OCEAN MINING A.G.

DRILLING PROGRAM 1966 – 67

RINGAROOMA BAY

MINES DEPT. ASSAY RESULTS

R. 818

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DEPARTMENT OF MINES—TASMANIA

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19th February 1982

[illegible]: Core Drilling in Ringarooma Bay

VT DJJ.

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Introduction

Between October 1966 and February 1967 Ocean Mining A.G. conducted a drilling campaign in Tasmanian waters using the vessel "Wando River" which was specially equipped to drill into the unconsolidated sediments on the ocean floor. The main area of activity was in Ringarooma Bay on the Bass Strait coast of north-eastern Tasmania.

The recovered drill core was split on the deck of the Wando River half being retained by OMAG, the other half being delivered to this laboratory for processing. The attached flowsheet shows how the samples were processed and the head values calculated.

Results were given to OMAG identified with their number and our Register Number. As we were not given any other identification our results could not be related to a hole or interval in a hole. OMAG would have used this data for reporting on this project to their partners in this venture.

During and at the end of the sample processing investigations were made on aspects of sampling and analysis. These findings were passed on to OMAG.

With renewed interest in Ringarooma Bay, Santos Ltd sought the results of the OMAG work. While the work we did in this laboratory was all on file here Santos was not successful in locating information that related results to holes etc. Some results found in the Electrolytic Zinc Company's files were incomplete, in some places quite erroneous and had not been brought up to date after the original results were entered in their (E.Z.) files.

Accordingly the objective was to put together all the information available so that the sample results could be applied to boreholes and hence be used to appraise the bed of Ringarooma Bay.

As the information was being extracted from our files it became apparent that experimental work on these samples was worth recording in a research project so that it was readily accessible hence the inclusion of such results.

Results

The assay results are given for 1040 samples from 138 bore holes in Ringarooma Bay. In the Remarks Column of these results reference is made to various appendices which contain detail concerning particular results.

The results in Appendix A give some light on how well the sample split was made on the Wando River and the sizing analyses show the tin to be concentrated in a narrow size range, namely about three quarters of the tin is in fractions between 250 and 75 µm.

From Appendices B & C it can be concluded that better sampling is obtained after grinding the non-magnetic material.

Artificial compacting of the sediments gave densities ranging 1.4 to 1.9 t/m^3 with a mean of 1.6 t/m^3 for in situ sandy material (Appx D)

An examination of the small amount of magnetic material in the samples showed it was titaniferrous but the chromium content would preclude its use (AppxE).

In Appendix F five special samples were treated in the routine way and then all the products were weighed and assayed to obtain a metallurgical balance. This work showed a bias to a higher calculated head mass by the routine method adopted and hence a lower calculated head grade by about 3%. The tin recovery in the non-magnetic products assayed was greater than 90%.

Comment

From the work done on preparation of samples for analysis the non-magnetic product should be ground before being sampled and analysed. However the impression after duplicate assays were done on about fifty samples using this modified sampling procedure is that although there were significant differences in individual results overall there would be little material difference.

The most significant factor affecting the results is from the moisture content of the samples. This appears to have been biased with the result that a head value calculated at 100 g/t would in fact be 103 g/t.

Without the origin of the five samples used in Appx. F it is not possible to comment with any degree of certainty about the Ringarooma Bay sediments but assuming these five came from an indicated favourable area (grade over 100 g/t Sn) then one could conclude that gravity concentration could recover more than 90% of tin in around 5% of the mass. Such a concentrate would assay around 0.3% Sn. The sizing analyses in Appx. A indicate a concentration of tin in readily recoverable size fractions. These findings contrast with the findings of R590 where the tin appeared to be evenly distributed in all size fractions and not easily concentrated.

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Conclusion

While the samples selected for special investigations appear to be more or less randomly chosen from samples being processed at the time of their choice the information derived from them suggests gravity concentration can recover a high percentage of the tin in a relatively low mass of concentrate.

However in view of the small number of samples given any special treatment and the rather different picture from R590 I believe further test work should be done using the samples still held here from this drilling.

HJ

(H. E. Wellington)
Chief Chemist & Metallurgist

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BG18: Sizing Tests - Appendix A.

Four samples that had previously been processed according to the flowsheet and that had shown high tin assays were selected for further treatments. OMAG split from the residual part of the original sample they were holding, samples for this work.

