				34.50										
				34.75										
				35.00										
				35.25										
				35.50										
				35.75										
				36.00										
				36.25										
				36.50										
				36.75										
				37.00										
				37.25										
				37.50										
				37.75										

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	井	FROM	TO	U ₃ O ₈		
44.36	42.68banding at 35° to core.		42.75										
				43.00										
				43.25										
				43.50										
				43.75										
				44.00										
				44.25										
				44.50										
				44.75										
				45.00										
				45.25										
				45.50										
				45.75										
				46.00										
				46.25										
				46.50										
				46.75										
				47.00										
				47.25										
					a gentle S-shaped fold. Upper limb at 25° to core, common limb 10-15° to core, bottom limb 20° to core.								

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				47.50										
				47.75										
				48.00										
				48.25										
				48.50										
				48.75										
				49.00										
	49.39	.....contact at 30° to core.		49.25										
49.32	55.34	BIOTITE SCHIST Black, fine-grained, equigranular. Felsic portion: clear, .1cm sub to anhedral feldspars 40%; clear to grey, .1cm anhedral quartz 10%. Mafic portion: black, euhedral, .1cm biotite 50%. Minor trace of pyrite and alteration of biotite to chlorite. Banding is 28° to 34° to core.		49.50										
				49.75										
				50.00										
				50.25										
				50.50										
				50.75										
				51.00										
				51.25										
				51.50										
				51.75										
				52.00					115	51.70	56.80	.009		

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	4.35	MEDIUM TO COARSE RED GRANITE Red, medium to coarse grained (.1cm- 3cm). Felsic portion: red, sub to euhedral, .5-3cm, striated, hematite-stained K-spar; smoky green to grey, anhedral, .3-2cm quartz. Mafic portion: black, subhedral, .2-1cm biotite; black, .3-2cm, euhedral bastnaesite; black, euhedral .2-.4cm zircon; black subhedral .4-.8cm tourmaline (?); gray, anhedral .2-.3cm magnetite; silver-grey, euhedral .1cm molybdenite. The coarse sections are over 10-15cm and there are 3 of these. They have less mafics than the medium-grained granite. In the medium section there are a few zones 5-10cm which are slightly more biotite-rich. Hematite is present throughout the section as staining and grains. Minor alteration of biotite to chlorite with vermiculite present near the top of the hole. Minor kaolinization of K-spar and limonite occurs along fractures. A fracture extends subparallel to core from 0-1.05m and another at 2.60 at 85° to core. The bastnaesite displays a radiating structure and one grain at 3.50 cuts a biotite grain but borders around a quartz and K-spar grain at its ends. Red (hematite?) alteration of crystal gives it a zoned appearance. Minor pyrite mineralization along edges of tourmaline (?) grains. Mineral percentages: Felsics- K-spar 45-55, quartz 25-30. Mafics- biotite 10-20, hematite 3-5, magnetite 4, bastnaesite 2-5, tourmaline 2-3, chlorite 2, zircon 1, vermiculite 1, limonite 1, molybdenite 1.		0.25					82	0	2.15	.006		
				0.50										
				0.75										
				1.00										
				1.25										
				1.50										
				1.75										
				2.00										
				2.25					83	2.15	4.35	.005		
				2.50										
				2.75										
				3.00										
				3.25										
				3.50										
				3.75										
				4.00										
	4.35	.....contact at 90° to core--ground.		4.25									
				4.50					84	4.35	6.59	.008		

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS				SAMPLE			ASSAYS					
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈					
7.34	9.95	BIOTITE SCHIST Similar to 4.35-6.50. End of hole.		<div>9.50</div> <div>9.75</div> <div>10.00</div> <div>10.25</div> <div>10.50</div> <div>10.75</div> <div>11.00</div> <div>11.25</div> <div>11.50</div> <div>11.75</div> <div>12.00</div> <div>12.25</div> <div>12.50</div> <div>12.75</div> <div>13.00</div> <div>13.25</div> <div>13.50</div> <div>13.75</div> <div>14.00</div>													

GEOLOGICAL LOG BY R. Quartermain DATE 8/6/78 HOLE #
RADIOMETRIC LOG BY _____ DATE _____ 78 - C - 15

CLAIM #	364 130-4
---------	-----------

[illegible]

[illegible]

[illegible]

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain DATE 9/6/78
RADIOMETRIC LOG BY _____ DATE _____

HOLE #
78-C-17

LAT. 114°00S LONG. 3+03 E COLLAR ELEV. 92.19 DEPTH 61.28 m DIP 90° CORE SIZE BQ CORE RECOVERY 100%

CLAIM #
364131-4

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	3.05	COARSE (TO MEDIUM) RED GRANITE Salmon-pink to red, medium to coarse-grained (.1-2cm). Coarse portion comprises 50-60%, medium portion 40-50% of section. Felsic portion: pink to red, .4-2cm subhedral to euhedral, striated, hematite-stained K-spars; white to smoky green to grey to clear, anhedral .2-2cm quartz. Mafic portion: black, subhedral .2-1cm biotite; black, euhedral .3-1cm bastnaesite; black, subhedral .4-.8cm tourmaline (?); black, euhedral .2cm zircon; grey, anhedral .5-.8cm magnetite; silver-grey, euhedral .1cm molybdenite; red, anhedral .5-1cm hematite. Biotite is altered to chlorite throughout the hole and to vermiculite along fractures. The green quartz occurs randomly throughout the core. Bastnaesite and tourmaline(?) exhibit radiating fracture patterns into adjoining grains, some with hematite staining. Hematite occurs both as grains and stains between K-spar grains. Minor kaolinization of feldspars near top of holes as well as limonite staining along fractures. There are numerous fractures throughout the core. Epidote and quartz veining is abundant. There are concentrations of quartz, biotite and bastnaesite as noted below. Contacts of these sections are gradual over a few centimeters. Mineral Percentages: Felsics- quartz 25-30, K-spar 50-60. Mafics- biotite 10-15, hematite 5-10, bastnaesite 1-3, zircon 1, magnetite 1, tourmaline 1, epidote 1, limonite 1, molybdenite 1. 1.22 ....core ground and chipped. 1.37 ....fractured at 10° to core. 3.05 ....contact at 60° to core.		0.25						0	2.0	.004		
				0.50	23.8	8.7	2.1	1.8						
				0.75										
				1.00	24.6	3.5	2.1	1.8						
				1.25										
				1.50	25.3	3.3	2.1	1.8						
				1.75										
				2.00	30.0	3.6	2.1	1.9						
				2.25						2.0	4.0	.007		
				2.50	33.3	4.2	2.3	2.1						
				2.75										
				3.00	34.3	4.0	2.3	2.3						
				3.25	26.9	4.0	1.9	1.7						
				3.50	46.9	4.0	1.9	1.7						
3.05	3.66	PARAGNEISS Red, fine-grained, equigranular.		3.75										
				4.00	45.5	4.0	2.3	2.1						
				4.25						4.0	6.0	.014		
				4.50	34.7	3.5	2.4	2.2						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				9.50	24.6	3.2	2.1	1.6						
				9.75	24.									
				10.00	27.6	3.1	1.9	2.0						
				10.25						10.0	12.0	.008		
				10.50	31.4	3.6	2.2	2.0						
				10.75										
				11.00	30.5	3.9	2.1	2.0						
				11.25										
11.28	11.89	.....Quartz-Rich Section White to black, medium to coarse-grained. Quartz 40%, black biotite 15%, hematite 5%. Biotite has the appearance of randomly oriented needle-like grains, .05cm x 1cm. Hematite occurs as a coating on grains of quartz, K-spar and biotite.		11.50	24.3	2.8	1.9	1.5						
				11.75										
				12.00	26.9	3.5	2.2	1.7						
				12.25						12.0	14.0	.014		
				12.50	5.39	4.6	2.9	2.4						
				12.75										
				13.00	32.5	4.1	2.6	2.2						
				13.25										
				13.50	24.0	3.3	2.1	1.7						
				13.75										
				14.00	24.8	3.7	2.4	1.9						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
14.02	14.33Quartz-rich section. White to red, coarse-grained. White quartz 2cm, 45-50%; pink K-spars 2cm, 40%. black biotite (in books) 1cm 10-15%; red hematite 1cm, 5%. A 1.5 cm greyish-white quartz vein cuts this section at 40' to core.		14.25						14.0	16.0	.006		
				14.50	24.6	3.5	1.9	1.6						
				14.75										
				15.00	23.5	3.3	2.0	1.9						
				15.25										
				15.50	27.6	3.6	2.2	1.8						
				15.75										
				16.00	24.5	2.6	2.2	1.6						
				16.25										
				16.50	39.8	3.1	2.4	1.9						
16.77	17.38	...Quartz-rich section Similar to 14.02-14.33. Quartz 50%; K-spar 30-35%; Hematite 15-20%; biotite 2%. Contact at 16.77m is a 2mm quartz/epidote vein at 45' to core; lower contact gradual.		16.75						16.0	18.0	.009		
				17.00	28.6	2.3	1.9	1.3						
				17.25										
				17.50	23.4	2.8	2.0	1.6						
				17.75										
				18.00	33.5	3.1	1.9	1.6						
				18.25										
				18.50	23.1	2.9	2.5	2.0						
				18.75										
				17.99	18.60Biotite-rich zone. Red to black, medium-grained. K-spar 45-50%; Biotite 20-25, others 3.		18.75						
19.00														

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				19.00	20.0	2.3	1.8	1.5						
				19.25	3'									
				19.50	32.7	3.1	2.4	2.0						
				19.75										
				20.00	27.8	2.3	1.9	1.4						
				20.25						20.0	22.0	.007		
				20.50	22.8	2.6	1.8	1.6						
				20.75										
				21.00	21.9	2.6	2.1	1.7						
				21.25										
				21.50	25.8	2.9	2.0	1.8						
				21.75										
		21.95.....bastnaesite 5% over 12cm.		22.00	22.5	2.7	1.7	1.5						
				22.25						22.0	24.0	.012		
22.87	23.05	.....Hematite-altered zone. Purple medium-grained, altered. Section consists of clear anhedral quartz 45-50%; pink to orange, altered K-spars 25-30; green to red altered biotite 10-15%; gray to red anhedral magnetite, 2%; red hematite 10%. The feldspars have been aolinitized and the biotite has been altered to chlorite, some heavily stained by hematite. Some of the chlorite appears to be further altered to a dark green, soft(4) greasy-feeling, clay mineral (?)		22.50	26.2	3.2	2.3	1.6						
				22.75										
				23.00	22.2	2.6	1.5	1.3						
				23.25										
				23.50	22.2	2.8	1.9	1.5						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
23.78	24.09	....hematite-altered zone. Similar to 22.87-23.05m, except more hematite up to 15%.		23.75										
				24.00	22.8	2.8	1.9	1.6						
24.39	25.30	....altered zone. Similar to 22.87-23.05 except less hematite--more kaolinization of K-spars and abundant green clay mineral. Grains are angular and some zones have brecciated appearance. Numerous minor fractures at 40 to 50° to core. Minor epidote veining.		24.25						24.0	26.0	.007		
				24.50	23.7	3.6	1.9	1.6						
				24.75										
				25.00	33.1	3.7	2.1	2.2						
				25.25										
				25.50	25.8	3.4	1.6	1.7						
				25.75										
25.91		....bastnaesite 3% over 5cm.		26.00	24.0	3.7	2.2	1.9						
				26.25						26.0	28.0	.004		
				26.50	33.6	3.6	2.3	2.3						
				26.75										
				27.00	39.8	4.0	2.3	2.3						
				27.25										
				27.50	24.9	3.2	2.0	1.9						
				27.75										
				28.00	38.6	3.8	2.3	2.5						
				28.25						28.0	30.0	.011		

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
	29.27bastnaesite - 2% over 5cm.		28.50	36.7	3.9	2.4	2.2						
				28.75										
				29.00	49.0	4.1	2.3	2.4						
				29.25										
30.49	30.79quartz-rich section. White to red, very coarse grained (<4cm). Quartz 70%; K-spar 25%; hematite-stained biotite 5%.		29.50	27.0	3.1	1.8	1.7						
				29.75										
				30.00	27.3	2.8	1.3	1.5						
				30.25										
31.10	31.25altered zone Similar to 22.87-23.05, except more biotite (25%) which has been totally chloritized.		30.50	22.3	2.7	1.5	1.4		30.0	32.0	.007		
				30.75										
				31.00	28.7	3.3	2.2	2.0						
				31.25										
32.32	32.62a series of 2.1cm wide epidote veins cut the core at 45°.		31.50	31.2	3.6	2.3	2.2						
				31.75										
				32.00	24.4	3.2	1.8	1.6						
				32.25										
				32.50	23.3	3.3	2.1	1.9						
				32.75										
				33.00	23.9	3.8	2.0	1.6						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
38.11	38.41	.....biotite-rich section. Black to red; felsics 70%; biotite 30. Minor chlorite alteration.		38.00	26.0	3.3	18	1.7						
				38.25						38.0	40.0	4.001		
				38.50	22.2	3.3	2.0	2.0						
				38.75										
39.02		.....a 2 cm subhedral bastnaesite grain has grown around a K-spar and quartz grain.		39.00	24.0	3.1	1.8	1.5						
				39.25										
				39.50	22.4	3.0	2.1	1.9						
				39.75										
				40.00	25.1	3.1	1.9	1.6						
				40.25						40.0	42.0	.008		
				40.50	23.9	2.7	2.0	1.6						
				40.75										
				41.00	24.0	3.4	2.1	2.0						
				41.25										
				41.50	34.9	3.4	2.3	1.8						
				41.75										
				42.00	33.2	3.2	2.1	2.1						
				42.25						42.0	44.0	.021		
				42.50	54.8	4.5	2.5	2.9						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
	47.26	.....bastnaesite 5% over 10cm. Trace of pyrite.		47.50	117.1	58	4.8	2.5						
				47.75	19.4	2.1	1.7	1.3						
47.87	47.97	.....altered zone. Dark green, medium-grained. Dominantly soft green mineral observed in 22.87-23.05. All the feldspars have been kaolinized and abundant chlorite. This zone cuts the core at 45° with epidote on either contact. Minor alteration extends into the host granite for 3-4cm.		48.00										
				48.25						48.0	50.0	.004		
				48.50	28.1	3.2	2.1	1.9						
48.48	49.09	.....biotite-rich section. Similar to 38.11-38.41, except biotite ≤20%.		48.75										
				49.00	18.3	2.0	2.0	1.7						
				49.25										
				49.50	18.5	2.2	1.7	1.6						
				49.75										
				50.00	18.6	2.6	1.8	1.7						
				50.25						50.0	52.0	.007		
				50.50	15.6	1.7	1.5	1.2						
				50.75										
				51.00	16.7	2.0	1.7	1.5						
				51.25										
				51.50	16.0	1.7	1.5	1.3						
				51.75										
				52.00	15.3	1.8	1.6	1.3						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
53.13	52.74coarse red granite Red, grains 1-2cm. K-spar 60%, quartz 30, bio- tite 10.		52.25						52.0	54.0	.011		
				52.50	14.9	1.7	1.5	1.3						
				52.75										
				53.00	1.47	5.4	1.4	1.3						
				53.25										
				53.50	18.2	2.3	1.8	1.6						
				53.75										
				54.00	20.7	1.9	1.5	1.4						
				54.25										
				54.50	27.7	2.3	1.4	1.2						
54.88 55.18	54.88 55.49 55.49fracture at 10° to core. ....bastnaesite ≤ 3%. ....core ground.		54.75						54.0	56.0	.004		
				55.00	19.6	2.2	1.5	1.4						
				55.25										
				55.50	23.9	2.5	1.6	44						
				55.75										
				56.00	16.7	1.9	1.5	1.4						
				56.25										
				56.50	11.5	1.8	1.4	1.3						
				56.75										
				57.00										

[illegible]

GEOLOGICAL LOG BY R. Quartermain DATE 10/6/78 HOLE #
RADIOMETRIC LOG BY _____ DATE _____ 78 - C - 18

CLAIM #
364131-4

[illegible]

ESSEX MINERALS COMPANY				LAC COSTEBELLE B-3205				CORE SIZE		DATE		PAGE		HOLE #	
								HW		10-6-78		2		78-C-18	
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS			
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈			
				4.75											
				5.00											
				5.25											
5.49	14.49	COARSE (TO MEDIUM RED) GRANITE Red, medium to coarse-grained (.2-2cm). Felsic portion: salmon pink to red, sub to euhedral .5-2cm, striated, hematite-stained, epidote-veined K-spars and smoky greenish grey to white, anhedral .5-1.5cm quartz. Mafic portion: black, sub to euhedral, .3-1.5cm biotite; black, sub to euhedral, .5-1cm hematite- stained bastnaesite; black, euhedral, .2-.4cm zir- con. Biotite is altered to chlorite and in some areas stained by hematite. There is abundant epidote vein- ing. The majority of K-spars has an orange color and the quartz is dominantly white. The bastnae- site exhibits hematite-stained, radiating fractures. There is minor pyrite mineralization. On the whole, this granite is less mafic than most logged so far. Mineral percentages: Felsics- 60 K-spar, 25-30 quartz. Mafics- biotite 10-12, hematite 5, chlorite 2-3, bastnaesite 1-2, zircon, pyrite --trace.		5.50											
				5.75	37.0	3.2	2.5	2.0		5.49	7.74	.007			
				6.00	31.6	3.3	2.8	2.1							
				6.25	29.8	2.5	2.0	1.7							
				6.50	33.2	3.2	2.6	2.0							
				6.75	37.3	2.8	2.4	2.1							
				7.00	47.4	3.9	3.6	2.5							
				7.25	103.9	5.1	4.6	3.4							
				7.50	75.8	4.1	3.5	3.2							
5.64	6.04	....core is ground.		7.75	39.4	3.2	2.5	2.0							
	7.24	....limonite fracture at 75° to core.		8.00	34.4	3.0	2.6	1.9		7.74	9.99	.004			
	7.49	....series of epidote veins at 30-40° to core.		8.25	42.0	3.4	2.2	1.9							
				8.50	154.1	6.0	5.6	5.1							
				8.75	40.3	2.9	2.0	1.7							
8.29	8.99	.... core ground.		9.00	53.2	3.5	3.2	2.8							
	9.24	....chlorite fracture at 45° to core.		9.25	53.2	3.5	2.8	2.3							

