FINAL REPORT
ON
AUTHORITY TO PROSPECT NO. 2065
BYNOE HARBOUR, N.T.

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FINAL REPORT ON

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This P.A. was taken up because the area was considered to contain environments favourable to the accumulation of heavy minerals in beach sand type deposits. It was thought that islands and sand banks in Bynoe Harbour and the Middle Arm of Darwin Harbour might have presented barriers to the seaward migration of heavy minerals brought down by streams from the hinterland, so that accumulation of mineable deposits might have taken place.

Random sampling of the bottom of Bynoe Harbour, between Crocodile Island and the mouths of the Annie and Charlotte Rivers, showed that in its upper reaches the sediments consisted of very coarse gravels, especially near the mouth of the Annie River, where cobbles up to three inches in diameter were recovered. Decreasing amounts of gravel were collected as Crocodile Island was approached. Panning of the samples indicated that cassiterite, tantalite-columbite, and rutile might be present in the major portion of the area.

A more detailed programme of sampling was then carried out, forty-three samples being recovered. These were amalyzed for tantalum and tin by our Sydney laboratory. Results were disappointing, all samples returning less than 100 p.p.m. of tantalum and tin except one, which yielded 400 p.p.m. of tin (see Table 1).

Untested areas in Middle Arm, West Arm, Woods Inlet, Charlotte River, Annie River, and Bynoe Harbour were later tested, sixty samples being taken from locations shown on Plans No. 1900 and No. 1910. Panned concentrates were sent to Sydney for analysis. Twelve of these were selected at random, and assayed for tin, tantalum, titanium, zirconium, iron and tungsten. Results were uniformly low, the highest tin value being equivalent to 0.496 lb/short ton, and the highest tantalum value being equivalent to 0.372 lb/short ton. The remainder of the samples tested were well below economic grade. Results are shown in Table 2. It should be noted that these samples were all panned concentrates, and if converted to lb/c.yd would represent only traces of mineralization.

The P.A. was therefore relinquished.

October 12, 1970
DSF:AS:794

TABLE 1

BYNOE HARBOUR BOTTOM SAMPLES

Sample No.	p.p.m. Ta	Sn
B 1	100-	100-
2	100-	100-
3	100-	insufficient sample
4	100-	insufficient sample
5	100-	100-
6	100-	100-
7	100-	100-
8	100-	100-
9	100-	100-
10	100-	100-
11	100-	100-
12	100-	100-
13	100-	400
14	100-	100-
15	100-	100-
16	100-	100-
17	100-	100-
18	100-	100-
19	100-	100-
20	100-	100-
21	100-	100-
22	100-	100-
23	100-	100-
24	100-	100-
25	100-	100-
26	100-	100-

Table 1 ... cont'd.

Sample No.	p.p.m. Ta	Sn
B 27	100-	100-
28	100-	100-
29	100-	100-
30	100-	100-
31	100-	insufficient sample
32	100-	100-
33	100-	100-
34	100-	100-
35	100-	insufficient sample
36	100-	100-
37	100-	100-
38	100-	100-
39	100-	100-
40	100-	100-
41	100-	insufficient sample
42	100-	100-
43	100-	100-

TABLE 2

BYNOE HARBOUR AND MIDDLE ARM BOTTOM SAMPLES

Sample Number	Sn	WO_3	FeO	Fe	Ta_2O_5	ZrO_2	TiO_2
	%	%	%	%	%	%	%
Middle Arm							
30 + 31 (Composite)	0.01	ND*		1.6	ND	0.16	0.2
45	0.02	ND	5.7		0.01	0.15	0.36
48	0.70	ND		10.7	0.11	0.09	0.3
52	0.03	ND	8.0		0.01	0.19	0.47
55	0.05	ND	5.3		0.01	0.47	0.79
57 + 58 (Composite)	0.02	ND		3.6	ND	0.08	0.2
Bynoe Harbour							
2	0.17	ND		2.7	0.05	0.08	0.3
3	0.01	ND		0.8	ND	0.03	0.4
4	0.04	ND	9.4		0.03	0.07	0.81
11	0.02	ND	8.6		0.01	0.17	1.3
13	0.01	ND	6.3		0.01	0.09	0.48
14	0.03	ND	6.0		0.02	0.22	0.04

*ND = not detected

PROSPECTING AUTHORITY NO. 2065

ANALYSIS OF EXPENDITURE

	$
Surface prospecting	2748
Geology	3460
Geophysics	-
Geochemistry	64
Drilling	-
Property expenses	236
Sampling, assaying	152
Road building	-
Transportation	1310
Legal costs	32
Consulting fees	255
Evaluation	-
TOTAL	$8257

130° 45'
130° 50'
130° 55'
12° 30'
12° 35'
12° 40'
WEST ARM
MIDDLE ARM
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
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60

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P.A. 2065
MIDDLE ARM – N.T.
SAMPLE LOCATION MAP

DATE: SEPTEMBER 23, 1970	GEOLOGIST: J. SANDY
SCALE: 1:50,000	DRAWN BY: P. O'C
REVISIONS:	FILE N°: 1900 – N.T.

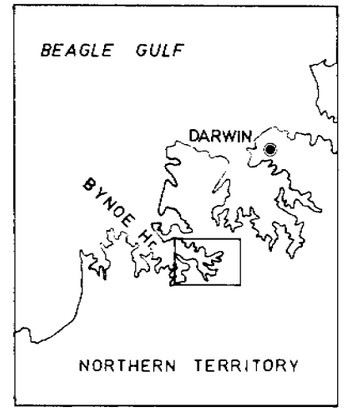
12°40'

130°40'

130°45'

12°40'

LOCATION MAP
(Scale : 1" : 30mls)



N

BYNOE HARBOUR

CROCODILE ISLAND

PITTARD SPIT

MILNE INLET

CHARLOTTE RIVER

ANNIE RIVER

25 24 22 23 20 17 18 21 19 16 14 11 10 9 8 7 6 5 4 3 2 1 15 12 13

12°45'

12°45'

130°40'

130°45'

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P.A. 2065

BYNOE HARBOUR - N.T.

SAMPLE LOCATION MAP

Date: AUGUST 1970	Geology:
Scale: 1 : 50,000	Drawn by: B.C.V.
Revisions:	File No.: 1910 – N.T.