The original samples and results together with the second samples and the calculated heads after sizing analysis were:-

Original Samples		Second Samples	
Reg. No.	OMAG No.	Assay (g/t Sn)	Reg. No.	Calc. Assay (g/t Sn)
663937	MB 135	196	664505	300
663962	MB 160	88	664506	40
663963	MB 161	151	664507	180
663989	MB 187	96	664508	110

In making a comparison between the two tin results above it is necessary to keep in mind the following points, namely:-

1. The original result is a recoverable tin figure and does not include tin lost in tailings.
2. The calculated result is the result of a sizing analysis and the separate assay of a number of size fractions.
3. Under these conditions one would expect the sizing analysis head assay to be the greater.
4. In all the above notes the assumption is made that the original split of the core on the "Wando River" produced two identical samples and that the subsequent taking of a split from the OMAG sample was representative of what they were holding.

In view of the problems involved the agreement is considered reasonable.

The results of the sizing analyses and tin distributions are:-

SIZING ANALYSIS & TIN DISTRIBUTION

Reg. No		664505			664506			664507			664508		
CSAG No.		NE 135			NE 160			NE 161			NE 157		
Fraction	Mass (%)	Assay (g/t Sn)	Tin Dis. (%)	Mass (%)	Assay (g/t Sn)	Tin Dis. (%)	Mass (%)	Assay (g/t Sn)	Tin Dis (%)	Mass (%)	Assay (g/t Sn)	Tin Dis (%)
+1.7 mm	29.8	80	7	11.1	80	20	4.8	N	0	8.6	80	6
+700 µm	26.6	N	0	8.3	N	0	1.9	N	0	12.9	N	0
+355 µm	18.4	80	4	27.7	N	0	4.4	N	0	13.3	90	10
+250 µm	5.7	250	4	24.5	N	0	6.1	N	0	8.6	N	0
+150 µm	5.7	3100	51	21.2	170	80	27.3	170	26	17.0	250	39
+ 75 µm	4.2	2600	32	4.5	N	0	26.4	170	25	19.2	170	30
- 75 µm	9.6	80	2	2.7	N	0	29.1	300	49	20.4	80	15
	100	(300)	100	100	(40)	100	100	(180)	100	100	(110)	100

Each sample was wet screened on 75 µm then the oversize dried and screened on above sieves

N = Nil.

Comment

In all samples the higher assays are in the -250 µm fractions. The -250, +75 µm fractions in all samples contain most of the tin. The only sample containing a high proportion of the tin in the -75 µm fraction is 664507.

In 664505 which is much coarser material than the rest 83% of the tin occurs in only 10% of the mass in the -250 + 75 µm fraction.

R818: Check Sampling & Assaying - Appendix B.

Five samples were selected to cover ranges of values for Sn, Ti & Zr found during the routine work.

In each of the five samples the remaining unground non-magnetic concentrate was riffled into four fractions and each fraction assayed.

In the main table of results the five sets of results are given under the bore hole and CMAG sample number. The following gives the five samples thus treated and a summary of the results obtained. The results are calculated back to head assays.

Reg. No	CMAG No.	Assay (g/t)					
		Sn		Ti		Zr	
		H*	L*	H	L	H	L
670179	MB 631	160	126	17	13	42	29
670194	MB 646	134	76	82	64	228	164
670595	MB 998	44	38	22	N+	56	33
670633	MB 996	20	10	19	15	41	38
670661	MB 1024	20	18	63	42	71	55

* H = Highest result L = Lowest result

\+ N = Nil.

The assay sampling method employed above was to weigh out unground material and the known mass of internal standard then grind the mixture to produce the XRF pellet. Segregation could occur in this sampling.

RG18: Further Check Sampling & Assaying - Appendix C

Three samples were selected for this investigation. The unground non-magnetic concentrate was ground to stabilise the mixture against segregation. The sampling was done, an amount weighed out, the known mass of internal standard added and the mixture ground to produce the XRF pellet.

In the following table of results the original result obtained and those subsequently obtained from what was left of the non-magnetic material from each sample. The results are calculated back to head assays.

Mem. No.	CMAC No.	Assay (g/t Sn)				
		Original	Repeats			
670193	MB 645	44	28	28	26	28
670637	MB 1000	17	28	30	28	27
670671	MB 1034	107	84	85	87	85

This showed more consistent results than previously were obtained when sampling was done on unground material.