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				9.50	47.7	34	30	24						
				9.75	42.4	36	2.2	2.0						
				10.00	50.3	4.1	3.1	24						
				10.25	82.2	4.7	8.9	28		9.99	12.24	.006		
				10.50	32.2	29	2.3	18						
				10.75	57.2	3.7	2.5	2.3						
				11.00	68.4	40	3.7	2.5						
11.24	11.99	.....Quartz-rich section. Red to white, coarse-grained. White quartz 50%; Red K-spar 35%; biotite 15%.		11.25	50.1	38	3.0	2.4						
				11.50	88.5	4.5	4.2	3.5						
				11.75	36.9	3.5	2.5	1.8						
				12.00	36.7	3.6	2.9	2.0						
				12.25	29.1	2.8	2.2	1.7						
				12.50	92.6	5.1	4.7	3.9		12.24	14.49	.011		
				12.75	162.8	6.0	6.3	4.9						
12.89	12.99	.....core ground. Bastnaesite \leq 10%.		13.00	277.1	10.5	9.6	7.6						
13.29	13.49	.....Bastnaesite \leq 3%		13.25	501.6	16.3	16.2	13.7						
				13.50	199.4	7.7	6.6	5.9						
				13.75	143.0	6.8	5.8	4.6						
				14.00	162.2	6.7	6.1	4.9						

[illegible]

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain DATE 12/6/78
RADIOMETRIC LOG BY _____ DATE _____

HOLE #
78-C-19

LAT. 114+00.5 LONG. 5+00 E COLLAR ELEV. 95.57 DEPTH 11.48 DIP 90° CORE SIZE HW CORE RECOVERY 99%

CLAIM #
364131-4

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	
0	2.44	Overburden		0.25									
				0.50									
				0.75									
				1.00									
				1.25									
				1.50									
				1.75									
				2.00									
				2.25									
				2.50									
2.44	5.04	PARAGNEISS Purple to red, fine to medium-grained. Felsic portion: pink to red, subhedral .1-.8cm, striated, hematite-stained K-spars and smoky-grey to clear, anhedral .1-1cm quartz. Mafic portion: black, sub to euhedral, .1-.2cm biotite. Minor alteration of biotite to chlorite. Banding is at 25-30° to core. Scattered segregations of coarser-grained felsics indicating recrystallization. Minor epidote veins cut the core at 15-20° at 4.05 and 4.20. From 4.20 to 4.95 the core is ground and chipped. A few fractures cut perpendicularly to core. From 4.98 to 5.02 a medium red granite vein cuts the core at 35°.		2.75	39.1	34	2.6	2.3		2.44	4.69	.007	
				3.00	40.9	3.1	2.9	1.7					
				3.25	41.4	3.2	2.8	2.2					
				3.50	43.1	2.8	2.6	2.1					
				3.75	38.1	2.5	2.2	1.6					
				4.00	41.0	3.0	2.4	1.9					
				4.25	45.4	3.1	2.6	2.1					
				4.50	33.5	3.0	2.2	2.2					

Mineral percentages:
Felsics- K-spar 50-60, quartz 30-40.
Mafics- biotite 10-15, other ≤1.

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
	5.04	.....contact over 5cm.		4.75	346	30	25	2.1						
				5.00	31.1	3.1	28	2.1		4.69	6.94	.004		
5.04	5.80	CONTACT ZONE - PARAGNEISS WTH MEDIUM RED GRANITE Red, fine-grained, equigranular. Compositionally similar to paragneiss, however, grain size is .1cm or less. There is a minor foliation of the mafics and this is sub to perpendicular to core. From 5.20-5.60, core is cut by a .1cm epidote vein sub-parallel to core with hematite staining.		5.25	332	29	24	1.7						
				5.50	328	29	24	1.6						
	5.80	.....contact at 85° to core.		5.75	43.6	3.5	2.6	2.1						
5.80	7.40	MEDIUM RED GRANITE Refer to log 15. This granite lacks molybdenite and vermiculite and only a few grains of tourmaline(?) were visible. Some coarser zones (up to 1.5cm), but these are minimal. There is abundant epidote veining.		6.00	40.1	2.5	2.5	1.9						
				6.25	93.7	4.1	3.6	3.3						
6.20	6.50	.....fracture at 20° to core.		6.50	61.7	3.6	3.4	2.6						
	7.20	.....fracture at 35° to core.		6.75	98.1	5.2	4.8	3.5						
				7.00	506.2	17.4	15.9	13.3						
				7.25	86.6	4.7	3.7	3.1		6.94	9.19	.012		
7.40	8.00	CONTACT ZONE - MEDIUM RED GRANITE WITH PARAGNEISS Pink to purple, medium-grained, minor foliation developed at 30° to core. Mineralogy similar to paragneiss; however, more white quartz and feldspars are dominantly pink. Numerous hematite veins cut the core at 25-35°.		7.50	53.7	3.7	2.9	2.4						
				7.75	49.3	4.0	3.4	2.2						
	8.00	.....contact over 5cm.		8.00	41.5	4.2	2.6	1.8						
8.00	9.30	PARAGNEISS Similar to 2.44 to 5.04. A gentle { shaped fold extends from 8.30 to 9.00 with medium red granite in the core of the fold and paragneiss enclosing. Some magnetite is present as well as abundant hematite.		8.25	68.0	4.4	3.3	2.4						
				8.50	69.3	4.6	3.2	2.0						
				8.75	61.3	3.9	3.1	2.6						
				9.00	59.1	3.8	3.1	2.2						
				9.25	76.3	4.3	3.8	2.8						
										9.19	11.40	.016		

[illegible]

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain DATE 13/6/78
RADIOMETRIC LOG BY _____ DATE _____

HOLE #
78 - C - 20

LAT. 112.005 LONG. 2+95 E COLLAR ELEV. 104 DEPTH 9.15 DIP 90° CORE SIZE HW CORE RECOVERY 93%

CLAIM #
364130-4

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	5.40	COARSE (TO MEDIUM) RED GRANITE Refer to Coarse Red Granite, log 15. This section of core is dominantly coarse with medium-grained areas up to 15cm. The coarser granite is generally lighter red than the medium granite, though the first 2.5meters of the core has abundant hematite. Green quartz is again present, though no molybdenite was noted. This granite is unlike that of holes 18 and 19. Bastnesite is disseminated and there are no major concentrations, except at the contact with paragneiss ± 3% over 5cm. .50 .....limonite fracture at 10° to core.		0.25	64.8	58	3.1	3.3		0	1.80	.012		
				0.50	82.5	6.2	4.3	4.0						
				0.75	41.9	4.9	2.6	2.1						
				1.00	42.4	6.1	2.4	2.1						
				1.25	100.8	7.7	4.1	3.8						
				1.50	183.3	10.9	7.1	7.5						
				1.75	44.0	4.5	2.6	2.6						
				2.00	114.2	7.1	4.2	4.2		1.80	3.60	.007		
				2.25	106.0	7.5	4.6	3.8						
				2.50	3.25	5.1	1.8	1.6						
				2.75	38.2	5.6	2.3	2.0						
				3.00	35.5	4.9	2.6	2.4						
				3.25	30.2	4.3	2.5	1.7						
				3.50	30.4	4.8	2.0	1.7						
3.88	4.12Biotite-rich section. Black, fine to medium-grained. White to red. K-spars, 25%; clear quartz 15; black biotite 60. Biotite occurs in books and lacks foliation.		3.75	38.7	5.1	2.4	2.1		3.60	5.40	.012		
				4.00	40.7	4.8	2.0	2.1						
				4.25	31.8	3.8	2.0	1.8						
				4.50	32.8	5.0	2.3	1.9						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE		ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈	
				4.75	46.5	5.1	3.1	2.4					
5.40	5.40	.....contact at 90° to core.											
	8.75	PARAGNEISS		5.00	30.7	4.9	2.0	2.0					
		Purple to red, fine to medium-grained, equigranular.											
		Felsic portion: white to red, subhedral .1-.3cm		5.25	40.6	5.3	1.9	2.4					
		striated, hematite-stained K-spar and smoky-green											
		to grey to clear, anhedral, .1-.4cm quartz.											
		Mafic portion: black euhedral .1cm biotite and grey		5.50	74.0	5.9	3.5	3.4					
		anhedral .1cm magnetite. Minor alteration of biotite								5.40	7.20	.012	
		to chlorite and abundant hematite staining.		5.75	33.4	5.2	2.6	2.2					
		Coarser felsic areas occur up to 1.5cm with adjacent											
		fine-grained mafic layers up to .2cm.		6.00	31.7	5.0	2.1	2.0					
		Mineral percentages:											
		Felsics- K-spar 50-60; quartz 20-30		6.25	30.0	4.8	2.5	2.0					
		Mafics- biotite 10-15, hematite 5, chlorite 2, mag-											
		netite 1.		6.50	25.2	4.1	1.9	1.9					
		Banding varies from 45° to core to 25° to core down											
		the hole. At the contact, banding is folded, pro-		6.75	31.6	4.9	2.0	1.7					
		gressing from 140 to 180 to 45° to core over 10 cm.											
5.30	6.40	.....a fracture runs sub-parallel to core.		7.00	29.0	4.2	2.1	1.9					
6.40	6.50	.....a coarse red granite vein cuts the core at 40°.											
6.70	6.95	.....minor S-shaped fold.		7.25	29.1	4.1	1.9	1.7					
				7.50	31.7	5.2	2.5	2.4		7.20	9.15	.014	
7.80	7.90	.....a coarse red granite vein cuts the core at 30°.		7.75	31.7	3.9	2.3	1.9					
8.25	8.75	.....Biotite Schist		8.00	31.4	4.8	2.2	1.8					
		Black, fine-grained, equigranular. Rock consists											
		of 25-30% white to pink K-spars; 15-20% white to		8.25	44.9	5.7	2.8	2.2					
		clear quartz; 50-60% black biotite.											
		Banding at 15° to core. Alteration of biotite to		8.50	40.9	4.2	2.8	1.8					
		chlorite.											
	8.75	.....contact ground.		8.75	22.9	3.3	1.8	1.5					
8.75	9.15	COARSE RED GRANITE											
		Similar to 0-5.25.		9.00	35.7	4.0	2.5	1.7					
	9.15	End of hole.		9.25	28.0	5.3	2.0	2.0		finer		.018	

LAC COSTEBELLE B-3205

RADIOMETRIC LOG BY

DATE

78 - C - 21

LAT. 112.5 LONG. 2+00 E COLLAR ELEV. 98.33 DEPTH 8.75 DIP 90° CORE SIZE HW CORE RECOVERY 96%

CLAIM #

364130-4

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	
0	8.75	COARSE (TO MED.) RED GRANITE Refer to Coarse-Grained Granite, log 15. All minerals are present. There is an abundance of dark green quartz, which is concentrated around the bastnaesite crystals. Bastnaesite is more abundant in this hole than previously seen and there are areas where molybdenite is disseminated up to 2% over a few centimeters. Medium-grained sections have more bastnaesite and hematite than the coarser rock and are 5-10 cm in length. Similar to granite in hole 78-C-20. Minor fractures at 10-15° to core and others perpendicular.		0.25	53.0	4.9	2.9	3.0		0	2.20	.016	
				0.50	31.5	3.0	2.6	1.7					
				0.75	27.2	4.0	2.3	2.0					
				1.00	39.4	5.5	2.3	1.9					
				1.25	101.0	7.1	4.5	4.2					
1.10	1.35	....Biotite-rich section. Black, medium-grained; felsics 65%, biotite 35%.		1.50	36.2	4.9	2.5	2.3					
				1.75	34.0	5.1	2.2	2.0					
				2.00	42.8	5.5	2.7	2.5					
2.35		....Bastnaesite \leq 3% over 5cm.		2.25	49.2	5.1	2.7	3.1					
				2.50	43.0	6.3	3.0	2.6		2.20	4.40	.009	
				2.75	148.5	8.0	4.6	7.4					
2.85	3.30	MEDIUM RED GRANITE Refer to log 15. Bastnaesite \leq 5%.		3.00	511.0	21.6	16.1	17.4					
				3.25	107.6	8.0	4.7	4.5					
				3.50	134.5	9.0	5.6	5.6					
				3.75	111.0	8.9	5.1	5.0					
				4.00	131.2	8.0	5.4	3.8					
				4.25	39.4	5.0	2.2	2.1					
				4.50	82.3	6.5	4.1	3.5					
										4.40	6.60	.007	

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE		ASSAYS	
					TOTAL	K	U	Th	FROM	TO	U ₃ O ₈	
	4.85	....bastnaesite 2% over 5cm.		4.75	194.3	9.6	7.6	7.5				
				5.00	1758	9.9	6.3	6.2				
	5.25	.....molybdenite 2% over 5cm.		5.25	194.8	10.6	7.3	7.0				
				5.50	57.3	6.1	2.8	2.8				
				5.75	2250	11.3	7.6	9.1				
				6.00	28.1	4.6	2.3	1.8				
				6.25	44.8	5.6	2.5	2.2				
				6.50	91.0	7.9	3.9	3.4				
				6.75	31.7	4.4	2.6	2.1		6.60	8.75	.010
				7.00	55.7	5.8	2.9	2.8				
				7.25	99.6	7.5	4.1	4.3				
				7.50	121.9	8.0	4.7	4.9				
				7.75	76.6	5.9	3.4	3.8				
				8.00	156.4	8.7	5.8	6.1				
	8.38	....A-1-2cm wide zone of bastnaesite grains cuts the core at 45° with concentrations up to 15% over 12 cm.		8.25	52.0	6.7	2.8	2.8				
				8.50	482.3	20.2	13.6	20.3				
	8.75	End of hole. <i>B. H. Anderson</i>		8.75	37.9	6.0	2.6	2.1				
				9.00						Fines		.011
				9.25								

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain
RADIOMETRIC LOG BY _____

DATE 15/6/78
DATE _____

HOLE #
78-C-22

LAT. 112°03'S LONG. 0°49'E COLLAR ELEV. 93.68 DEPTH 9.80 DIP 90° CORE SIZE HW CORE RECOVERY 97%

CLAIM #
364130-4

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	
0	.60	Overburden		0.25									
				0.50									
.60	9.80	PARAGNEISS Refer to Paragneiss, log 20. Banding varies down hole from 35-40-48-40' to core.		0.75	25.7	3.7	2.1	1.9		.60	2.85	.008	
				1.00	27.8	4.8	1.9	1.6					
				1.25	32.1	4.9	2.0	1.7					
				1.50	29.4	4.2	1.8	1.7					
				1.75	31.8	4.9	2.3	1.9					
				2.00	29.2	3.7	2.2	1.8					
				2.25	29.1	4.4	2.0	1.8					
				2.50	28.4	4.2	1.7	1.7					
				2.75	28.9	4.3	2.1	1.8					
				3.00	27.3	4.2	2.0	1.8		2.85	5.20	.007	
				3.25	26.2	4.2	1.7	1.5					
3.42	3.55	Coarse red granite vein. Refer to Coarse Red Granite, log 15.		3.50	24.5	3.9	2.0	1.7					
				3.75	30.9	4.9	2.2	1.8					
				4.00	29.7	4.4	2.0	2.2					
				4.25	29.7	4.3	2.1	1.9					
				4.50	29.4	4.0	2.0	1.9					

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
5.72	5.73	.....Biotite Schist Refer to Biotite Schist, log 20.		4.75	31.7	4.8	2.1	1.9						
				5.00	28.6	4.5	2.0	1.8						
				5.25	29.3	4.7	2.1	2.0						
				5.50	32.2	5.1	2.0	1.9		5.20	7.55	.016		
				5.75	30.4	5.0	1.9	1.5						
				6.00	26.6	2.1	2.1	1.9						
				6.25	28.0	4.2	2.2	2.0						
				6.50	30.9	3.6	2.3	2.1						
				6.75	30.1	4.2	2.2	2.2						
				7.00	32.1	4.9	2.6	2.3						
				7.25	29.3	4.6	2.0	2.0						
				7.50	32.8	5.0	2.3	2.0						
				7.75	31.4	4.6	2.1	1.7		7.55	9.80	.012		
				8.00	27.1	4.6	2.0	1.7						
				8.25	29.6	4.4	2.2	1.8						
				8.50	28.5	4.7	2.1	1.8						
				8.75	29.1	4.5	2.2	1.7						
				9.00	28.4	4.3	2.0	2.2						
				9.25	31.6	4.9	2.2	1.9						

[illegible]

GEOLOGICAL LOG BY R. Quartermain DATE 14 / 6 / 78 HOLE #
RADIOMETRIC LOG BY _____ DATE _____ 78 - C - 23

CLAIM #
364130-4

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	2.70	Overburden		0.25										
				0.50										
				0.75										
				1.00										
				1.25										
				1.50										
				1.75										
				2.00										
				2.25										
				2.50										
2.70	9.40	PARAGNEISS Refer to Paragneiss log 20. Banding is at 82° to 86° to core. There are a number of fractures with chloritic and calcite alteration. .....fracture at 20° to core.		2.75	33.3	5.4	2.4	2.1		2.70	4.95	.004		
2.70				3.00	27.4	4.2	1.7	1.3						
3.20		.....fracture at 15° to core		3.25	36.3	4.7	2.2	2.1						
				3.50	33.2	4.6	2.1	2.0						
				3.75	29.8	3.9	2.0	1.5						
				4.00	29.0	4.2	2.0	1.6						
	4.30	.....fracture at 10° to core and fracturing of core over .40cm.		4.25	27.5	4.3	2.1	2.1						
				4.50	26.7	4.3	2.2	2.0						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS			
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈			
6.50	4.70fracture at 10° to core.		4.75	28.2	4.9	2.3	1.9							
				5.00	31.9	4.2	2.4	2.3							
				5.25	26.9	4.0	2.3	1.9							
				5.50	31.1	4.7	2.5	2.2							
				5.75	28.0	4.5	2.4	2.1							
				6.00	27.5	4.1	1.9	1.6							
				6.25	27.5	4.5	2.3	2.2							
				6.50	28.9	4.4	2.2	1.9							
	6.50	7.005 parallel fractures 3cm apart at 20-25° to core. Recrystallized zone. Red, fine to medium-grained. Has a granitic texture, yet still retains a foliation of biotite grains. It is much redder than the paragneiss.	<div></div>	6.75	28.5	4.1	2.2	1.9		4.95	7.20	.004		
					7.00	27.7	4.3	2.2	1.9						
					7.25	31.4	4.8	1.8	1.8						
					7.50	30.1	4.5	2.3	1.9						
					7.75	29.6	4.2	2.1	1.9						
					8.00	31.0	4.8	2.1	1.8						
					8.25	29.1	5.2	2.2	2.1						
					8.50	26.1	4.4	2.4	2.2						
					8.75	28.3	4.2	2.0	1.8						
					9.00	28.5	4.4	2.1	2.1						
					9.25	36.6	6.0	2.5	2.2						

[illegible]

ESSEX MINERALS COMPANY				GEOLOGICAL LOG BY <u>R. Quartermain</u>				DATE <u>10/07/70</u>				HOLE # 78 - C - 24			
LAC COSTEBELLE B-3205				RADIOMETRIC LOG BY _____				DATE _____							
LAT. <u>112+00S</u> LONG. <u>3+50W</u> COLLAR ELEV. <u>93</u> DEPTH <u>9.0</u> DIP <u>90°</u> CORE SIZE <u>Hw</u> CORE RECOVERY <u>96%</u>												CLAIM # <u>364127-3</u>			
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS			
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈			
0	9.0	COARSE (TO MEDIUM) RED GRANITE Refer to Coarse Granite, log 15. All minerals are present here. Core is dominantly coarse-grained with medium-grained sections scattered throughout. Hematite is present as a K-spar stain and as grains. It is more abundant in the medium-grained sections. Green quartz occurs randomly throughout the core and is usually found in a association with bastnaesite. Biotite is altered to both chlorite and vermiculite. Tourmaline is the only mineral which is only found in trace amounts. Molybdenite, magnetite and zircon are all disseminated throughout.		0.25	47.5	5.9	2.8	2.7		0	2.25	.002			
.70	1.40	....very coarse section Salmon-red, grains \leq 4cm. Red K-spars 50%, white to clear quartz 30, books of black biotite 20. Trace amounts of other minerals.		0.50	31.0	4.9	2.0	1.7						
				0.75	30.2	5.3	2.0	1.7							
				1.00	45.8	4.9	2.9	2.1							
				1.25	28.4	4.7	2.1	1.8							
				1.50	28.3	5.4	1.7	2.1							
				1.75	36.1	4.3	2.0	2.3							
				2.00	30.6	5.4	2.2	1.9							
				2.25	29.2	2.9	2.3	2.1							
				2.50	45.9	5.3	2.7	2.9		2.25	4.50	.008			
				2.75	38.4	4.7	2.4	2.7							
2.90	3.05	....magnetite and bastnaesite \leq 4%.		3.00	75.6	6.4	2.8	2.9						
				3.25	28.8	4.7	2.2	2.2							
				3.50	37.3	4.5	2.6	2.2							
3.37	3.87	....core is ground and chipped.		3.75	31.4	4.7	2.0	1.8						
				4.00	30.3	4.4	2.2	2.0							
				4.25	32.3	4.9	1.9	1.6							
				4.50	30.3	5.1	2.6	2.4							

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE		ASSAYS	
					TOTAL	K	U	Th	FROM	TO	U ₃ O ₈	
				4.75	638	5.9	2.9	2.8		4.50	6.75	.014
				5.00	568	6.0	3.0	2.8				
				5.25	502	6.9	2.4	2.2				
				5.50	985	8.2	4.2	4.0				
				5.75	604	5.7	2.8	2.7				
				6.00	973	6.8	3.6	3.9				
				6.25	43.3	5.6	3.0	2.5				
				6.50	46.3	3.6	2.3	2.3				
6.80		.....Bastnaesite \leq 3% over 5cm.		6.75	58.0	5.6	3.2	3.2				
7.10	7.30	.....core ground and chipped.		7.00	145.1	8.9	5.7	6.6		6.75	9.00	.012
				7.25	41.9	5.5	2.6	2.4				
				7.50	56.1	5.2	2.8	2.7				
7.80	9.00	.....Bastnaesite \leq 3% in dominantly medium red granite.		7.75	76.1	6.5	3.4	3.8				
				8.00	98.1	6.5	3.7	4.4				
				8.25	89.6	6.6	3.7	4.0				
				8.50	140.4	9.8	4.7	6.7				
				8.75	53.2	4.3	2.2	2.5				
8.90	9.00	.....core ground.		9.00								
	9.00	End of hole.		9.25						finer		.012

B. Stuartman

ESSEX MINERALS COMPANY LAC COSTEBELLE B-3205				GEOLOGICAL LOG BY <u>R. Quartermain</u> RADIOMETRIC LOG BY _____ DATE <u>17/6/78</u>				HOLE # 78-C-25						
LAT. <u>113+00S</u> LONG. <u>1+40W</u> COLLAR ELEV. <u>94m</u> DEPTH <u>9.3m</u> DIP <u>90°</u> CORE SIZE _____ HW _____ CORE RECOVERY <u>98%</u>				CLAIM # <u>364130-4</u>										
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	9.30	COARSE (TO MEDIUM) RED GRANITE Refer to log 15. Similar to logs 1 and 24. Dominantly a salmon-red coarse granite with minor areas of redder medium granite. All minerals are present though no tourmaline(?) was observed. Bastnaesite occurs in concentrations and these are zones of very coarse granite, grains 4cm. Green quartz occurs throughout. .....bastnaesite and zircon \leq 10% over 4cm.		0.25	595.4	25.5	19.3	21.5		0	2.40	.616		
.65	.95	.....bastnaesite \leq 10%. In same section, much molybdenite, biotite, hematite, zircon and magnetite. Dominantly medium-grained.		0.50	92.5	7.7	3.7	4.0						
				0.75	68.1	25.8	19.6	27.3						
				1.00	793.8	28.1	22.3	28.0						
				1.25	84.6	6.0	3.7	4.0						
				1.50	205.7	10.6	7.4	8.3						
				1.75	55.5	5.3	2.5	3.0						
				2.00	87.1	7.4	4.2	4.1						
				2.25	39.0	5.6	2.1	2.1						
				2.50	35.1	4.6	2.5	2.3						
				2.75	29.1	4.5	2.1	1.9		2.40	4.60	.008		
				3.00	28.1	4.2	2.1	1.6						
				3.25	33.0	5.6	2.2	1.8						
				3.50	31.5	5.3	1.9	1.7						
				3.75	31.3	3.7	2.1	2.2						
			3.35	3.50very coarse section. Refer to very coarse granite, log 24.		4.00	30.6	4.5	2.0	1.8			
	4.25	37.4				5.4	2.2	2.1						
	4.50	40.3				4.7	2.3	2.6						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
4.60	4.85	.....Biotite-rich section Biotite 20%; quartz 30; K-spar 50.		4.75	37.9	5.6	2.2	2.2		4.60	6.90	.012		
				5.00	44.0	4.6	2.5	2.5						
				5.25	32.0	5.6	1.8	1.5						
				5.50	38.5	4.9	2.3	2.2						
				5.75	29.5	5.6	2.3	1.8						
				6.00	31.1	5.5	2.2	2.1						
				6.25	25.9	3.8	1.8	1.7						
				6.50	40.3	6.2	2.3	2.0						
				6.75	28.0	4.6	1.8	1.5						
				7.00	34.6	4.5	2.3	2.3						
				7.25	33.2	4.3	2.0	1.8		6.90	9.30	.009		
				7.50	43.8	5.8	2.5	2.2						
				7.75	33.2	4.7	2.0	1.9						
				8.00	48.4	5.8	2.7	2.6						
8.20	8.50	.....very coarse section. Similar to 3.35-3.50, though more biotite (15-20)%		8.25	32.9	6.5	2.6	2.1						
				8.50	31.1	4.0	1.7	1.7						
				8.75	31.2	4.7	1.6	1.5						
				9.00	51.4	5.6	2.5	2.5						
	9.15	.....bastnaesite 5% over 4cm.		9.25										
	9.30	End of hole.								Finer		.015		

GEOLOGICAL LOG BY R. Quartermain DATE 10/07/70 HOLE #
RADIOMETRIC LOG BY _____ DATE _____ 78 - C - 26

CLAIM #
364130-3

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0 														

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
5.00	5.70	.....bastnaesite $\leq 10\%$. Much staining of quartz and K-spar.		4.75	57.1	5.4	2.7	2.7						
				5.00	74.3	6.8	2.8	3.5						
	5.48	.....a bastnaesite grain has euhedral contacts with feldspar grains, but it grows around quartz grains and has a 2mm quartz grain in its center.		5.25	49.5	6.3	2.5	2.7						
				5.50	60.9	6.2	3.0	3.7						
				5.75	185.5	9.6	8.9	9.3						
				6.00	84.4	7.6	3.6	3.6						
				6.25	35.3	5.6	2.3	2.0		6.00	8.00	.009		
				6.50	49.7	6.7	2.7	2.5						
				6.75	44.8	6.6	2.1	2.2						
				7.00	35.0	5.1	2.2	1.7						
				7.25	36.7	4.9	2.1	2.0						
				7.50	52.8	6.1	2.2	2.6						
				7.75	34.8	5.6	2.2	2.1						
				8.00	40.0	5.8	2.3	2.2						
				8.25	82.8	6.5	3.1	4.1		8.00	9.50	.009		
				8.50	40.5	5.5	1.9	2.1						
				8.75	71.8	6.4	3.2	4.8						
				9.00	42.3	6.2	2.2	2.2						
				9.25	43.2	5.8	2.7	2.8						

Kspar
Quartz
bast.
Kspar

[illegible]

78 - C - 27

364130-3

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	43.45	COARSE (TO MEDIUM) RED GRANITE Refer to log 15. Unlike C-26, much coarser and K-spars are a darker red. All minerals are present, though after 12m, bastnaesite, zircon and tourmaline decrease in abundance. Only magnetite and trace amounts of molybdenite are found throughout. The medium-grained sections occur in the first 12 met of the hole and from 12.20 to 73.17, there are very coarse sections with grain size ≤ 3 cm. Green to yellow stained quartz is most abundant in the first 9.15 meters, though it occurs elsewhere. Magnetite in some cases has red hematite alteration. The biotite occurs for the most part in books, some chloritized, most not.		0.25						0	5.0	.008		
				0.50	19.0	3.1	18	1.7						
				0.75										
				1.00	24.2	3.4	2.1	1.7						
				1.25										
				1.50	25.6	3.3	2.1	1.8						
				1.75										
0.00	.91	....core is ground.		2.00	29.0	3.8	2.0	1.6						
	.91	....fracture at 15' to core.		2.25										
				2.50	29.7	4.2	2.4	2.2						
				2.75										
	2.74	....core ground over 10cm.		3.00	23.4	3.2	1.7	1.5						
				3.25										
				3.50	32.1	4.4	2.4	2.1						
				3.75										
				4.00	49.3	4.8	2.8	2.8						
				4.25										
	4.27	....bastnaesite $\leq 3\%$ over 5cm.		4.50	100.2	5.6	4.3	4.5						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	FROM	TO	U ₃ O ₈		
				4.75									
				5.00	51.2	4.4	2.8	2.4					
				5.25									
				5.50	66.3	4.7	3.4	3.1					
				5.75									
				6.00	65.6	5.4	3.3	3.4					
				6.25									
				6.50	24.2	3.8	2.1	1.9					
				6.75									
				7.00	31.3	3.8	2.5	2.1					
				7.25									
				7.50	27.7	3.7	1.8	1.7					
				7.75									
				8.00	31.4	4.0	2.7	2.5					
				8.25									
				8.50	39.9	4.1	2.6	2.3					
				8.75									
				9.00	25.6	3.5	2.0	1.1					
				9.25									

5.49bastnaesite \leq 3% over 5cm.


7.16

7.77

.....Biotite-rich section:
Black, medium-grained. Felsics 70%; biotite 25,
others 5. No foliation.

ESSEX MINERALS COMPANY				LAC COSTEBELLE				B-3205				CORE SIZE BQ		DATE 18/6/78		PAGE 3		HOLE # 78-C-27	
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS							
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈							
12.5	12.8Magnetite & Bastnaesite ≤ 10%.		9.50	25.2	3.7	2.0	1.8											
				9.75															
				10.00	24.6	3.7	2.5	1.8											
				10.25						10.0	15.0	.004							
				10.50	25.2	3.7	1.8	1.8											
				10.75															
				11.00	24.8	3.6	1.7	1.7											
				11.25															
				11.50	53.7	4.1	2.6	3.2											
				11.75															
				12.00	26.2	4.2	2.2	2.0											
				12.25															
				12.50	23.0	3.1	1.6	1.6											
				12.75															
				13.00	25.6	3.8	2.2	2.1											
				13.25															
				13.50	29.0	3.8	1.8	1.8											
				13.75															
				14.00	32.1	3.9	2.2	1.9											

ESSEX MINERALS COMPANY				LAC COSTEBELLE				B-3205		CORE SIZE BQ		DATE 18/6/78		PAGE 5		HOLE # 78-C-27			
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS							
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈							
19.82	22.10	.....very coarse section: Similar to 14.02-14.63.		19.00	23.6	3.1	1.8	1.6										
				19.25															
				19.50	23.7	3.1	2.1	1.8											
				19.75															
				20.00	30.7	3.8	2.1	1.9											
				20.25						20.00	25.00	.008							
				20.50	23.3	2.7	1.8	1.5											
				20.75															
				21.00	26.8	3.4	2.0	1.9											
				21.25															
				21.50	25.6	4.0	1.9	1.8											
				21.75															
				22.00	23.3	3.4	1.9	1.6											
				22.25															
				22.50	25.4	4.1	2.5	2.1											
				22.75															
				23.00	23.9	3.4	2.0	1.8											
				23.25															
				23.50	35.5	4.0	2.8	2.2											

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
24.39	25.00biotite-rich zone. Similar to 7.16-7.77.		23.75	31.3	3.2	1.8	1.8						
				24.00										
				24.25										
				24.50	27.7	4.1	2.2	2.0						
				24.75										
				25.00	33.6	4.3	2.6	1.8						
				25.25										
				25.50	21.1	3.4	1.7	1.7						
				25.75										
				26.00	25.1	4.3	2.0	1.8						
				26.25										
				26.50	24.5	1.6	1.6	2.1						
				26.75										
				27.00	23.0	3.1	2.2	2.2						
				27.25										
				27.50	25.7	3.4	1.8	1.6						
				27.75										
				28.00	27.8	3.3	2.1	1.9						
				28.25										
				28.50										
				28.75										
				29.00										

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
25.00	31.10	.....very coarse section Similar to 14.02-14.63.		2850	23.8	3.0	2.0	1.9						
				2875										
				2900	21.6	2.5	2.0	1.6						
				2925										
				2950	24.4	2.7	2.0	1.6						
				2975										
				3000	24.5	3.9	2.0	2.0						
				3025						30.00	35.00	.009		
				3050	27.0	4.0	2.3	1.9						
				3075										
				3100	25.4	3.9	1.7	1.6						
				3125										
				3150	28.4	4.4	2.1	2.1						
				3175										
				3200	27.5	4.3	2.4	2.1						
				3225										
				3250	23.2	3.3	1.6	1.6						
				3275										
				3300	26.6	4.1	1.9	1.5						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				33.25										
				33.50	48.3	4.8	2.3	2.7						
				33.75										
				34.00	25.9	3.6	1.8	1.8						
				34.25										
				34.50	28.8	4.1	2.3	2.0						
				34.75										
				35.00	36.0	4.3	2.7	1.9						
				35.25						35.00	40.00	.009		
				35.50	23.5	3.4	2.1	1.9						
				35.75										
				36.00	22.4	3.2	1.7	1.6						
				36.25										
				36.50	26.0	2.0	2.0	1.8						
				36.75										
				37.00	23.0	2.0	1.6	1.6						
				37.25										
				37.50	22.9	3.3	1.8	1.6						
				37.75										

35.21

38.1

.....very coarse section.
Similar to 14.02-14.63.