Accordingly twenty five samples showing tin values greater than 49 g/t and seventeen other samples from the section of results where segregation in assay sampling may have occurred were repeated after grinding what was left of the non-magnetic concentrate from each sample. The results of these repeat assays are shown in the table of results as "duplicate assays".

B818: Density of Sediment - Appendix D.

The density of Ringarooma Bay sediments was determined on seven samples.

Composite samples were made using the moisture samples from individual samples.

After weighing the dry samples were placed in a volume box under water and composited by the motion of the Tyler "Rotap" for 15 minutes. The volume occupied by the solids was then measured. The densities were originally reported in pounds per cubic foot. (lb/c.f.)

Composite Samples Used		Density	
Nos. Nos	CSIRO Nos.	(lb/c.f.)	(t/m^3)
663954-663971	NE 152-169	93	1.5
663980-663993)	NE 186-191)		
663997-664005)	NE 192-200)	105	1.7
664026-664041	NE 221-236	90	1.4
664070-664098	NE 265-293	109	1.8
670045-670059	NE 585-600	116	1.9
670117-670141	NE 506-530	90	1.4
670142-670152)	NE 531-541)		
670160-670178)	NE 612-630)	98	1.6

2010: Chromium Content of Magnetics - Appendix E.

A composite sample of magnetics separated from Samples 664324 to 664335 (GRAC HE 489 to 500) inclusive were further magnetically separated into four fractions by differing magnetic strengths. In all 64.6g was so treated.

The samples used for this test were chosen at random. The amount of magnetic material derived from the original samples was very small, generally less than 0.1% by mass.

Three magnetic products were assayed for Ti & Cr. The fourth product appeared to be mainly garnet and was not further treated.

The results obtained were:-

Product	Mass (%)	Assay (%) TiO_2	Assay (%) Cr.	Remarks
M/A 1	2.9	30.8	0.36	
M/A 2	26.0	33.2	0.12	
M/A 3	4.5	40.3	0.09	
M/A 4	55.1			Garnet
"	11.5			
"	100			

Pure ilmenite contains 52.7% TiO_2 hence pure ilmenite does not appear to be present. The chromium content would preclude use of this material in titanium dioxide production.

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BB18: Tin Distribution - Appendix F.

Five samples were submitted first for normal concentration but additionally all products were kept, dried, weighed and assayed and a tin balance calculated for each. The tin recovery and the head grades obtained by the routine examination and from the metallurgical balance could then be compared.

Reg. No.	CSIRO No.	Product	Mass (%)	Assay (g/t Sn)	Tin Dist. (%)	Remarks
670686	1	H	5.95	3000	93.2	Dry Mass
		M/A	0.05	ND*	-	6.378 kg
		C/H.T	33.4	12	2.1	Calc. Mass
		T.T	60.6	15	4.7	6.81 kg
		H	100	(192)	100	
Recovered head from H				179		
Routine result				167		
670687	2	H	3.30	4600	93.0	Dry Mass
		M/A	0.06	ND	-	9.112 kg
		C/H.T.	53.45	9	3.0	Calc. Mass
		T.T	43.19	15	4.0	9.23 kg
		H	100	(163)	100	
Recovered head from H				152		
Routine result				150		
670688	3	H	6.77	3300	100	Dry Mass
		M/A	0.08	ND	-	4.806 kg
		C/H.T.	50.02	Nil	-	Calc. Mass
		T.T	43.13	Nil	-	4.92 kg
		H	100	(223)	100	
Recovered head from H				223		
Routine result				218		
670689	4	H	6.97	800	93.7	Dry Mass
		M/A	0.04	ND	-	5.689 kg
		C/H.T.	62.48	6	6.3	Calc. Mass
		T.T	30.51	Nil	-	5.92 kg
		H	100	(59)	100	
Recovered head from H				56		
Original result				54		

Res. No.	NMAS No.	Product	Mass (%)	Assay (g/t Sn)	Sn Dist (%)	Remarks
670690	5	N	7.93	1300	89.3	Dry Mass
		N/A	0.12	ND	-	7.901 kg
		C/E.T.	64.11	18	10.7	Calc. Mass
		E.T	28.38	Nil	-	8.17 kg
		N	100	(108)	100	
Recovered head from N				96		
original result				93		

*ND.= not determined. The mass of magnetics (N/A) is very small and would have to assay more than 500 g/t Sn to affect the results. This is unlikely.

Comment

These results show a bias to a higher mass in the calculated dry head than was found when all the products were dried and weighed. The difference between the recovered head from the metallurgical balance and that derived from the routine method directly relates to the dry mass used although conceivably there could be some affect caused by slow settling slime being decanted from samples.

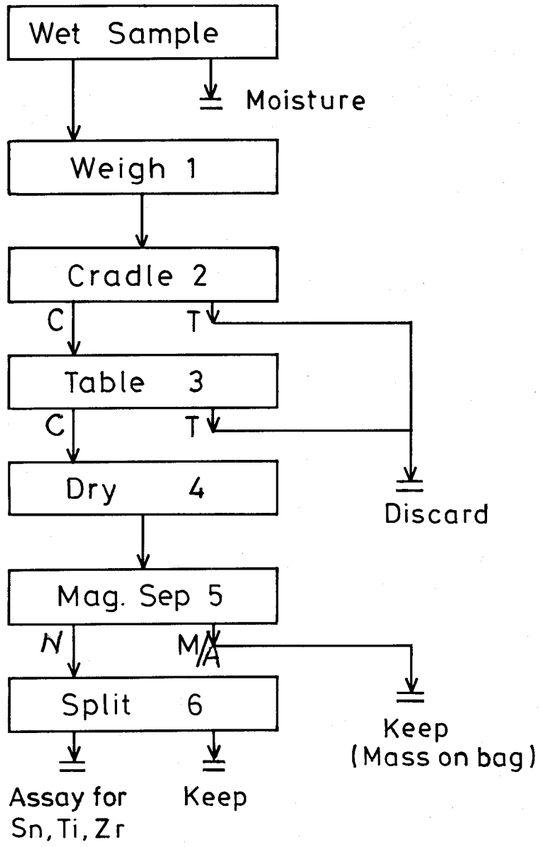
The tin recovered appears to be high in all samples, greater than 90%.

R818

OCEAN MINING A.G.

Drilling Program 1966-67, Ringarooma Bay

FLOWSHEET FOR SAMPLE TREATMENT



CALCULATION SHEET

Reg. No.	Wet Mass (kg)	Moisture		Dry Mass (kg)	Non-Mag.				Head Assay			
		Wet Mass(g)	Dry Mass(g)		Mass (g)	Assay %			N %	Metals (g/t)		
						Sn	Ti	Zr		Sn	Ti	Zr
Example 669999	12·65	210	180	(10·85)	212·3	1·2	10·6	15·3	(1·7)	(236)	(2080)	(3000)
( ) = calculated figures												
symbols	W_w	w_w	w_d	W_d	N	S	T	Z	n	s	t	z

CALCULATIONS

DRY MASS

$$W_d = \frac{W_w \cdot w_d}{w_w}$$

where W_d = dry mass in kg
W_w = wet mass in kg
w_d = dry mass of sample in gm
w_w = wet mass of sample in gm

NON-MAGNETIC FRACTION

$$n = \frac{N}{10.W_d}$$

where n = % non-mags in head
N = mass of non-mags in gm

METAL CONTENT OF HEAD SAMPLE

$$m = \frac{10.N.M}{W_d}$$

where m = metal content in g/t
M = % of M in non-mags

$$= 100.n.M$$

hence $s = 100.n.S$
$t = 100.n.T$
$z = 100.n.Z$

where s = tin content in g/t
S = % tin in non-mags
t = titanium content (rutile)* in g/t
T = % Ti in non-mags
z = zirconium content (zircon)* in g/t
Z = % Zr in non-mags

*this refers to titanium and zirconium occurring as rutile and zircon respectively and not to the amount of these minerals present.

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OCEAN MINING A.G. - ASSAY RESULTS

Drilling in Ringarooma Bay, 1966 - 1967

In the following table the following abbreviations are used:-

ft = feet of water or sampling interval

N (%) = percentage of non-magnetics in original sample

H Assay = head assay of original sample

g/t = grams/tonne (or parts per million mass/mass basis)

T = trace in assay columns

N = nil in assay columns

NOTES

In compiling this table the following sources have been used:-

1.1. Files showing results held in the Mines Dept. Laboratory, Launceston.

1.2. Records held by Geological Survey in Hobart.

1.3. Information supplied by Santos Ltd of Adelaide which included information from the Electrolytic Zinc Company's files, and

1.4. Australian Anglo American files in Melbourne.

2. It would appear that OMAG reporting from Hole 106 onwards failed to record the sample intervals as none of the above sources have this information.