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				38.00	30.9	3.4	2.1	1.8						
				38.25										
				38.50										
				38.75	29.1	2.9	2.2	2.3						
				39.00										
				39.25										
				39.50	24.1	3.0	2.1	1.8						
				39.75										
				40.00										
				40.25	27.2	3.5	2.1	1.8		40.00	45.00	.014		
				40.50										
				40.75										
		40.85	.....fracture at 10° to core.	41.00	33.4	3.8	2.1	2.2						
				41.25										
				41.50										
				41.75	25.5	3.4	1.8	2.0						
		41.77	.....fracture at 20° to core.	42.00										
				42.25										
		42.07	.....fracture at 20° to core.	42.50	22.3	3.3	1.7	1.5						

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				52.25	24.3	3.5	35	2.0						
51.68	53.96	MEDIUM RED GRANITE Refer to log 15. All minerals are present. Minor concentrations of bastnaesite up to 3% over 5cm. .....fracture at 10' to core Bastnaesite 4% over 5cm.		52.50										
				52.75										
				53.00	23.3	2.9	2.0	1.6						
				53.25										
				53.50										
				53.75	44.2	3.7	2.1	2.0						
				54.00										
				54.25										
53.96	55.49	COARSE RED GRANITE Very coarse section similar to 14.02-14.63. contact over 5cm.		54.50	50.0	4.7	2.3	2.3						
				54.75										
				55.00										
				55.25	23.2	3.6	2.0	1.7		55.00	61.30	.008		
				55.50										
				55.75										
				56.00	25.8	3.2	2.2	1.7						
				56.25										
55.49	56.10	MEDIUM GRAINED GRANITE Similar to 51.68-53.96 contact over 5cm.		56.50										
				56.75										
				56.00	25.8	3.2	2.2	1.7						
56.10	56.86	COARSE RED GRANITE Very coarse section similar to 14.02-14.63.		56.25										
				56.50										
				56.75	30.5	3.2	3.1	1.7						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
	56.86	....contact over 5cm.												
56.86	61.28	AUGENGNEISS Light red, fine-grained, similar to 43.45-51.68. Augens are defined by K-spars and quartz between black biotite layers. Unlike the paragneiss, these biotite layers do not extend through the en- tire core but only one or two centimeters, then the next layer begins. Banding is at 45 to 50° to core.		57.00										
				57.25										
				57.50	675	4.7	2.7	2.4						
				57.75										
				58.00	239	28	18	1.1						
				58.25										
				58.50	21.6	31	19	1.7						
				58.75										
				59.00	24.4	3.4	2.1	1.6						
				59.25										
				59.50	23.6	29	18	1.5						
				59.75										
				60.00	22.7	26	18	1.38						
				60.25										
				60.50	23.62	29	19	1.7						
				60.75	2									
				61.00	21.8	2.2	1.5	1.3						
				61.25										
	61.28	End of hole. <i>B. Strickman</i>												
										fines		.011		

ESSEX MINERALS COMPANY LAC COSTEBELLE B-3205				GEOLOGICAL LOG BY <u>R. Quartermain</u>				DATE <u>21/6/78</u>				HOLE # 78 - C - 28	
LAT. <u>115S</u> LONG. <u>1 + 07W</u> COLLAR ELEV. <u>95.3</u> DEPTH <u>11.3</u> DIP <u>90°</u> CORE SIZE <u>HW</u> CORE RECOVERY <u>96%</u>								CLAIM # <u>364130-3</u>					
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	
0	2.00	Overburden		0.25									
				0.50									
				0.75									
2.00	11.30	COARSE (TO MEDIUM) RED GRANITE Refer to log 15. All minerals present, though tourmaline, zircon and molybdenite occur in trace amounts only. The rock is 75% coarse-grained and 25% medium-grained. There are some coarse pegmatitic sections which are lighter in color and dominantly felsic in composition. There is abundant hematite staining where the grain size is ≤ 1.4 cm and bastnaesite crystals are found in minor concentrations throughout the core. The core has been faulted and fractured so that 15% of the core has been ground into chips. Green quartz is present throughout and bastnaesite grains display radiating fractures.		1.00									
				1.25									
				1.50									
				1.75									
				2.00									
	2.25	.....fracture at 10° to core.		2.25	25.2	6.2	2.0	1.7		2.0	4.3	.007	
	2.63	.....a bastnaesite grain has euhedral contacts with K-spar, anhedral contacts with quartz and has a 1 mm grain of K-spar as an inclusion.		2.50	40.2	8.3	2.1	2.6					
				2.75	32.3	6.5	2.1	2.2					
				3.00	35.4	7.5	2.3	2.1					
	3.35	.....bastnaesite $\leq 3\%$ over 5cm.		3.25	60.0	10.8	2.7	2.7					
				3.50	53.0	9.6	2.2	2.3					
				3.75	49.8	8.9	2.4	2.2					
3.85	4.20	.....very coarse section. Refer to log 20.		4.00	26.0	4.7	1.6	1.3					
				4.25	33.6	6.2	2.1	1.8					
				4.50	35.1	6.5	2.1	1.9		4.3	6.6	.002	

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
	4.87	.....fracture at 15° to core.		4.75	38.4	7.8	2.3	2.1						
				5.00	31.3	6.6	1.9	1.7						
				5.25	35.8	7.1	2.0	1.7						
5.45	5.40	.....Bastnaesite \leq 3% over 4cm.		5.50	26.2	5.0	1.7	1.4						
	5.62	.....Biotite-rich section. Black, medium-grained. K-spar 30%, quartz 30-40%, biotite 30, magnetite 5%. No foliation of biotite books.		5.75	33.3	6.1	2.3	1.9						
5.40	6.20	.....fracture sub-parallel to core. Much chlorite, hematite, limonite and calcite alteration along fracture surfaces.		6.00	26.9	4.6	2.0	1.8						
				6.25	25.2	4.8	2.0	1.7						
6.375	7.50	.....felsic section. The section is very coarse-grained and consists of K-spar and quartz with 5-10% mafics. The quartz is very white. From 4.8 to 5.0 the core is ground. At 5.0 at 1-2cm, quartz vein cuts the core at 22%. Along the fractured core surfaces there is abundant calcite, as well as a lime-to dark green, soft, clay mineral seen in previous hole. The grains along the vein are angular with a brecciated appearance and have been altered-- kaolinization of K-spars.		6.50	50.5	7.6	2.1	1.7						
				6.75	23.3	4.2	1.9	1.7						
				7.00	33.2	5.2	1.5	1.2						
				7.25	27.4	4.2	2.0	1.6		6.6	8.9	.006		
				7.50	105.1	16.7	3.4	2.4						
7.50	7.60	.....Biotite-rich section Refer to 3.45-3.62.		7.75	24.2	4.6	2.0	1.7						
7.8	8.0	.....core is ground and chipped.		8.00	32.8	5.2	1.7	1.4						
	8.15	.....fractures at 10 and 15° to core.		8.25	25.2	4.3	1.7	1.5						
8.30	8.50	.....core is ground and chipped.		8.50	25.0	3.7	1.6	1.3						
				8.75	25.8	4.0	1.6	1.5						
				9.00	35.4	5.8	2.1	1.5						
				9.25	72.1	11.5	3.2	1.8		8.9	11.3	.006		

GEOLOGICAL LOG BY R. Quartermain DATE 21/6/78 HOLE #78-C-29
RADIOMETRIC LOG BY _____ DATE _____

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
14.2	14.4	There are blebs of granite up to 2cm square over the next ten cm. ....blebs of granite up to 5cm square. These blebs penetrate core up to 2cm. Along the contact, the biotite has been altered to chlorite and vermiculite		14.25	26.3	3.6	1.8	1.5						
				14.50	25.6	3.7	2.1	1.8						
				14.75	24.1	3.7	2.3	2.0						
14.86	14.91	.....a granite vein cuts the core at 45°, subparallel to banding. Fractures at the contacts are coated with calcite.		15.00	24.3	3.5	2.0	1.7						
15.15	15.25	.....a granite vein cuts the core at 50°.		15.25	22.3	3.0	1.8	1.5						
				15.50	70.5	5.8	4.2	2.1						
				15.75	23.2	3.6	1.9	1.8						
15.65	16.25	.....contact at 60° to core.		16.00	22.1	3.2	1.8	1.6						
16.25	16.25	FINE TO COARSE RED GRANITE Orange to red, .1-2cm grain size. Felsic portion consists of pink to red, subhedral .2-2cm K-spar and white to clear, .2-1.5cm anhedral quartz. Mafic portion consists of black biotite in .1-1cm books. In this section there are minor inclusions of schist, the largest measuring 3cm x 6cm and having a foliation parallel to that of the rest of the schist. K-spar 50%, quartz 25, biotite 10, inclusions 15. .....contact at 65° to core.		16.25	40.3	4.6	2.4	2.1						
				16.50	41.6	4.5	2.4	2.2						
				16.75	26.0	4.0	2.2	1.9						
16.25	17.00	BIOTITE SCHIST Refer to log 30. Banding at 80°		17.00	26.7	3.6	2.0	1.6						
16.4	16.5	.....vein of red granite at 85° to core. The center of the vein has grains up to 1.5cm which decrease to .1cm at the contacts. There are 2 visible bastnaesite grains. .....fracture at 60° to core.		17.25	35.4	4.6	2.2	1.8		17.0	19.1	.008		
				17.50	34.2	5.0	1.9	1.9						
				17.75	97.9	6.7	3.3	3.4						
17.00	18.6	MEDIUM (TO COARSE) RED GRANITE Refer to log 15. Lacks zircon, molybdenite and tourmaline. Grain size varies from .1 to 2cm and this occurs randomly throughout the section. There is more biotite in the medium-grained areas, giving it a dark purple color. There is much alteration of biotite to chlorite and the biotite has developed no foliation at all, unlike the schist. .....contact at 90° to core.		18.00	31.3	4.2	1.7	1.5						
				18.25	54.7	5.2	2.3	2.7						
				18.50	76.2	7.4	3.1	3.2						
	18.6			18.75	22.1	2.9	1.8	1.6						

[illegible]

LAT. 115 + 97 LONG. 3 + 00W COLLAR ELEV. 97.8 DEPTH 9.4m DIP 90° CORE SIZE HW CORE RECOVERY 99%

CLAIM #
364130-3

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	6.00	AUGENGNEISS Grey to salmon pink, fine to medium-grained Felsic portion: white to salmon pink, subhedral, striated, frequently hematite-stained, .1-.5cm K-spar and white to clear, anhedral .1-.3cm quartz Mafic portion: black, subhedral .1-.2cm biotite and grey, anhedral, .1cm magnetite. There are other mafics less than .1cm which cannot be readily identified. There is minor hematite staining of K-spars and biotite has been altered to chlorite. Along fracture surfaces, biotite has been altered to vermiculite; limonite, chlorite and calcite occur. Banding varies with depth from 50° to 70° to 50° to core. There are numerous fractures and the core is ground due to blocking. There are trace amounts of pyrite. The augen-shapes are the result of concentrations of K-spar and quartz between mafic layers. Unlike the paragneiss, the mafic layers do not extend through the core, but end randomly throughout the core. There are a few coarser granitic sections, some having distinct contacts of veins while others appear to be zones of recrystallization. Mineral percentages: Felsics- K-spar 50-60, quartz 25-35, calcite 1 Mafics- biotite 10-15, chlorite 2, hematite 2, magnetite 1, limonite <1, vermiculite <1, pyrite trace.		0.25	27.7	4.2	1.9	1.6		0	2.3	.004		
				0.50	28.5	4.5	2.0	1.9						
				0.75	27.2	6.0	1.8	1.8						
				1.00	30.3	6.9	2.1	1.9						
				1.25	24.2	5.4	1.8	1.8						
				1.50	25.4	6.1	1.4	1.3						
				1.75	26.3	6.2	1.8	3.0						
				2.00	24.8	5.2	1.9	1.9						
				2.25	24.2	5.2	1.9	1.8						
				2.50	26.6	5.4	1.8	1.4		2.3	4.6	.006		
				2.75	22.3	4.4	1.8	1.7						
				3.00	21.6	4.6	1.9	1.8						
.25	.38	....core is ground and chipped		3.25	30.1	5.7	2.0	1.9					
	.32	....medium red granite vein at 75° to core over 3cm.											
	1.00	....medium red granite vein at 70° to core over 3cm.											
	1.02	....fracture at 25° to core.											
1.62	3.12	....fracture sub to parallel to core. Much chipping and grinding of core. Limonite and calcite are along fracture surfaces.		3.50	29.3	5.8	2.2	1.7					
				3.75	26.6	8.8	1.8	1.7						
	4.12	....medium red granite vein at 65° to core over 3cm.		4.00	28.4	5.2	1.9	1.7					
	4.20	....fracture trace at 10° to core.		4.25	27.6	5.9	2.3	1.9					
				4.50	26.6	4.8	1.8	1.6						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
				4.75	26.1	4.6	2.0	1.5		4.6	6.9	.002		
				5.00	29.8	4.8	2.0	1.6						
				5.25	24.6	3.7	3.3	1.4						
				5.50	20.8	3.5	1.6	1.3						
	5.80	....fracture at 70° to core.		5.75	26.7	4.0	1.9	1.6						
	6.00	....contact at 85° to core.		6.00	24.0	3.8	2.0	1.7						
6.00	6.27	COARSE RED GRANITE Refer to log 15. Light red in color due to absence of hematite stain.		6.25	32.9	4.6	1.7	1.3						
	6.27	....contact at 85° to core.		6.50	15.8	2.9	1.6	1.4						
6.27	9.100	BIOTITE SCHIST Black, fine-grained, equigranular. Felsic portion: white to clear, .1cm subhedral K-spars, and white to clear, .1cm anhedral quartz. Mafic portion: black, .1cm euhedral biotite and grey .1cm anhedral magnetite. Biotite has been altered to chlorite and vermiculite. There is limonite along fractures and minor disseminated pyrite. Mineral percentages: Felsics- K-spar 20-30, quartz 10-15 Mafics- biotite 60-70, chlorite 5, magnetite 1, vermiculite 1, magnetite--trace.		6.75	18.3	3.6	1.8	1.5						
				7.00	30.6	4.4	2.0	1.4		6.9	9.4	.002		
				7.25	17.3	3.2	1.8	1.6						
				7.50	16.7	3.0	1.6	1.3						
	6.65	....fracture at 30° to core.		7.75	15.2	2.4	1.3	1.1						
6.87	7.00	....Medium red granite vein at 65° to core.		8.00	16.7	3.8	1.6	1.5						
	7.30	....Medium red granite vein at 50° to core over 1cm.		8.25	15.2	3.3	1.6	1.4						
	8.00	....fractures at 80 and 15° to core.		8.50	17.6	1.4	1.4	1.1						
	8.20	....fracture at 10° to core.		8.75	16.6	2.9	1.2	1.2						
	9.10	....contact is a fracture at 65° to core.		9.00	16.7	2.9	1.3	1.3						
9.10	9.40	AUGENGNEISS Refer to 0-6.00 of this log.		9.25	24.9	3.9	1.7	1.7						

[illegible]

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain DATE 22/6/78
RADIOMETRIC LOG BY _____ DATE _____

HOLE #
78 - C - 31

LAT. 116 S LONG. 4 + 10W COLLAR ELEV. 103 DEPTH 30ft, 8.5m DIP 90° CORE SIZE _____ HW _____ CORE RECOVERY 90%

CLAIM #
364/30-3

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	
0	6.00	COARSE (TO MEDIUM) RED GRANITE Refer to log 15. All minerals present. Medium-grained areas occur over 5 to 10cm intervals. Hematite, green quartz and bastnaesite all present.		0.25	34.8	4.2	1.6	1.8		0	2.1	.006	
				0.50	42.1	5.2	2.3	2.2					
				0.75	30.5	3.8	2.0	1.6					
				1.00	29.0	3.5	2.0	1.6					
				1.25	28.3	2.7	1.9	1.7					
				1.50	29.0	2.8	2.2	1.8					
				1.75	35.6	3.0	1.6	1.4					
				2.00	32.9	3.2	2.5	2.0					
				2.25	27.1	2.1	1.8	1.5					
				2.50	28.0	2.6	2.0	1.6					
				2.75	24.6	2.1	1.8	1.6					
				3.00	27.8	2.5	1.8	1.6					
				3.25	49.4	3.3	2.5	1.7					
				3.50	32.5	2.7	2.2	1.6					
3.50	3.65very coarse section. Refer to log 24.		3.75	25.8	2.2	1.8	1.4		2.1	4.2	.003	
				4.00	21.0	2.3	1.9	1.5					
4.20	4.35	....biotite-rich section. Black books of biotite ± 1cm up to 25%, K-spar 40, quartz 30.		4.25	31.7	2.3	2.0	1.4				
				4.50	37.6	2.5	2.6	1.8					
										4.2	6.3	.009	

[illegible]

GEOLOGICAL LOG BY R. Quartermain DATE 23/6/78 HOLE #
78 - C - 32
RADIOMETRIC LOG BY _____ DATE _____

CLAIM #
364130-3

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	3.2	COARSE RED GRANITE Refer to log 15. There are some very coarse sections with grain size less than 4cm.		0.25	29.9	6.8	2.3	2.0		0	2.3	.006		
	.20	.....fracture at 15° to core.		0.50	30.3	6.9	2.1	2.0						
				0.75	27.8	5.6	1.9	1.6						
				1.00	28.1	5.7	2.1	2.0						
				1.25	25.1	4.4	1.7	1.4						
				1.50	32.5	5.3	2.2	1.8						
1.60	1.85	.....very coarse section. Refer to log 24.		1.75	38.6	6.7	2.4	1.9						
				2.00	29.3	4.2	1.9	1.6						
				2.25	61.8	10.1	3.3	2.0						
2.30	2.70	.....very coarse section. Refer to log 24.		2.50	37.3	7.0	2.1	1.7		2.3	4.6	.004		
				2.75	34.9	5.1	1.5	1.4						
	2.80	.....fracture at 20° to core.		3.00	40.6	7.3	2.1	1.8						
	3.20	.....contact over 1cm at 65° to core.		3.25	26.2	3.8	1.8	1.3						
3.20	6.40	MEDIUM RED GRANITE Refer to log 15. There is an abundance of bastnaesite and red hematite. The quartz is a yellow to green color in areas of concentrated bastnaesite.		3.50	40.0	5.6	2.5	1.7						
				3.75	55.5	7.6	2.4	1.4						
3.7	3.8	.....Bastnaesite 5%.		4.00	42.3	5.7	2.4	1.5						
				4.25	42.9	5.6	2.3	1.5						
				4.50	22.6	2.6	1.0	1.1						