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
1	54	0 - 3 (3')	NE 1	663739	0.03	T	17	10	
		3 - 5.5 (2.5)	2	40	0.06	T	44	22	
		5.5 - 7 (1.5)	3	1	0.09	T	9	6	
		7 - 8.5 (1.5)	4	2	0.02	T	3	2	
2	84	0 - 3 (3')	5	3	0.05	67	7	9	
		3 - 6 (3)	6	4	0.03	21	N	4	
		6 - 8.5 (2.5)	7	5	0.02	3	4	4	
		8.5 - 10.5 (2.0)	8	6	0.02	1	5	8	
		10.5 - 12.5 (2.0)	9	7	0.10	1	8	10	
		12.5 - 14.5 (2.0)	10	8	0.08	T	9	11	
		14.5 - 16.5 (2.0)	11	9	0.06	T	4	4	
		16.5 - 18.5 (2.0)	12	50	0.07	T	5	7	
		18.5 - 20.5 (2.0)	13	1	0.12	N	14	8	
		20.5 - 22.5 (2.0)	14	2	0.12	N	29	8	
		22.5 - 24.5 (2.0)	15	3	0.12	N	14	8	
		24.5 - 26.5 (2.0)	16	4	0.41	2	10	9	
		26.5 - 28.5 (2.0)	17	5	0.06	N	18	14	
		28.5 - 30.5 (2.0)	18	6	0.10	1	79	41	
3	65	0 - 3	19	7	0.09	3	72	37	
		3 - 6	20	8	0.16	6	32	26	
		6 - 9	21	9	0.06	T	6	7	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
4	58	0 - 3	NE 22	663760	0.07	T	71	54	
		3 - 4.5	23	1	0.14	T	28	43	
		4.5 - 6.5	24	2	0.06	T	44	57	
		6.5 - 9.0	25	3	0.11	T	33	68	
		9.0 - 11.0	26	4	0.11	N	11	44	
		11.0 - 14.0	27	5	0.10	N	7	28	
		14.0 - 17.0	28	6	0.30	N	12	44	
		17.0 - 19.5	29	7	1.02	N	12	15	
		19.5 - 21.5	30	8	0.54	N	N	27	
		21.5 - 23.5	31	9	0.08	T	29	27	
5	83	0 - 2.5	32	70	0.14	T	26	29	
		2.5 - 6.0	33	1	0.13	T	21	48	
		6.0 - 8.5	34	2	0.44	N	8	127	
		8.5 - 10	35	3	0.22	N	5	11	
		10 - 11.5	36	4	0.61	N	15	32	
6	74	0 - 2	37	5	0.12	T	38	48	
		2 - 3.5	38	6	0.10	T	52	50	
		3.5 - 6	39	7	0.28	N	72	68	
		6 - 9.5	40	8	0.51	8	25	74	
		9.5 - 12.0	41	9	0.26	3	6	6	
		12 - 14	42	80	0.28	1	3	4	
		14 - 15.5	43	1	0.83	T	10	N	
		15.5 - 18.5	44	2	0.61	N	11	N	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
7	74	0 - 3	NE 45	663849	0.11	T	48	61	
		3 - 5.5	46	50	0.09	T	8	8	
		5.5 - 9.0	47	1	0.12	8	82	166	
		9.0 - 11.0	48	2	0.08	4	48	52	
		11.0 - 15.0	49	3	0.16	T	87	99	
		15.0 - 18.5	50	4	0.18	N	104	89	
		18.5 - 20.5	51	5	0.12	N	7	4	
		20.5 - 22.5	52	6	0.18	T	13	12	
		22.5 - 25.0	53	7	0.08	T	16	17	
		25.0 - 28.5	54	8	0.09	1	19	24	