ESSEX MINERALS COMPANY				LAC COSTEBELLE				B-3205		CORE SIZE	DATE	PAGE	HOLE #
										HW	23/6/78	2	78-C-32
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈	
				4.75	44.5	5.8	2.4	1.6		4.6	6.9	.007	
				5.00	39.1	4.8	1.9	1.5					
				5.25	28.5	3.6	1.7	1.4					
				5.50	28.1	3.7	1.8	1.6					
5.70	5.80	....Bastnaesite \leq 3%.		5.75	80.4	8.7	2.9	1.5					
				6.00	40.4	6.2	2.3	1.6					
6.30	6.35	....Bastnaesite \leq 3%.		6.25	36.8	6.0	2.3	1.7					
	6.40	....contact over 5cm roughly 80° to core.		6.50	38.0	6.1	2.2	1.5					
6.40	8.00	COARSE RED GRANITE Refer to log 15. Not as coarse as 0-3.2, but grains 2cm.		6.75	30.2	4.1	1.8	1.4					
6.40	6.50	....very coarse section. Refer to log 24.		7.00	35.2	4.7	1.9	1.3					
				7.25	37.8	5.4	2.0	1.5		6.9	9.25	.011	
7.40	7.70	....very coarse section. Refer to log 24.		7.50	31.2	4.5	1.7	1.3					
				7.75	28.2	3.0	1.5	1.4					
8.00	9.25	MEDIUM RED GRANITE Refer to log 15. Granite is more of an orange color with a few white K-spar phenocrysts. Bastnae- site is abundant and there is epidote veining.		8.00	32.2	3.5	1.7	1.4					
8.00	8.10	....bastnaesite \leq 5%.		8.25	102.7	8.3	2.3	1.4					
8.40	8.50	....bastnaesite \leq 5%.		8.50	49.6	4.4	1.9	1.3					
	8.50	....three epidote veins cut core at 25°.											
8.90	9.10	....bastnaesite \leq 5%. There also numerous fractures, some with epidote. They cut core subparallel at 15°.		8.75	41.0	3.9	1.4	1.2					
9.15	9.25	....core is ground. Large grains indicate coarse vein. Core is not as orange and similar to the typical medium red granite.		9.00	49.2	6.7	2.4	1.4					
	9.25	End of hole.		9.25	153	2.5	2.3	1.2					

ESSEX MINERALS COMPANY LAC COSTEBELLE B-3205				GEOLOGICAL LOG BY <u>R. Quartermain</u> DATE <u>24/6/78</u> RADIOMETRIC LOG BY _____ DATE _____				HOLE # 78-C-33						
LAT. <u>117D</u> LONG. <u>5 + 50W</u> COLLAR ELEV. <u>98 m</u> DEPTH <u>32'</u> , <u>9.1m</u> DIP <u>90°</u> CORE SIZE <u>HW</u> CORE RECOVERY <u>94%</u>				CLAIM # 364130-3										
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	2.9	COARSE RED GRANITE Refer to log 15. All minerals present except molybdenite, zircon and tourmaline. There are some very coarse sections with gradual contacts. Biotite has been altered to chlorite and yellow to green stained quartz occurs throughout. The rock is broken up into sections ≤ 20 cm due to numerous fractures parallel to and perpendicular to core. ....fracture at 85° to core. " " " " " " 80° " " " " " .		0.25	26.7	5.0	1.9	1.7		0	1.5	.003		
				0.50	25.2	4.7	2.2	1.9						
				0.75	41.4	6.1	2.5	1.8						
				1.00	30.6	4.7	1.9	1.6						
				1.25	23.1	3.2	1.5	1.3						
				1.50	31.9	5.1	1.9	1.6						
				1.75	22.6	3.2	1.6	1.4						
				2.00	68.7	8.4	2.4	1.3						
				2.25	30.1	4.0	1.9	1.5						
				2.50	26.0	3.1	1.5	1.3						
				2.75	20.3	3.1	1.5	1.4						
				3.00	23.0	3.6	1.5	1.2						
				3.25	18.9	2.6	1.4	1.3						
				3.50	20.0	2.3	.9	.8						
				3.75	22.1	2.6	1.2	1.1						
2.90	9.10	PARAGNEISS Refer to log 20. Banding is variable through core. ....banding at 50° to core. ....fracture at 80° to core. ....banding at 40° to core. ....banding at 70° to core. ....fracture at 80° to core.		4.00	16.8	2.4	1.2	1.2		2.9	5.0	.007		
				4.25	18.6	2.8	1.5	1.4						
				4.50	17.6	3.1	1.6	1.4						
4.15	4.2	Medium red granite vein at 80° to core.												

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
	4.6banding at 65° to core.		4.75	17.3	2.5	1.5	1.3						
	5.1fracture at 75° to core.		5.00	12.5	2.2	2.2	1.2						
5.6	6.6core is ground and chipped. Fractures run parallel to core and there is epidote veining present.		5.25	14.5	2.1	1.2	1.0		5.0	7.1	.004		
				5.50	11.0	2.0	1.1	1.1						
				5.75	7.9	2.3	1.2	1.2						
				6.00	13.0	1.5	1.2	1.2						
				6.25	9.4	2.1	1.1	1.0						
				6.50	6.4	2.0	.9	.9						
6.4	6.5	.....Medium red granite vein cuts core at 45°: Similar to log 18 granite and like the vein of hole 34 of 8.8m.		6.75	8.7	1.9	.9	.9					
6.85	6.9Medium red granite vein at 80° to core. Refer to log 15.		7.00	10.5	2.3	1.1	1.1		7.1	9.1	.007		
	7.0	.....banding at 55° to core.		7.25	14.3	1.9	1.0	1.0					
	7.6	.....fracture at 85° to core.		7.50	8.1	2.1	.9	.9					
				7.75	10.5	2.1	1.1	1.0						
				8.00	6.5	1.6	.8	.8						
				8.25	5.7	2.0	.8	.7						
				8.50	4.6	2.1	.8	.8						
	8.5fracture at 80° to core.		8.75	9.1	2.0	.9	.9		Fines		.006		
	8.7	.....banding at 65° to core.		9.00	5.0	1.8	.6	.4					
	9.1	End of hole.		9.25										

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain DATE 23 / 6 / 78 HOLE # 78 - C - 34
RADIOMETRIC LOG BY _____ DATE _____

LAT. 117S LONG. 6 + 50W COLLAR ELEV. 99.58 DEPTH 34', 9.35m DIP 90° CORE SIZE HW CORE RECOVERY 91% CLAIM # 364130-3

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	
0	1.00	Core is ground quite fine--core loss .6m											
0	4.00	COARSE (TO MEDIUM) RED GRANITE Refer log 18. This granite is orange to red in colour; cut by numerous epidote, calcite, and quartz veins; is dominantly white quartz; has few mafics and is unlike the typical red granite. There is much fracturing of the core and chloritic alteration is abundant.		0.25	25.8	3.9	2.2	2.1		0	2.0	.007	
				0.50	23.3	2.8	2.0	1.9					
				0.75	33.6	3.0	1.9	1.5					
				1.00	29.0	2.6	1.8	1.6					
.15	.40	....core is ground and chipped		1.25	21.4	2.5	1.7	1.5					
	.50	....fracture at 10° to core.		1.50	21.4	2.7	1.7	1.4					
	.65	....calcite and epidote and chlorite veins cut the core at 25° to 40° over 20cm.		1.75	28.7	2.4	1.9	1.4					
1.00	1.60	....core is ground and chipped		2.00	22.7	1.9	1.7	1.4					
1.30	1.70	....a 1-3cm quartz and calcite vein cuts the core at 10°. Chloritic veins run parallel to these.		2.25	20.3	1.9	1.4	1.2		2.0	4.0	.007	
1.90	2.00	....core ground and chipped.		2.50	16.1	2.6	2.0	1.4					
	2.30	....fracture at 15° to core.		2.75	33.5	2.1	1.9	1.2					
	2.90	....fracture at 20° to core.		3.00	20.9	1.8	1.4	1.2					
	3.10	....three fracture traces at 15° to core.		3.25	32.4	2.9	1.4	1.5					
3.20	3.30	....medium-grained section. More mafics than in the rest of core; about 20%.		3.50	29.1	3.0	1.7	1.5					
3.60	3.90	....zone of numerous epidote and calcite veins cutting the core at 20 to 40° with a width .05cm.		3.75	29.3	3.1	1.4	1.2					
3.70	4.0	....Magnetite-rich zone. Magnetite grains 1.5cm, concentrated to 8% over the interval.		4.00	15.7	2.2	1.6	1.5					
	4.00	....contact over 5cm. Granite grades into finer-grained augengneiss.		4.25	24.4	3.2	1.9	1.6		4.0	6.7	.007	
4.00	9.35	AUGENGNEISS (PARAGNEISS?) Refer to log 30. This augengneiss does not have augens as well-developed as those seen in previous		4.50	21.1	2.2	1.5	1.5					

[illegible]

[illegible]

GEOLOGICAL LOG BY P. Quarterhain DATE 26/6/78 HOLE # 78 C 35
RADIOMETRIC LOG BY _____ DATE _____

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
	9.30	....Enidote veing at 45° to core.		9.50	23.4	3.8	2.3	2.0						
	9.76	....fracture at 45° to core.		9.75										
10.06	10.37	....core is ground and chlorite veining occurs at 35° to core.		10.00	23.2	3.7	2.2	1.7						
				10.25										
10.67	10.82	....Bastnaesite and tourmaline? 20%.		10.50	25.7	3.6	2.1	1.5						
				10.75										
				11.00	22.5	3.6	2.3	2.0						
				11.25										
				11.50	28.8	4.1	2.1	2.1						
				11.75										
				12.00	24.1	4.0	2.1	1.8						
12.20	12.80	....Biotite-rich section with biotite 25-30%; felsic portion 50-60%; others 10%.		12.25										
				12.50	23.6	3.6	2.1	1.8						
				12.75										
				13.00	24.2	3.4	1.9	1.5						
				13.25										
				13.50	25.0	3.4	1.9	1.7		13.20	18.20	.005		
				13.75										
				14.00	25.4	3.8	2.1	1.9						

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃₀₈		
23.48	23.78	.....Biotite schist Refer to log 20. Banding at 65° to core.		23 75										
23.70	25.91	MEDIUM RED GRANITE Refer to log 15. There are fine-grained zones up to 10 cm in length with a weak foliation indicating association with the paragneiss.		24 00	35.1	3.1	2.6	2.1						
	24.39	.....calcite fracture at 40° to core.		24 25										
				24 50										
	24.70	.....calcite fracture at 45° to core.		24 75										
				25 00	35.6	3.7	2.8	2.1						
				25 25										
25.30	25.91	.....numerous calcite and epidote veins cut the core at random.		25 50										
				25 75										
	25.91	.....contact gradual over 5cm, at approximately 80° to core.		26 00	35.6	3.3	2.5	2.0						
25.91	39.94	PARAGNEISS Refer to log 20; it is generally red though where it grades into biotite schist, it is grey in color. Banding sub-perpendicular to core 75-90°.		26 25										
26.30	27.44	.....numerous hairline chlorite and epidote veins.		26 50										
	26.83	.....fractures at 10 and 15° to core.		26 75										
				27 00	36.3	3.6	2.7	2.1						
				27 25										
				27 50										
28. 28.05	28.20	.....fine to medium red granite vein. Contacts gradual over 3cm with vein coarsening from the edges to the center. Much alteration of feldspars to kaolinite and subsequent removal of this material, leaving an abundance 10% of empty		27 75										
				28 00	34.4	3.0	2.6	1.9						
				28 25										
										27.30	32.3	.008		

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
		vesicles 1mm or less.												
	28.35	.....fracture at 20° to core.		28 50										
				28 75										
				29 00	35.7	3.8	2.9	2.0						
				29 25										
	29.57	.....fracture at 95° to core.		29 50										
				29 75										
				30 00	34.4	3.9	3.0	2.2						
				30 25										
				30 50										
				30 75										
				31 00	34.6	3.6	2.7	2.1						
				31 25										
				31 50	3									
				31 75										
				32 00	38.0	4.0	3.3	2.4						
				32 25										
				32 50						32.30	37.30	.007		
				32 75										
				33 00	33.8	3.2	2.7	2.0						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
37.80	38.06	.....a coarse grey granite vein cuts the schist at 75° to core parallel to banding.		38 00	36.7	3.6	2.8	2.4						
	38.26	.....a .5cm quartz vein cuts the core at 45°.		38 25										
	38.56	.....a coarse grey granite bleb 2cm x 3cm in the schist.		38 50	33.5	3.7	3.2	2.7						
	38.72	.....interlayered coarse grey granite blebs and veins. Along the contacts of these two, anhedral pyrite is concentrated up to 2%.		38 75										
				39 00										
				39 25										
	39.48	.....contact at 75° to core.		39 50	33.2	3.7	2.5	1.9						
				39 75										
	39.94	.....contact at 75° to core.		40 00	37.5	3.7	2.9	2.4						
39.94	41.16	COARSE (TO MEDIUM) RED GRANITE Refer to log 15. About 10% is medium-grained, the remainder coarse. About 10% mafics and 90% felsics. Minerals present: quartz, K-spar, biotite, bastnaesite and chlorite.		40 25										
				40 50	36.5	3.5	2.9	2.2						
41.16	45.43	PARAGNEISS Refer to log 20.		40 75										
				41 00	35.9	3.0	2.7	1.9						
				41 25										
41.62	41.77	.....biotite schist. Refer to log 20.		41 50										
				41 75										
				42 00	33.9	3.5	2.7	2.1						
				42 25										
				42 50										
										42.30	47.30	.007		

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
46.34	47.56	PARAGNEISS/BIOTITE SCHIST Refer to log 20. Banding is at 75° to core.		47 50						47.30	52.30	.004		
	46.95	.....bleb of coarse white granite 2cm by 3cm.		47 75										
	47.56	.....contact at 80° to core.		48 00	35.3	3.4	2.7	1.8						
47.56	47.71	.....quartz vein subperpendicular to core.		48 25										
47.71	50.61	AUGENGNEISS Refer to log 30.		48 50										
	48.78	.....a 5cm granite vein at 70° to core.		48 75										
				49 00	42.4	3.6	2.8	2.0						
				49 25										
				49 50										
				49 75										
				50 00	32.6	3.1	2.7	2.0						
				50 25										
				50 50										
	50.61	.....contact gradual over 10 cm.		50 75										
50.61	57.77	PARAGNEISS Refer to log 20.		51 00	34.4	3.5	3.0	2.2						
				51 25										
				51 50										
				51 75										
				52 00	35.0	2.9	2.8	1.9						

[illegible]

[illegible]

[illegible]

ESSEX MINERALS COMPANY LAC COSTEBELLE B-3205			GEOLOGICAL LOG BY <u>R. Quartermain</u> DATE <u>27/6/78</u> RADIOMETRIC LOG BY _____ DATE _____				HOLE # 78 - C - 36							
LAT. <u>116</u> LONG. <u>6 + 50</u> COLLAR ELEV. <u>96.76</u> DEPTH <u>44'</u> , <u>12.9</u> ^m DIP <u>90</u> CORE SIZE <u>HW</u> CORE RECOVERY <u>95%</u>			CLAIM # <u>364127-2</u>											
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	4.2	Overburden		0.25										
				0.50										
				0.75										
				1.00										
				1.25										
				1.50										
				1.75										
				2.00										
4.2	12.9	PARAGNEISS Refer to log 20. The paragneiss has biotite with minor magnetite as mafic minerals and there is a light green, anhedral .2cm mineral found at random through the core--secondary serpentine(?) The core is cut by numerous quartz and epidote veins and is highly fractured. Approximately 30% of the core is ground and chipped.		2.25										
				2.50										
				2.75										
				3.00										
				3.25										
				3.50										
				3.75										
				4.00										
				4.25										
				4.50										
				228	3.1	2.1	1.7		4.20	6.40	.008			

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
0	4.6	....core is chipped												
4.6	4.7	....Coarse red granite vein at 55° to core. Refer to log 15. Contacts are gradual over 1 cm.		4.75	25.0	4.2	1.9	1.7						
	4.8	....banding at 50° to core.		5.00	30.4	4.4	1.6	1.0						
	5.1	....numerous chlorite and epidote veins cut the core at 30-50°. Fracture at 35° to core.		5.25	28.1	4.3	2.3	2.1						
				5.50	30.0	4.7	2.3	2.2						
				5.75	32.8	4.9	1.9	1.8						
5.8	5.9	....Coarse red granite vein at 70° to core. As above.		6.00	31.0	5.0	2.4	1.9						
6.0	8.3	....most of the core is fractured into pieces 8cm in length, all of which are fractured parallel or sub-parallel to core and most of which have chlorite along these surfaces.		6.25	24.3	4.0	2.4	2.0						
				6.50	24.2	3.6	1.7	1.7						
				6.75	30.7	4.9	2.1	2.1		6.40	8.60	.005		
				7.00	23.5	3.3	1.9	1.7						
				7.25	23.3	3.5	2.3	2.0						
				7.50	23.8	3.3	2.0	1.9						
				7.75	28.1	4.2	1.9	1.8						
				8.00	22.6	3.2	1.9	1.7						
	8.4	....banding at 70° to core.		8.25	25.9	3.9	2.1	1.7						
				8.50	25.2	3.8	2.0	1.6						
8.6	8.7	....coarse red granite vein at 70° to core. As above.		8.75	35.0	5.7	2.2	2.1		8.60	10.80	.002		
	8.8	....fracture at 45° to core.		9.00	28.3	3.8	1.8	1.5						
				9.25	27.8	3.9	1.7	1.6						

[illegible]

HOLE #
78-C-37

CLAIM #
364127-2

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
4.88	5.49	.....Biotite-rich section. Biotite 30%, felsics 70%.		4.75	30.0	3.7	2.0	1.7						
				5.00										
6.10	6.40	.....fracture sub-parallel to core over 1 foot (.31 meter).		5.25	29.4	4.2	2.2	1.8		5.0	9.9	.012		
				5.50										
				5.75	30.0	4.1	2.2	2.0						
				6.00										
				6.25	30.5	4.2	2.3	1.7						
				6.50										
				6.75	50.5	4.6	3.0	2.6						
				7.00										
				7.25	167.8	82	6.4	6.5						
				7.50										
8.08	8.38	.....Bastnaesite & tourmaline (?) ± 5%.		7.75	41.1	4.2	2.7	2.4						
				8.00										
				8.25	32.5	4.0	2.4	2.1						
				8.50										
8.84	9.15	.....fracture at 10° to core. .....Bastnaesite & tourmaline ± 5%. Numerous chlorite stringers cut the core.		8.75	57.4	4.6	2.9	2.8						
				9.00										
				9.25	47.8	4.2	2.5	2.4						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
14.48	14.53	....Medium red granite vein with gradual contacts over 1cm. This vein is concordant to the banding and has as mineralogy K-spar, quartz, biotite, bastnaesite, chlorite, zircon, molybdenite, tourmaline (?).		14.25										
				14.50										
14.86	14.99	....Medium red granite with gradual contacts over 1cm.		14.75	43.9	4.0	2.5	2.9						
				15.00										
				15.25										
				15.50										
15.55	15.61	....Medium red granite with gradual contacts over 1cm. Bastnaesite \leq 5%.		15.75	44.7	4.3	2.7	2.6						
16.00	16.08	....Medium red granite with gradual contacts over 1cm. Bastnaesite and tourmaline (?) \leq 8%.		16.00										
				16.25										
	16.46	....contact over 3cm. Fracture at 60° in contact zone.		16.50										
16.46	29.88	COARSE (TO MEDIUM) RED GRANITE Refer log 15. Fraction of coarse/medium is 80/20. All minerals present. Some very coarse felsic are scattered throughout this section, as well as biotite-rich sections. Green quartz occurs at random as does bastnaesite with its characteristic radiating structure.		16.75	25.9	9.1	2.4	2.0		16.50	21.50	.001		
				17.00										
				17.25	39.9	4.9	2.8	2.1						
17.68	17.99	....Bastnaesite \leq 5%.		17.50										
				17.75	77.3	5.2	3.5	4.3						
17.99	18.29	....Bastnaesite \leq 5%.		18.00										
				18.25	27.4	4.0	2.8	2.5						
				18.50										
				18.75	26.0	4.0	2.6	2.0						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
23.17	24.00	....very coarse section. Refer to log 24.		23.75	24.4	3.5	2.2	1.8						
				24.00	31.4	3.9	2.3	1.9						
				24.25	31.4	3.9	2.3	1.9						
				24.50										
				24.75	26.2	3.5	2.0	1.8						
				25.00										
				25.25	26.3	3.6	2.1	1.9						
				25.50										
				25.75	27.5	3.6	2.0	1.6						
25.91	27.19	....Biotite-rich section. Biotite 40%; quartz 30, K-spar 25, bastnaesite 5		26.00										
				26.25	47.6	4.1	2.4	2.3						
				26.50										
				26.75	45.2	4.2	2.7	3.1		26.50	31.50	.008		
				27.00										
				27.25	24.4	4.0	2.3	2.3						
				27.50										
27.74	28.35	....very coarse section. Refer to log 24.		27.75	25.2	3.6	2.0	1.7						
				28.00										
				28.25	25.1	3.7	2.1	1.8						

[illegible]

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
42.68	42.94	....Bastnaesite 3%.		42.75	24.7	3.1	1.7	1.8						
				43.00										
				43.25	36.3	4.0	2.5	2.6						
43.45	43.90	....Biotite-rich section. Refer to 37.2-37.8.		43.50										
				43.75	46.0	4.4	2.8	2.8						
				44.00										
	44.21	....Bastnaesite \leq 10% over 5cm.		44.25	28.4	3.9	2.3	2.1						
				44.50										
	44.66	....Bastnaesite \leq 30% over 5 cm.		44.75	24.3	3.7	2.0	1.9						
				45.00										
				45.25	27.0	3.5	2.1	2.0						
				45.50										
				45.75	28.6	3.6	2.3	1.8						
				46.00										
				46.25	26.1	3.7	2.2	1.9						
				46.50										
				46.75	36.7	4.1	2.6	2.7						
				47.00										
	46.95	....Bastnaesite \leq 10% over 5 cm.		47.25	26.4	3.4	2.1	2.1						

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	
57.93	58.23	.....Coarse grey to red granite section with gradual contacts over 5 cm.		57.00									
				57.25									
				57.50									
				57.75	24.2	2.8	1.8	1.8					
				57.00									
				58.25									
				58.50									
				58.75	21.9	1.9	1.9	1.8					
				59.00									
				59.25									
59.15	59.45	.....same as above		59.50									
				59.75	23.3	3.3	1.9	1.7					
				60.00									
				60.25									
				60.50									
				60.75	23.9	3.3	1.9	1.8					
60.37	60.67	.....same as above		61.00									
				61.25	24.3	3.4	2.3	1.9					
				61.50									
61.28		End of hole.								fines		007	

GEOLOGICAL LOG BY R. Quartermain DATE 30/6/78 HOLE # 78-C-38
RADIOMETRIC LOG BY _____ DATE _____

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	8.8	PARAGNEISS Refer to log 20. Banding varies from 70 to 80° to core. There are coarser zones with gradual contacts over a few centimeters. There is minor fracturing and chipping.		0.25	30.4	6.3	2.1	3.2		0	2.20	.008		
				0.50	29.3	6.3	2.2	2.2						
	.40	....fracture at 90° to core.		0.75	26.5	6.4	2.1	2.0						
	.60	....fracture at 10° to core.		1.00	29.9	7.1	2.1	2.0						
	1.2	....fracture at 10° to core.		1.25	27.3	5.8	1.9	1.7						
	1.4	....fracture at 10° to core.		1.50	29.3	6.4	2.0	1.8						
				1.75	28.9	6.1	1.8	1.7						
				2.00	26.5	5.7	2.2	1.9						
2.0	2.5	....core is chipped and ground with fracture traces subparallel to core.		2.25	26.7	5.8	2.1	2.0		2.20	4.40	.006		
				2.50	22.8	5.0	2.0	1.8						
				2.75	25.0	6.1	2.4	2.2						
				3.00	28.7	6.0	1.9	1.8						
				3.25	29.2	6.3	2.1	1.9						
				3.50	27.2	6.4	2.2	2.2						
				3.75	27.3	6.1	2.2	1.9						
				4.00	27.7	6.1	1.9	1.7						
				4.25	28.1	6.5	2.1	2.0						
4.4	4.46	....Coarse red granite vein at 60 to core.		4.50	27.6	6.2	2.1	1.9		4.40	6.60	.008		

B. Blackman

ESSEX MINERALS COMPANY LAC COSTEBELLE B-3205				GEOLOGICAL LOG BY <u>R. Quartermain</u> DATE <u>30/6/78</u>				HOLE # 78 - C - 39										
LAT. <u>112+006</u> LONG. <u>4+25w</u> COLLAR ELEV. <u>93.51</u> DEPTH <u>2.3m</u> , <u>30.5</u> DIP <u>90</u> CORE SIZE <u>HW</u> CORE RECOVERY <u>95</u>				CLAIM # 364127-3														
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS						
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈						
0	9.3	COARSE (TO MEDIUM) RED GRANITE Refer to log 1. This granite is similar to that of Hole C-1 both in texture and the characteristic salmon pink color. All minerals are present as described in 78-C-15. The medium-grained sections, though not abundant, are characterized by more abundant red hematite staining and grains. Bastnaesite and tourmaline (pyrochlore?) occur in concentrated areas randomly throughout the core. Bastnaesite exhibits its radiating structures and green quartz is present. The tourmaline (pyrochlore?) mineral which is radioactive--high thorium, is black, sub to euhedral, with a hardness of approximately 5-6, though on its conchoidal fracture surfaces it is greater than 8.	|||||	0.25	33.1	35.9	5.4	8.6		0	2.3	.003						
				0.50	40.1	8.9	2.3	2.6										
				0.75	35.9	8.0	2.2	1.8										
				1.00	83.8	17.3	3.1	4.8										
				1.25	51.5	10.4	2.8	2.1										
				1.50	64.4	13.2	3.0	3.2										
				1.75	60.1	12.4	2.6	3.3										
				2.00	158.9	27.9	5.4	6.2										
	1.1	1.2Biotite-rich section. Biotite 30%, felsics 70.	2.25	87.5	44.9	7.6	10.1		2.3	4.6	.003						
				2.50	124.3	22.9	5.0	5.1										
				2.75	112.5	20.9	4.2	4.7										
				3.00	118.4	21.3	4.7	4.6										
	3.3	3.8very coarse granite section. Refer to log 24.	3.25	129.5	24.3	5.1	5.5										
				3.50	33.3	7.8	2.4	2.0										
				3.75	34.0	6.8	1.7	1.7										
				4.00	28.1	6.6	2.1	2.0										
				4.25	43.1	9.3	2.1	2.2										
				4.50	82.4	7.5	2.2	1.7										

[illegible]

[illegible]

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain DATE 4/7/78 HOLE # 78 - B - 1
RADIOMETRIC LOG BY S. Yatabe DATE _____

LAT. 10 + 00N LONG. 3 + 00E COLLAR ELEV. _____ DEPTH 30.5m, 100 DIP 90° CORE SIZE BQ CORE RECOVERY _____ CLAIM # 364057-2

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	
0	30.5	WHITE COARSE-- GRAINED GRANITE Light gray to pink, fine to coarse grained. Felsic portion: white to light red, striated, sub- hedral, .2cm-4cm, stained K-spars; clear to white to smoky-green to gray, anhedral to subhedral, .2- 2cm quartz. Mafic portion: black, sub to euhedral, .1cm-2cm bio- tite; grey, anhedral .2-.5cm magnetite. Core fractures subperpendicular to the axis with mi- nor fractures at 10-20° to the core. Such fractures have calcite and chlorite along surfaces. There is minor alteration of biotite to chlorite and red, subhedral 4.5cm spiral garnets occur in some areas (high metamorphic grade). There is minor hematite staining of K-spars. The coarser pegmatitic sections with grains up to 4cm are characterized by books of biotite and dark smo- ky quartz. There are medium grained sections which are equi- granular .4-.5cm with an even distribution of min- erals. Generally, the grain size is variable, as is the color of the granite. Biotite occurs as small .1 cm grains, as 1cm needles or in books. Mineral Percentages: K-spar 60, quartz 30-40 Biotite 5-10, chlorite 1, garnet <1, magnetite-- trace.		0.25	37.0	4.6	2.5	2.0		0	5.0	.012	
				0.50	32.8	3.8	2.5	1.9					
				0.75	24.3	3.4	2.1	1.8					
				1.00	34.9	4.1	2.5	1.9					
				1.25	48.9	4.9	3.3	2.1					
				1.50	38.6	4.0	2.8	1.9					
				1.75	41.1	4.0	2.7	2.4					
				2.00	23.8	3.6	2.1	1.8					
				2.25	31.3	4.3	2.1	1.8					
				2.50	65.2	5.5	3.8	1.9					
				2.75	30.2	3.5	2.8	1.9					
				3.00	29.5	3.5	2.3	1.6					
.5	.75	....very coarse section. Grey, coarse-grained 2-4cm. Felsic portion: white, subhedral, striated, 2-4cm K-spar; smoky gray anhedral 2-3cm quartz. Mafic portion: minor biotite. K-spar 60%, quartz 30-40, others--trace.		3.25	37.0	3.7	2.3	1.7					
				3.50	26.4	3.3	2.0	1.5					
1.6	2.2	....very coarse section. Similar to .5-.75. More biotite present as well as red subhedral 1cm garnets. K-spar 50-60%, quartz 30-40, biotite 5, garnet 1-2.		3.75	32.4	4.1	2.7	1.9					
				4.00	32.7	3.7	2.3	1.7					
				4.25	31.4	3.9	2.2	1.6					
				4.50	35.6	3.9	2.5	1.6					

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈		
				4.75	32.4	3.8	2.5	1.9						
				5.00	26.9	3.9	2.2	1.6						
				5.25	28.7	3.9	2.1	1.5		5.0	10.0	.011		
				5.50	29.1	3.9	2.1	1.7						
				5.75	26.4	3.6	2.0	1.5						
				6.00	26.2	3.9	2.0	1.8						
6.1		....fracture at 15° to core.		6.25	25.2	4.1	1.9	1.7						
6.3	6.6	....very coarse section. Refer to .5-.75		6.50	24.5	3.3	1.9	1.7						
				6.75	26.5	3.6	2.1	1.7						
				7.00	28.8	4.1	2.2	1.9						
				7.25	29.4	3.5	2.1	1.7						
				7.50	36.1	4.2	2.1	1.6						
				7.75	33.1	4.4	2.9	2.3						
				8.00	24.7	3.3	1.9	1.6						
				8.25	27.7	3.4	2.0	1.6						
				8.50	30.2	3.9	2.3	2.2						
				8.75	36.4	3.7	2.3	2.1						
				9.00	84.9	4.1	2.9	2.1						
9.1	9.3	....medium-grained section. Refer to White Coarse-Grained Granite; contains		9.25	51.1	4.3	3.0	2.4						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS			
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈			
12.3	12.4	about 20% of a smoky grey quartz.		9.50	25.7	3.5	2.3	1.9							
				9.75	30.6	3.7	2.3	1.8							
				10.00	36.4	4.1	2.7	1.7							
				10.25	35.3	4.3	3.1	2.0							
				10.50	47.5	4.8	2.7	1.7							
				10.75	33.3	3.6	2.2	1.7							
				11.00	27.4	3.2	1.7	1.5							
				11.25	24.9	3.4	2.1	1.7							
				11.50	41.2	3.9	2.8	1.8							
				11.75	29.0	3.4	2.2	1.8							
		12.00	30.8	3.7	2.2	1.7									
		12.25	26.1	3.7	2.3	1.8									
		12.50	29.4	4.1	2.4	2.0									
		12.75	34.3	3.6	2.3	1.6									
		13.00	32.0	4.0	2.2	1.7									
		13.25	32.7	3.7	2.6	2.0									
		13.50	34.8	3.9	2.1	1.5									
		13.75	32.1	3.4	2.1	1.5									
		14.00	26.2	3.2	1.8	1.5									

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
15.88	19.3	Medium to Coarse White Granite Refer to O. The feldspars are now pink in color and garnets occur randomly throughout.		14 25	36.2	3.7	2.6	2.1						
				14 50	40.4	4.3	2.8	1.6						
				14 75	74.2	5.9	4.5	2.3						
				15 00	26.6	3.7	2.2	1.5						
				15 25	36.8	3.6	2.3	1.4		15.0	20.0	.010		
				15 50	31.7	4.0	2.4	1.7						
				15 75	33.9	3.5	2.4	1.8						
				16 00	27.0	3.7	1.9	1.6						
				16 25	25.8	3.7	2.1	1.8						
				16 50	25.3	3.5	2.0	1.8						
				16 75	29.7	4.1	2.2	1.8						
				17 00	30.1	4.1	2.6	1.9						
				17 25	28.6	3.8	2.1	1.9						
				17 50	32.4	4.3	2.7	2.0						
				17 75	28.5	4.0	2.3	1.8						
				18 00	30.4	3.6	1.8	1.4						
				18 25	39.5	4.6	3.1	2.0						
				18 50	38.2	4.2	2.6	1.7						
				18 75	32.6	3.1	2.2	1.5						

Medium to Coarse White Granite

Refer to O. The feldspars are now pink in color and garnets occur randomly throughout.

16.13fracture at 10° to core.

16.9fracture at 80° to core with chlorite on fracture surfaces.

17.2fracture at 70° to core with epidote on fracture surfaces.

17.6fracture at 30° to core.

17.7epidote veining at 80° to core.