		28.5 - 31.0	55	9	0.27	14	29	54	
		31.0 - 34.0	56	60	0.55	6	17	29	
		34.0 - 31.5 +	57	1	0.59	9	7	N	
8	62	0 - 2	58	2	0.07	6	28	33	
		2 - 5	59	3	0.06	9	33	41	
		5 - 8	60	4	0.08	5	30	39	
		8 - 10.5	61	5	0.08	9	31	60	
		10.5 - 12.5	62	6	0.19	29	29	39	
		12.5 - 15.0	63	7	0.72	19	31	32	
		15.0 - 18.0	64	8	0.49	2	12	N	
		18 - 20.5	65	9	0.12	5	13	12	
		20.5 - 22.5	66	70	0.08	4	11	13	
		22.5 - 25	67	1	0.13	38	11	20	
		25 - 28	68	2	0.11	7	6	8	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti.	Zr	Remarks
8	62	28.0 - 30.5	NE 69	663873	0.19	5	9	10	
		30.5 - 32.0	70	4	0.31	3	7	11	
		32.0 - 35	71	5	0.36	T	9	13	
		35 - 37	72 (73)	6	0.32	T	6	7	No sample recd.
9	71	0 - 3.5	74	7	0.36	T	68	94	
		3.5 - 6.5	75	8	0.33	T	22	30	
		6.5 - 9	76	9	0.25	T	20	13	
		9 - 11	77	80	0.16	T	31	27	
		11 - 13	78	1	0.47	T	14	21	
		13 - 15.5	79	2	0.15	7	12	18	
		15.5 - 18.5	80	3	0.10	4	24	4	
		18.5 - 20.5	81	4	0.12	22	28	42	
		20.5 - 23	82	5	0.06	8	4	4	
		23 - 25	83	6	0.06	T	1	N	
10	75	0 - 2.5	84	7	1.28	10	31	56	
		2.5 - 4	85	8	0.57	9	36	82	
		4 - 6.5	86	9	0.22	4	20	40	
		6.5 - 9	87	90	0.09	8	12	23	
		9 - 12	88	1	0.26	1	13	35	
		12 - 13.5	89	2	0.44	2	19	39	
		13.5 - 15	90	3	0.10	T	54	56	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
11	73	2 - 5	NE 91	663894	0.13	T	41	39	
		5 - 8	92	5	0.07	T	14	13	
		8 - 10	93	6	0.10	2	9	5	
		10 - 13	94	7	0.10	12	12	17	
		13 - 15.5	95	8	0.04	10	5	9	
		15.5 - 17.5	96	9	0.03	2	4	7	
		17.5 - 20.5	97	900	0.08	T	11	19	
		20.5 - 23	98	1	0.05	T	11	18	
		23.0 - 25.5	99	2	0.48	N	21	11	
		25.5 - 28.5	100	3	0.27	T	15	12	
12	87	0 - 2.5	101	4	0.08	10	8	21	
		2.5 - 5	102	5	0.10	1	17	21	
		5 - 7	103	6	0.17	T	18	14	
		7 - 9	104	7	0.28	T	20	21	
		9 - 12	105	8	0.45	T	33	34	
		12 - 13.5	106	9	0.28	1	45	59	
13	88	0 - 2.5	107	10	0.47	6	35	50	
		2.5 - 5	108	1	0.32	5	32	44	
14	82	0 - 2	109	2	0.91	4	N	N	
		2 - 4	110	3	0.31	1	6	N	
		4 - 5.5	111	4	0.49	T	9	N	
		5.5 - 7	112	5	0.43	N	8	9	
			113						No Sample