[illegible]



[illegible]

[illegible]

LAT. 8 + 50N LONG. 3 + 00E COLLAR ELEV. _____		DEPTH 30.3m, 99.4m DIP 90	CORE SIZE BQ	CORE RECOVERY _____	CLAIM # 364057-2									
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U3O8		
0	5.4	COARSE GRAINED WHITE GRANITE White to grey, medium to coarse-grained (.2-2cm). Felsics: white to pink, striated, subhedral, .2-2cm hematite-stained K-spars; white to smoky-grey, anhedral .2-1 cm quartz. Mafics: black, subto euhedral, .2-1.5cm biotite. This section is more equigranular than the granite viewed in B-1, with the average grain size being 1 cm. Smoky quartz and hematite staining occur randomly throughout. Biotite has been altered to chlorite and vermiculite. Natural fractures are oriented subperpendicular to core. Mineral Percentages: Felsics- quartz 40, K-spar 50-55. Mafics- biotite 5-10		0.25	28.7	3.7	2.3	1.9		0	5.0	.011		
				0.50	45.1	4.5	2.9	1.6						
				0.75	34.9	3.5	2.6	1.6						
				1.00	23.8	3.7	2.1	1.7						
				1.25	25.6	3.5	2.5	2.1						
				1.50	42.9	4.6	3.1	1.9						
				1.75	60.1	5.4	4.1	1.6						
				2.00	37.8	4.4	3.0	1.9						
				2.25	28.4	3.6	2.2	1.5						
				2.50	42.4	5.0	3.1	1.8						
				2.75	31.9	4.1	2.7	1.7						
				3.00	28.9	3.8	2.5	1.6						
				3.25	53.5	4.9	3.6	1.8						
				3.50	26.5	8.2	7.0	1.9						
				3.75	30.1	3.7	2.4	1.7						
				4.00	34.7	4.3	2.6	2.0						
				4.25	33.2	3.5	2.5	1.9						
				4.50	38.6	3.9	2.6	1.7						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	FROM	TO	U ₃ O ₈			
	5.4	....contact gradual over 5cm.												
5.4	9.1	AUGENGNEISS Grey to pink, fine to medium grained. Felsics: white to pink, subhedral .1-.3cm K-spar; white to clear, anhedral .1-.3cm quartz. Mafics: black, subhedral .1-.2cm biotite. The augens consist of K-spar and quartz and are well-developed. They occur up to 2cm wide and extend through the quartz. The biotite layers have a maximum thickness of .2cm. There is minor hematite staining and biotite is altered to chlorite and vermiculite. Banding is generally of 45° to core. Throughout this section, there are zones of white granite. Some have distinct contacts with the gneiss but most have gradual contacts, indicating the granite has been sweated out of the gneiss. Mineral percentages: K-spar 50, quartz 30 Biotite 20.		4.75	58.2	5.2	3.9	1.8						
				5.00	42.3	4.3	2.9	1.7						
				5.25	39.4	4.7	2.9	1.8		5.0	10.0	.016		
				5.50	91.1	6.6	5.7	1.7						
				5.75	41.0	4.7	3.1	2.0						
				6.00	22.7	3.1	1.8	1.5						
				6.25	34.0	4.1	2.7	1.9						
				6.50	54.2	5.6	3.8	1.9						
6.5	6.8	....Coarse white granite. Refer to 0-5.4; with gradual contacts over 5cm.		6.75	84.2	7.0	5.6	2.0						
7.0	7.2	....Coarse white granite. Refer to 6.5-6.8.		7.00	27.0	3.9	2.2	1.9						
				7.25	28.7	3.8	2.2	1.6						
7.5	7.6	....Biotite Schist. Black, fine-grained. Felsic portion consists of white, subhedral .1cm K-spar 10%; white, anhedral .1cm quartz 10%. Mafic portion consists of black anhedral .1 cm biotite 80%. Banding is at 40° to core and red K-spar grains are concentrated along the contacts with the gneiss.		7.50	31.0	4.4	2.5	2.1						
				7.75	49.3	5.2	3.4	1.9						
				8.00	25.2	4.1	2.5	2.0						
8.1	8.2	....Coarse white granite. Refer to 0-5.4 Contacts at 45° to core over 1cm.		8.25	28.8	3.3	2.0	1.4						
	8.6	....fracture at 85° to core over 1cm.												
8.9	9.0	....Coarse white granite. Refer to 6.5-6.8.		8.50	116.2	8.5	7.2	2.1						
				8.75	64.1	5.8	4.3	1.7						
				9.00	64.1	5.8	4.3	1.7						
	9.1	....contact gradual over 5cm.		9.25	32.2	3.8	2.4	1.6						

100

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS			
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈			
15.0	14.2	augengneiss is continuous. Banding at 45° to core. ....calcite fracture at 50° to core, but perpendicular.		14.25	22.7	3.1	1.9	1.7							
				14.50	21.2	3.2	1.8	1.7							
				14.75	21.4	3.3	2.0	1.8							
				15.00	20.8	3.2	1.9	1.6							
	16.4Biotite Schist. Refer to 7.5-7.6. Banding varies from 45-60° to core. Fractures are parallel to banding.		15.25	21.1	3.2	1.9	1.7		15.0	20.0	.013			
				15.50	22.1	3.1	1.9	1.8							
				15.75	41.9	4.3	3.2	1.7							
				16.00	38.1	4.5	2.9	1.8							
				16.25	25.0	3.6	2.0	1.7							
				16.50	25.0	3.6	2.0	1.7							
				16.75	45.9	4.9	3.4	2.0							
				17.00	50.0	5.2	3.8	2.3							
16.4	30.3	COARSE WHITE GRANITE Refer to 0-5.4. This section is generally lighter in color, due to more abundant white quartz. Garnet is also present, as is muscovite; however, these appear to be restricted to a section of graphic granite. ....very coarse section. White to pink, grains 3cm. Mineralogically similar to the white coarse granite.		17.25	44.2	4.4	2.9	1.8							
				17.50	53.1	5.3	3.7	1.8							
				17.75	44.3	4.9	3.2	1.9							
				18.00	56.0	5.2	3.5	1.5							
				18.25	63.7	5.9	4.1	2.0							
				18.50	23.2	3.3	2.5	2.0							
				18.75	29.1	4.0	2.2	1.8							

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS			
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈			
20.5	27.0	Graphic Granite Section White, medium to coarse-grained. Felsics: white, subhedral .1 to 1cm striated K-spar; clear to white .1 to 1cm quartz. Mafics: black .1-.3cm biotite. The section is not entirely graphic granite; there are zones of the white granite; however, compositionally, the section is relatively homogeneous. There is alteration of biotite to chlorite and in some areas, there are flakes of light green muscovite (primary?) and grains .1cm of red subhedral garnet. There are primary fractures subparallel to core, and the core splits easily subperpendicular to the core axis. In the graphic granite ensolution, lathes of quartz are generally oriented at 70° to core though this varies. Mineral percentages: Quartz 40, K-spar 55-60 Biotite 1-3, others 1. .....fracture at 25° to core. .....fracture at 10° to core with calcite on fracture surfaces. fracture at 80 to core.			19 00	24.0	3.2	2.4	2.0						
				19 25	27.2	3.5	2.2	1.7							
				19 50	21.7	2.9	1.7	1.4							
				19 75	22.4	3.6	1.9	1.8							
				20 00	23.5	3.1	2.2	1.7							
				20 25	24.6	3.8	1.9	1.6		20.0	25.0	.002			
				20 50	21.8	3.1	1.6	1.6							
				20 75	24.4	3.3	1.7	1.4							
				21 00	22.5	3.6	1.7	1.5							
				21 25	22.9	3.2	1.8	1.7							
				21 50	23.3	3.6	2.1	1.8							
				21 75	24.2	4.0	2.1	1.9							
				22 00	21.2	2.9	2.1	1.6							
				22 25	22.9	3.6	1.6	1.4							
				22 50	22.4	3.5	1.8	1.5							
				22 75	21.9	3.1	2.3	1.9							
				23 00	23.6	4.0	2.2	2.0							
				23 25	23.5	3.7	1.6	1.5							
				23 50	22.5	3.2	1.8	1.5							

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				23 75	23.5	3.5	2.0	1.7						
				24 00	23.9	3.3	1.7	1.6						
				24 25	25.7	3.2	2.0	1.5						
				24 50	26.1	3.5	2.3	1.8						
				24 75	28.3	3.6	2.3	1.8						
				25 00	27.4	3.1	1.8	1.4						
				25 25	23.2	3.2	2.0	1.9		25.0	30.3	.019		
				25 50	27.2	3.2	2.4	2.6						
				25 75	25.3	4.1	2.6	2.1						
				26 00	26.2	3.7	2.6	2.2						
				26 25	26.7	3.7	2.3	2.0						
				26 50	23.1	3.6	2.1	1.8						
	26.5	.....fracture at 10° to core with calcite and minor kaolinization of feldspars.		26 75	77.9	5.7	4.1	2.2						
				27 00	41.5	4.3	3.2	2.1						
				27 25	52.9	4.3	3.2	2.0						
				27 50	49.9	4.6	3.1	1.9						
				27 75	77.6	5.9	4.4	1.1						
				28 00	25.9	2.9	1.9	1.5						
	28	.....fracture at 10° to core.		28 25	25.9	2.9	1.9	1.5						

[illegible]

ESSEX MINERALS COMPANY
LAC COSTEBELLE B-3205

GEOLOGICAL LOG BY R. Quartermain DATE 6/7/78 HOLE #
RADIOMETRIC LOG BY _____ DATE _____ 78 - B - 3

LAT. 7.00 N LONG. 3.25 E COLLAR ELEV. _____ DEPTH 30.8m, 103 DIP 90 CORE SIZE BQ CORE RECOVERY _____ CLAIM #
364057-2

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
0	5.25	WHITE COARSE GRAINED GRANITE White to gray to light pink, medium to coarse-grained. Felsic portion: white to pink, striated, subhedral .2-2cm K-spars; white to smoky-grey to green anhedral 1-1.5cm quartz. Mafic portion: black, sub to euhedral, .1 to 2cm biotite. The biotite is altered to chlorite in some areas and to vermiculite along fractures. Green quartz occurs throughout and is more abundant than the smoky grey variety. In the medium-grained sections the granite is equigranular; however, in the coarser sections, grain size is variable. The core splits perpendicular to its vertical axis and there are few primary fractures. There is minor red hematite staining and red subhedral garnets < .2 cm are weakly developed. Biotite is more abundant in the medium-grained portions. Mineral Percentages: Felsics- quartz 30-35, K-spar 55-65 Mafics- biotite < 2-6, others < 1.		0.25	36.7	4.3	2.7	2.0		0	5.0	.007		
				0.50	28.0	3.9	2.1	1.7						
				0.75	31.6	3.9	2.9	2.2						
				1.00	37.0	4.2	3.1	2.3						
				1.25	43.2	7.4	3.0	1.9						
				1.50	32.9	7.1	2.6	1.9						
				1.75	34.5	7.4	2.9	2.2						
				2.00	29.7	6.3	2.5	1.9						
				2.25	33.4	7.0	2.7	2.0						
				2.50	29.5	5.9	2.2	1.6						
				2.75	30.4	6.1	2.3	1.8						
				3.00	27.7	5.8	2.1	1.6						
				3.25	28.8	5.9	2.5	2.0						
				3.50	27.4	5.8	2.3	2.0						
				3.75	26.5	5.9	2.4	2.1						
				4.00	28.8	5.7	2.2	1.9						
				4.25	28.1	6.0	2.3	1.8						
				4.50	26.4	5.0	1.8	1.4						

ESSEX MINERALS COMPANY				LAC COSTEBELLE B-3205				CORE #		DATE		PAGE		HOLE #	
								BQ		6/7/78		2		78-B-3	
FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS			
					TOTAL	K	U	Th		FROM	TO	U ₃ O ₈			
				4.75	30.0	6.6	2.9	2.2							
				5.00	31.4	6.0	2.2	1.6							
	5.25	.....contact gradual over 5cm.		5.25	27.9	6.1	2.4	2.1		5.0	10.0	.013			
5.25	5.75	AUGENGNEISS Dark grey, fine-grained, equigranular. Felsic portion: subhedral white, .1cm striated feld- spars; white to clear, anhedral .1cm quartz. Mafic portion: black, subhedral .1cm biotite. The section is almost a schist and the augens are sub- rounded quartz grains .5cm which are scattered randomly through the section. Foliation is at 45° to core. Bottom contact is gradual over 1cm with biotite concentrated and particles of gran- ite 1.5 intruding the gneiss. .....contact over 1cm--relatively distinct.		5.50	28.3	5.7	2.2	1.7							
				5.75	31.0	6.6	2.2	2.0							
				6.00	29.5	5.9	2.0	1.7							
				6.25	27.2	6.4	2.7	2.2							
				6.50	27.7	5.8	2.2	1.7							
	5.75			6.75	27.3	5.6	1.8	1.7							
5.75	22.3	WHITE COARSE GRAINED GRANITE Refer to 0-5.25. There is abundant lime green quartz throughout the coarser-grained sections, while the medium-grained sections have more pink		7.00	28.2	5.4	2.1	1.8							
				7.25	28.5	6.2	2.5	1.7							
				7.50	34.0	7.0	2.5	2.0							
				7.75	28.6	6.2	2.4	2.0							
				8.00	38.3	7.5	2.5	1.8							
				8.25	30.2	6.4	2.6	2.1							
				8.50	30.3	6.3	2.4	1.8							
				8.75	29.7	6.2	2.8	2.2							
				9.00	47.1	8.8	3.0	1.8							
				9.25	38.0	7.6	2.8	1.8							

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
		hematite staining. The core is split at 90° to core, but there are few primary fractures.		9.50	34.6	6.6	2.5	1.9						
				9.75	43.7	8.5	3.2	2.1						
				10.00	31.5	6.4	2.5	1.9						
				10.25	41.8	7.3	2.6	1.7		10.0	15.0	.027		
				10.50	137.6	22.4	7.3	2.0						
				10.75	32.2	6.8	2.5	1.7						
				11.00	35.8	6.8	2.4	1.6						
				11.25	50	9.0	3.3	2.2						
				11.50	36.4	6.7	2.8	1.8						
				11.75	96.8	16.5	5.6	2.4						
				12.00	42.1	7.8	2.9	1.8						
				12.25	30.1	6.0	1.6	1.9						
				12.50	35.0	6.6	2.5	1.8						
				12.75	31.5	6.6	2.8	2.3						
				13.00	41.1	8.3	3.0	2.2						
				13.25	39.0	7.1	2.8	2.2						
				13.50	32.1	6.4	2.2	1.7						
				13.75	41.6	7.8	3.0	1.9						
				14.00	33.9	6.4	2.3	1.8						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
14.3	14.5	....Biotite-rich section. Biotite up to 15% with K-spar 50%; quartz 30-35%. There are a few red subhedral .3cm garnets. Some grow within the feldspars while others grow over biotite.		14 25	48.1	9.1	3.3	2.1						
				14 50	30.4	6.0	1.8	1.4						
				14 75	29.5	5.8	2.3	1.7						
				15 00	34.4	6.7	2.3	1.6						
				15 25	72.2	12.1	4.4	2.6		15.0	20.0	.020		
				15 50	29.2	5.9	2.2	1.7						
				15 75	34.3	6.6	2.2	1.6						
				16 00	31.8	5.8	2.1	1.7						
				16 25	50.2	9.0	3.5	2.0						
				16 50	45.8	4.9	3.1	1.8						
16.5	21.2	....Medium-grained section. Refer to 0-5.25. Compositionally similar; however, this section is equigranular with the average grain size .3cm. It has more abundant hematite staining than the coarse-grained section.		16 75	42.8	4.5	2.7	1.8						
				17 00	34.4	4.3	2.5	1.8						
				17 25	28.5	3.7	2.1	1.8						
				17 50	33.1	3.7	2.3	2.1						
				17 75	38.3	4.0	2.5	1.9						
				18 00	33.0	4.0	2.6	2.3						
				18 25	31.0	3.9	2.3	1.6						
				18 50	31.2	4.2	2.5	1.8						
				18 75	42.6	4.5	3.0	2.0						

[illegible]

[illegible]

GEOLOGICAL LOG BY R. Quartermain DATE 07/17/70 HOLE # 78-B-4
RADIOMETRIC LOG BY _____ DATE _____

CLAIM #
364057-2

[illegible]

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
14.5	14.8	.....Felsic-rich section. Similar to 4.6-5.0.		14 25	38.4	8.1	3.1	2.2						
				14 50	41.9	7.9	2.8	2.0						
				14 75	46.2	8.4	3.2	1.9						
				15 00	34.2	6.4	2.5	1.6						
15.1	15.6	.....over this section of core there is abundant green quartz not seen elsewhere.		15 25	27.2	5.4	1.8	1.5		15.0	20.0	.011		
				15 50	28.7	6.2	2.5	1.9						
				15 75	31.2	6.4	2.2	1.6						
				16 00	30.8	6.2	2.3	1.8						
				16 25	36.1	7.5	2.8	2.0						
				16 50	36.2	7.0	2.7	1.9						
				16 75	26.0	5.0	1.9	1.6						
				17 00	29.0	6.4	2.5	1.7						
				17 25	27.9	6.2	2.7	1.9						
				17 50	36.0	7.1	2.5	1.7						
				17 75	32.4	7.0	2.5	2.0						
				18 00	41.9	8.0	3.1	2.0						
				18 25	42.8	7.8	3.0	1.9						
				18 50	29.9	6.2	2.3	1.7						
				18 75	28.6	6.0	2.3	1.7						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
22.0	22.5	.....over this section the granite is fine-grained (.3cm) and in areas there appears to be a very weak foliation at 45° to core, possibly a remnant foliation.		19 00	27.0	5.8	2.2	1.7						
				19 25	29.5	6.5	2.0	1.7						
				19 30	33.6	7.3	2.7	1.8						
				19 75	27.5	6.2	2.8	2.2						
				20 00	26.6	5.6	2.4	1.9						
				20 25	33.1	6.4	2.4	1.8		20.0	25.0	.015		
				20 50	32.3	6.2	2.4	1.7						
				20 75	50.1	8.3	3.2	1.8						
				21 00	46.6	8.5	3.1	2.1						
				21 25	36.3	6.6	2.5	1.7						
				21 50	82.3	6.5	2.5	2.0						
				21 75	58.9	11.0	4.1	2.1						
				22 00	82.1	13.8	4.8	2.8						
		.....fracture at 15° to core.		22 25	29.1	5.7	2.5	2.0						
				22 50	35.6	7.3	2.6	1.8						
				22 75	36.4	7.5	2.6	1.7						
				23 00	34.7	7.1	2.9	2.0						
				23 25	51.2	9.1	3.2	1.5						
				23 50	50.8	9.6	3.5	2.1						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
25	25.2Biotite-rich zone Biotite 30%, quartz 30, K-spar 40. Coarse-grained (1cm).		23 75	47.8	9.2	3.2	2.1						
				24 00	36.0	6.8	2.9	1.6						
				24 25	41.6	7.1	2.4	1.2						
				24 50	74.8	12.7	4.9	2.1						
				24 75	31.1	6.6	2.6	2.0						
				25 00	38.0	7.4	3.0	2.1						
				25 25	29.1	6.2	2.6	1.9						
				25 50	32.0	7.1	2.7	2.0						
				25 75	28.2	5.8	2.1	1.9						
				26 00	24.9	5.4	2.3	1.7						
26.5	26.8	BIOTITE SCHIST(AUGENGNEISS) Black, fine-grained. Felsics: white, subhedral striated 1cm K-spars and white to clear anhedral .1cm quartz. Mafics: black, subhedral .1cm biotite. Biotite is altered to chlorite and vermiculite. The schistosity is well developed and the rock fractures very easily along the plane of the foli- ation at 45° to core. Mineral Percentages: Felsics- K-spars 30, quartz 20. Mafics- biotite 50,others 2%. There is a minor augening of the feldspars and quartz. .....contact ground; assumed to be 45° to core.		26 25	80.5	6.6	2.5	1.8		25.0	30.5		.012	
				26 50	26.0	5.7	2.1	1.8						
				26 75	34.7	6.5	2.5	1.7						
				27 00	33.5	6.8	2.6	1.7						
				27 25	43.3	7.8	2.8	1.7						
				27 50	62.8	9.3	3.2	1.8						
				27 75	45.5	8.2	2.9	1.8						
				28 00	39.8	7.0	2.4	1.8						
				28 25	35.4	6.9	2.6	1.8						
				26.8	29.0	WHITE COARSE GRAINED GRANITE Refer to 0-26. .....fracture at 15° to core.		27 75						
28 00	39.8	7.0	2.4					1.8						

[illegible]

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				14.25	23.0	3.5	2.3	2.0						
				14.50										
				14.75	23.4	3.8	2.3	1.8						
				15.00										
				15.25	22.7	3.6	2.2	2.0		15.0	20.0	.008		
15.50	15.90	....Coarse red granite. Refer to 16.2 - 16.3. 3 veins 5-10 cm in width and 4 cm apart cut the core at 20°, 45° and 75° respectively. They do not contain as much magnetite as the previous section, only < 1%.		15.50										
15.90	16.00	....Core is fractured.		15.75	26.9	3.5	2.2	2.0						
16.20	16.30	....Red coarse grained granite. Salmon red, coarse grained. Consists of pink, subhedral, < 2 cm, striated K feldspars 60%; white to smokey, < 1 cm, anhedral quartz 30-40%. black, subhedral < 1 cm, biotite, < 2%. Minor hematite staining. Contacts with gneiss are gradual over 5 cm or so.		16.00										
		....Red coarse grained granite.		16.25	36.4	4.2	2.8	1.8						
				16.50										
16.60	16.90	....Red coarse grained granite. Refer to 16.2 - 16.3.		16.75	22.5	3.9	2.4	1.8						
16.90	17.50	....Banding of gneiss reflects a gentle 'S' shaped fold which grades into augen gneiss.		17.00										
				17.25	23.8	3.0	1.9	1.8						
				17.50										
17.50	17.90	AUGEN GNEISS Refer to 0 - 1.93.		17.75	28.5	3.1	2.2	1.5						
17.90	18.60	RED COARSE GRAINED GRANITE Refer to 16.2 - 16.3.		18.00										
				18.25	30.6	4.2	2.7	2.3						
				18.50										
18.60	18.80	BIOTITE SCHIST (Augen Gneiss) Black, fine grained. Banding at 70° to core axis.		18.75	39.0	4.5	3.1	2.1						

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
		White, subhedral, <.1 cm, K feldspars 30%; clear, anhedral, <.1 cm, quartz 20%; black, anhedral, <.1 cm biotite 50%.		19.00	31.8	3.7	2.4	1.8						
	18.70	....Fracture at 10° to core.		19.25	34.5	3.6	2.2	1.4						
	18.80	....Contact over 1 cm at 75° to core.												
18.80	28.50	WHITE COARSE GRAINED GRANITE White to grey, medium to coarse grained. Felsic portion - consists of pink to white to green, striated, subhedral, < 3 cm, K feldspars and clear to smokey, anhedral, < 2 cm, quartz. Mafic portion - consists of black, subhedral, < 1 cm, biotite and grey, anhedral, <.5 cm magnetite. Minor alteration of biotite to chlorite and hematite. Staining of K feldspars occurs at random. Rock is more fractured than seen elsewhere, with calcite coating on many fractures. Minor disseminated pyrite and chalcopyrite. Grain size varies randomly throughout the section. Felsics: K Feldspar 55 - 60% Quartz 30 - 35% Mafics: Biotite 10% Magnetite 1-2% Others trace		19.50	113.9	7.6	6.2	2.3						
				19.75	26.8	3.1	2.2	1.7						
				20.00	32.8	3.6	2.4	1.8						
				20.25	34.9	3.9	2.3	1.7		20.0	25.0	.047		
				20.50	98.7	6.4	5.5	2.6						
				20.75	52.0	5.7	3.2	2.1						
				21.00	74.7	6.0	4.6	2.2						
				21.25	43.3	4.8	2.8	2.0						
	19.80	....Biotite schist. Refer to 18.6 - 18.8. An 8 cm inclusion in the granite. Banding is erratic.		21.50	69.6	5.7	4.8	2.3						
	19.90	....Calcite fracture at 75° to core axis with chalcopyrite mineralization <1%.		21.75	11.9	8.0	6.1	3.4						
	21.50	....Fractures at 20° to core axis.		22.00	33.2	3.5	2.6	1.9						
				22.25	124.6	7.9	6.6	2.5						
22.50	23.00	....Fracture runs parallel to the core and core is chipped over this interval.		22.50	45.7	4.6	2.3	2.1						
				22.75	30.9	3.8	1.2	1.7						
23.00	25.00	.... Coarse grained section with much lime green staining.		23.00	34.4	4.1	2.7	1.7						
				23.25	38.9	4.3	2.3	1.5						
				23.50	30.2	3.4	2.0	1.6						

[illegible]

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
				38.00										
				38.25										
				38.50	23.7	3.1	1.9	1.6						
				38.75										
				39.00										
				39.25										
				39.50	22.9	2.8	1.8	1.6						
				39.75										
	40.00	.....Quartz vein at 45 ⁰ to core axis and 3 cm wide.		40.00										
				40.25						40.0	45.0	.005		
				40.50	23.6	3.1	1.9	1.8						
				40.75										
				41.00										
				41.25										
				41.50	23.6	3.3	2.0	1.9						
				41.75										
	42.00	.....Quartz vein at 85 ⁰ to core axis and 4 cm wide.		42.00										
				42.25										
				42.50	23.1	3.1	1.9	1.7						

[illegible]

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
	57.00	....Fracture at 10° to core axis.		57.00										
				57.25										
				57.50	26.0	3.4	2.1	1.8						
				57.75										
				58.00										
				58.25	24.5	3.6	2.1	2.0						
				58.50										
				58.75										
58.70	61.25	COARSE WHITE GRANITE Refer to 18.8-28.5.		59.00	27.9	3.7	2.1	1.7						
		....Fracture at 10° to core axis.		59.25	35.9	4.0	2.7	1.9						
	59.50	....Fractures at 15° to core axis.		59.50	27.0	3.4	2.2	2.0						
				59.75	37.8	3.5	2.6	1.9						
	60.00	....Fractures at 10° to core axis.		60.00	27.8	3.5	1.9	1.9						
				60.25	24.6	4.0	2.0	1.7						
	60.50	....Fractures at 10° to core axis, with calcite on fracture surfaces.		60.50	25.9	3.2	2.4	1.7						
				60.75	28.0	3.3	2.2	1.8						
				61.00	28.7	3.3	2.4	1.9						
	61.25	....Contact at 70° to core axis.		61.25	25.8	3.4	2.0	1.7						
61.25	61.30	BIOTITE SCHIST (Amphibolite?) Refer to 28.5-54.6. <i>R. L. Williams</i>		61.50						fines		.027		

GEOLOGICAL LOG BY R. Quartermain DATE July 9, 1978 HOLE #
RADIOMETRIC LOG BY _____ DATE _____ 78 - A - 2

CLAIM #
364071-3

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP.-44				SAMPLE			ASSAYS			
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈			
0	55.8	<p><u>PARAGNEISS</u> Purplish grey to grey to brown. Fine to medium grained. Dominantly fine and equigranular. Felsic portion - consists of pink to white, subhedral, striated <.3 cm, K feldspars and clear to smokey grey, anhedral, <.2 cm quartz. Mafic portion - consists of black, subhedral, <.2 cm, biotite and black, anhedral, <.2 cm magnetite. Banding is variable with depth from 40-85° to core axis. There is minor alteration of biotite to chlorite and vermiculite and along some fracture surfaces there is abundant white calcite and lime green epidote. Some of the epidote has been subsequently altered to clay minerals. In some areas there is minor red hematite staining of the K feldspars. Over the first interval of core, there is much fracturing and chipping of core and throughout the section there are abundant fractures, some parallel to banding; others not. There are numerous red granite veins and sections cutting the core, some with pyrite mineralization. There is no folding in the paragneiss. However, minor folds occur in the granitic sections. The gneiss varies in colour after displaying a distinct contact between a purple section and a grey section. There are as well, variations in grain size with some sections ≤.05 cm.</p> <p>Felsics: K Feldspar 50 - 60% Quartz 30 - 40% Mafics: Biotite 10 - 20% Magnetite 2% Others < 2%</p> <p>....Core is ground and chipped. ....Banding at 85° to core axis. ....Fracture at 10° to core axis. ....Coarse red granite section.</p> <p>Red, grains <1.5 cm. Pink to white, K feldspar 50-60%; white to clear quartz 30-40%; black biotite 10-15%, Others <2%. Minor hematite staining and alteration of biotite to chlorite. Contacts with gneiss are semi-distinct over 1 cm at 75° to core.</p>													
				0.25							0	5.0	.012		
				0.50	23.3	3.0	1.9	1.6							
				0.75											
				1.00	21.2	3.0	2.0	1.8							
				1.25											
				1.50	22.5	2.9	2.1	1.7							
				1.75											
				2.00	22.6	3.0	2.1	1.8							
				2.25											
				2.50	21.7	2.7	1.7	1.6							
				2.75											
				3.00	22.7	3.3	2.1	1.9							
				3.25											
				3.50	24.5	3.3	2.0	1.7							
				3.75											
				4.00	22.7	3.0	1.9	1.7							
				4.25											
				4.50	22.5	3.1	1.9	1.6							
.50	1.50	....Core is ground and chipped.													
	2.00	....Banding at 85° to core axis.													
	2.20	....Fracture at 10° to core axis.													
2.50	2.65	....Coarse red granite section.													

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
	9.60	....Fracture at 45° to core axis.		9.50	24.1	2.5	1.6	1.4						
				9.75										
	10.00	....Epidote fracture at 15° to core. Epidote extends into core for .5 cm.		10.00	22.0	2.4	1.9	1.5						
				10.25						10.0	15.0	.008		
10.40	10.45	....Coarse red granite vein at 80° to core axis.		10.50	21.6	2.5	1.8	1.7						
10.60	10.67	....Coarse red granite v n at 75° to core axis.		10.75										
				11.00	22.9	2.5	1.9	1.6						
				11.25										
				11.50	20.5	2.1	1.7	1.5						
				11.75										
				12.00	21.8	2.5	1.7	1.5						
				12.25										
	12.30	....Fracture at 45° to core axis.		12.50	27.0	3.5	2.0	1.7						
	12.50	....Banding at 80° to core axis.												
12.70	12.75	....Coarse red granite section. Refer to 2.5-2.65. Contact gradual over 2 cm.		12.75										
				13.00	22.6	2.9	1.8	1.7						
	13.20	....Fracture at 40° to core axis.		13.25										
				13.50	21.6	3.2	2.2	1.8						
				13.75										
14.00	14.10	....Biotite schist.		14.00	23.7	2.9	1.9	1.8						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
19.90	18.80	....Epidote fracture at 45° to core axis.		19.00	22.1	2.2	1.5	1.4						
				19.25										
	19.30	....Fracture at 50° to core axis.		19.50	21.5	2.3	1.8	1.5						
				19.75										
	20.00	....Coarse red granite. Refer to 2.5-2.65. Contacts at 80° to core axis.		20.00	26.1	2.3	1.8	1.5						
	20.20	....Fractures at 45° to core axis.		20.25						20.0	25.0	.006		
				20.50	20.9	2.5	1.8	1.7						
				20.75										
	20.80	....Fracture at 10° to core.		20.75										
	20.90	....Epidote rich section. Paragneiss with 30-35% epidote alteration.		21.00	19.9	2.3	1.9	1.5						
20.80				21.25										
	21.30	....Fracture at 45° to core axis.		21.50	26.9	2.4	1.5	1.4						
				21.75										
				22.00	21.5	2.5	1.9	1.6						
				22.25										
	22.40	....Fracture at 25° to core axis.		22.50	21.0	2.5	1.9	1.8						
				22.75										
	23.00	....Epidote fracture at 40° to core.		23.00	22.8	2.6	2.2	2.1						
	23.40	....Coarse red granite. Refer to 2.5-2.65. Contacts distinct at 95° to core axis. Much hematite staining.		23.25										
				23.50	21.0	2.6	2.2	1.9						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
28.60	28.65	....Coarse red granite veins at 70° to core.		28.50	22.1	2.1	1.5	1.3						
				28.75										
	29.00	....Banding at 50° to core axis.		29.00	21.9	2.2	1.6	1.5						
29.20	29.35	....Coarse red granite section. Refer to 2.5-2.65. Contacts distinct at 70° to core axis.		29.25										
				29.50	21.1	2.1	1.7	1.5						
29.70	29.75	....Epidote altered section. Lime green, perpendicular to banding. Cut by fractures at 15° to core axis.		29.75										
	30.00	....Fractures at 35° to core axis.		30.00	20.8	2.4	1.8	1.6						
				30.25						30.0	35.0	.009		
	30.40	....Epidote fracture at 15° to core axis.		30.50	21.5	3.0	2.1	1.9						
				30.75										
	31.00	....Coarse red granite vein 1-2 cm wide, folded in a tight 'S' fold over 5 cm.		31.00	21.7	2.1	1.8	1.6						
				31.25										
	31.50	....Banding at 75° to core axis.		31.50	20.8	1.9	1.6	1.4						
				31.75										
	31.80	....Chlorite fracture at 15° to core axis.												
	32.00	....Coarse red granite vein at 75° to core axis over 4 cm.		32.00	20.9	2.3	2.0	1.5						
				32.25										
32.50	32.70	....Few 1 cm wide red granite veins separated by 4 cm are tightly folded. They have 'S', 'W' and 'V' shapes. Gneissosity is similarly folded.		32.50	20.8	1.9	1.5	1.2						
				32.75										
32.80	32.90	....Coarse red granite section. Refer to 2.5-2.65. Contacts distinct over 70°.												
	32.90	....Fracture at 15° to core axis.		33.00	20.1	21.5	1.8	1.6						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
	37.80	....Fracture at 20° to core axis.		38.00	23.5	4.6	1.8	1.6						
				38.25										
				38.50	21.4	3.8	2.0	1.8						
				38.75										
38.90	39.00	....Biotite schist section. Refer to 14-14.1.		39.00	22.3	4.1	1.9	1.7						
39.00	39.05	....White granite Refer to log 78-A-1. Contacts distinct at 80° to core axis.		39.25										
39.40	39.55	....Biotite schist section. Refer to 14-14.1.		39.50	23.3	4.4	2.0	1.8						
				39.75										
				40.00	22.3	4.1	2.0	1.7						
				40.25										
				40.50	20.4	3.7	1.9	1.7						
	40.70	....Epidote fracture at 20° to core axis.		40.75										
	40.80	....Fracture at 15° to core axis.		41.00	22.9	4.2	1.8	1.5						
41.05	41.20	....Red granite vein 1.0 cm wide in a tight 'S' fold.		41.25										
41.20	42.00	....Coarse red granite section cuts core at 85°.		41.50	19.9	3.5	1.7	1.6						
		....Numerous small 'S' shaped folds occur in the paragneiss.		41.75										
				42.00	19.5	3.5	1.9	1.5						
	42.20	....Banding at 75° to core axis.		42.25										
42.20	42.40	....Coarse red granite section cuts the core at 75°.		42.50	22.6	4.3	2.0	1.7						

[illegible]

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS	
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈	
	47.40	....Fracture at 20° to core axis.		47.50	16.8	2.7	1.4	1.2					
				47.75									
				48.00	15.8	3.3	1.8	1.6					
				48.25									
	48.50	....Banding at 80° to core.		48.50	23.6	4.4	2.0	1.6					
				48.75									
				49.00	20.1	3.7	1.8	1.5					
				49.25									
				49.50	17.4	3.1	1.6	1.5					
				49.75									
50.00	52.40	....Coarse white granite. Refer to log 78-1-A. This granite varies in grain size ≤ 4 cm and it is a dark colour due in part to light pink K feldspars and dark smokey grey quartz. There are some areas of light green quartz.		50.00	29.4	1.8	1.8	1.5					
				50.25						50.0	55.0	.002	
				50.50	65.1	6.5	2.3	1.4					
				50.75									
				51.00	21.0	3.3	1.6	1.4					
				51.25									
				51.50	26.6	3.4	1.9	1.4					
				51.75									
				52.00	18.0	3.2	1.7	1.4					

FROM	TO	REMARKS	LOG	METER	RADIOMETRICS SP-44				SAMPLE			ASSAYS		
					TOTAL	K	U	Th	#	FROM	TO	U ₃ O ₈		
53.00	53.00 53.50Banding at 65 ⁰ to core axis. .....Biotite schist. Refer to 14.0-14.10.		52.25										
				52.50	14.8	1.7	1.4	1.4						
				52.75										
				53.00	16.0	3.1	1.6	1.4						
				53.25										
				53.50	19.6	2.9	1.5	1.4						
				53.75										
				54.00	18.2	3.6	2.0	1.8						
				54.25										
				54.50	18.4	3.2	3.2	1.3						
				54.75										
				55.00	1.9	3.2	1.6	1.4						
				55.25										
				55.50	19.6	3.1	1.8	1.6						
				55.75										
				55.80	18.9	3.0	1.6	1.5						
				56.00										
				55.80	61.50Contact is at 75 ⁰ to core axis and cross cuts banding of the gneiss. COARSE WHITE GRANITE Light pink, medium to coarse grained <4 cm. Felsic portion - consists of pink, subhedral, <4 cm, striated, hematite stained K feldspars; and clear to smokey grey to green, anhedral, <2 cm quartz. Mafic portion - consists of black, subhedral, <1 cm biotite and black anhedral <.3 cm magnetite.		56.25						
56.50	15.7	2.8	1.3					1.3						
56.75														

[illegible]