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
15	86	0 - 3.5	NE 114	663916	0.09	T	11	6	
		3.5 - 5.5	115	7	0.20	2	19	17	
		5.5 - 8.5	116	8	0.15	3	8	10	
		8.5 - 11	117	9	0.12	T	11	17	
		11 - 13.5	118	20	0.10	1	9	18	
		13.5 - 16	119	1	0.07	2	4	6	
		16 - 18	120	2	0.31	6	47	58	
		18 - 20.5	121	3	0.32	9	22	44	
		20.5 - 23.5	122	4	0.22	7	68	99	
		23.5 - 25	123	5	0.43	17	61	150	
16	98	0 - 2	124	6	0.94	2	23	36	
		2 - 3.5	125	7	0.07	T	19	36	
		3.5 - 5.5	126	8	0.01	T	32	60	
		5.5 - 8	127	9	0.20	1	15	21	
17	82		128	30					No Concentrate
			129	1					
			130	2					
			131	3					
			132	4					
18	109	0 - 2.5	133	5	0.12	4	23	23	
		2.5 - 5	134	6	0.15	49	10	21	
		5 - 7.5	135	663937	0.20	196	16	44	
				664505		300			See Appx A

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
18	109	7.5 - 9	NE 136	663938	0.11	6	3	3	
		9 - 10.5	137	9	0.19	2	N	N	
		10.5 - 16.5	138	40	0.03	3	5	6	
		16.5 - 19.5	139	1	0.03	1	6	12	
		19.5 - 21	140	2	0.06	T	3	3	
19	106	0 - 2.5	141	3	0.82	43	15	48	
		2.5 - 5	142	4	0.17	9	4	10	
		5 - 7.5	143	5	0.12	T	7	5	
		7.5 - 10	144	6	0.27	T	6	8	
		10 - 12.5	145	7	0.06	T	3	3	
		12.5 - 15	146	8	0.16	N	N	N	
		15 - 17.0	147	9	0.08	T	1	N	
		17.0 - 18	148	50	0.24	2	10	9	
20	95	0 - 3	149	1	0.09	2	37	51	
		3 - 5.5	150	2	0.25	T	7	7	
		5.5 - 8	151	3	0.07	2	2	3	
		8 - 10.5	152	4	0.26	3	13	20	
		10.5 - 13	153	5	0.13	2	3	6	
		13 - 15	154	6	0.09	54	2	4	
21	101	0 - 3.5	155	7	0.18	2	58	85	
		3.5 - 5.5	156	8	0.11	T	23	27	
		5.5 - 8	157	9	0.08	T	18	25	
		8 - 10.5	158	60	0.15	3	26	39	
		10.5 - 13	159	1	0.18	50	18	47	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
21	101	13 - 16	NE 160	663962	0.21	88	15	36	
				664506		40			See Appx A
		16 - 19	161	663963	0.20	151	20	56	
				664507		180			See Appx A
		19 - 21	162	663964	0.17	4	10	34	
		21 - 23	163	5	0.09	2	7	32	
		23 - 26	164	6	0.18	2	7	13	
		26 - 28	165	7	0.13	N	10	T	
		28 - 30.5	166	8	0.15	N	17	39	
		30.5 - 32	167	9	0.05	2	13	22	
22	87	0 - 2	168	70	0.24	T	62	96	
		2 - 5	169	1	0.06	T	18	26	
			170	2					Clays Not Treated
			171	3					
			172	4					
			173	5					
23	65	0 - 3	174	6	0.13	N	43	60	
		3 - 7	175	7	0.09	T	26	32	
		7 - 10	176	8	0.09	T	37	50	
		10 - 12	177	9	0.10	T	40	27	
		12 - 14	178	80	0.14	N	36	53	
			179	1	0.28	N	34	59	
			180	2	0.19	N	23	36	

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
23			NE 181	663983	0.07	1	34	51	
			182	4	0.09	T	29	53	
			183	5	0.18	T	61	83	
			184	6	0.08	T	5	6	
			185	7	0.06	2	10	8	
			186	8	0.13	52	14	4	
			187	9	0.16	96	7	34	
Bedrock recorded at 22 ft. but there seems too many samples for this to be true.				664508		110			See Appx. A.
			188	663990	0.27	7	43	82	
			189	1	0.42	6	38	103	
24	58	0 - 15	190	663992	0.32	3	25	24	
25	60	0 - 2	191	663993	0.31	1	21	16	
26	89	0 - 2	192	7	0.30	N	34	32	
		2 - 4.5	193	8	0.13	N	17	18	
		4.5 - 7	194	9	0.15	N	23	15	
		7 - 10	195	664000	0.11	T	15	17	
		10 - 12	196	1	0.16	1	62	91	
		12 - 14	197	2	0.28	N	39	19	
		14 - 16	198	3	1.12	2	225	414	
		16 - 19	199	4	0.04	T	15	22	
		19 - 21	200	5	0.27	2	5	4	
		21 - 23	201	6	0.29	T	7	2	
		23 - 25	202	7	0.06	1	3	1	
		25 - 27	203	8	0.08	5	3	4	
		27 - 31.5	204	9	0.25	7	5	6	
		31.5 - 33	205	10	0.10	5	6	4	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
27	90	0 - 3	206	664011	0.25	N	34	N	
		3 - 5.5	207	2	0.23	T	32	31	
		5.5 - 8.5	208	3	0.33	T	18	30	
		8.5 - 10.5	209	4	0.26	T	6	11	
		10.5 - 12.5	210	5	0.15	16	30	48	
		12.5 - 14.5	211	6	0.19	5	8	16	
		14.5 - 17.5	212	7	0.09	4	9	17	
		17.5 - 21	213	8	0.08	6	11	16	
		21 - 22.5	214	9	0.09	5	6	9	
28	105	0 - 2.5	215	664020	0.21	67	27	37	
		2.5 - 5	216	1	0.23	41	11	24	
		5 - 7.5	217	2	0.15	T	6	8	
		7.5 - 10	218	3	0.31	T	7	N	
		10 - 12.5	219	4	0.03	T	2	4	
		12.5 - 15	220	5	0.14	N	9	12	
		15 - 17.5	221	6	0.12	N	4	N	
		17.5 - 19	222	7	0.17	N	7	3	
29	89	0 - 2	223	664025	0.11	5	7	6	
		2 - 4	224	9	0.12	T	3	2	
		4 - 8	225	30	0.11	T	3	N	
		8 - 10	226	31	0.15	T	5	3	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N	H. Assay (g/t) Sn	Ti	Zr	Remarks
30	95	0 - 3	227	664032	0.25	2	28	52	
		3 - 6	228	3	0.41	N	15	31	
		6 - 7	229	4	0.22	T	20	22	
		7 - 9	230	5	0.06	T	26	24	
		9 - 11	231	6	0.02	T	5	6	
		11 - 13	232	7	0.10	T	12	13	
		13 - 16.5	233	8	0.14	T	10	11	
		16.5 - 18.5	234	9	0.09	1	9	14	
		18.5 - 20.5	235	40	0.08	N	3	4	
		20.5 - 23.5	236	1	0.04	2	5	8	
		23.5 - 25	237	2	0.25	5	8	19	
31	102	0 - 2½	238	664043	0.79	T	9	23	
		2½ - 5	239	4	0.21	T	6	14	
		5 - 7	240	5	0.28	N	3	2	
		7 - 9	241	6	0.16	N	7	19	
32	109	0 - 2	242	664047	0.33	2	33	49	
		2 - 5	243	8	0.15	T	63	53	
		5 - 7	244	9	0.15	T	45	49	
		7 - 9	245	50	0.17	43	83	114	
33	106	0 - 3.5	246	664051	0.12	6	61	77	
		3.5 - 6	247	2	0.11	T	24	18	
		6 - 7.5	248	3	0.07	T	14	11	
		7.5 - 10.5	249	4	0.14	T	29	22	
		10.5 - 13	250	5	0.12	T	22	17	

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn.	Ti.	Zr.	Remarks
33 cont.		13 - 15.5	251	664056	0.07	T	14	9	
		15.5 - 18	252	7	0.23	T	38	40	
		18 - 21	253	8	0.32	T	107	102	
		21 - 23	254	9	0.08	T	N	1	
34	80	0 - 3	255	664060	0.14	5	14	22	
		3 - 6.5	256	1	0.11	7	32	42	
		6.5 - 8	257	2	0.26	11	52	80	
		8 - 10	258	3	0.09	5	9	16	
		10 - 12.5	259	4	0.10	1	5	10	
		12.5 - 16	260	5	0.06	2	3	84	
		16 - 20	261	6	0.40	8	122	27	
		20 - 23	262	7	0.37	4	113	25	
		23 - 26	263	8	0.29	10	24	42	
		26 - 29	264	9	0.13	2	40	8	
		29 - 31	265	70	0.40	2	5	9	
		31 - 34	266	1	0.08	T	3	5	
		34 - 36.5	267	2	0.23	2	4	10	
		36.5 - 38.5	268	3	0.71	N	N	N	
		38.5 - 41	269	4	0.93	N	N	N	
		41 - 43	270	5	0.12	2	20	36	
		43 - 45	271	6	0.42	5	13	34	
35	109	0 - 3.5	272	664077	0.11	12	27	32	
		3.5 - 6	273	8	0.23	16	6	10	
		6 - 9	274	9	0.06	3	4	7	
		9 - 11.5	275	80	0.12	2	4	5	
		11.5 - 13.5	276	1	0.13	3	5	8	
		13.5 - 15	277	2	0.08	6	3	9	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
36	112	0 - 3	278	664083	0.11	121	13	40	
		3 - 6	279	4	0.11	64	14	33	
		6 - 9	280	5	0.21	116	19	56	
		9 - 12	281	6	0.09	2	11	26	
		12 - 16	282	7	0.03	T	3	7	
		16 - 19	283	8	0.01	T	2	1	
		19 - 20.5	284	9	0.27	10	8	12	
37	103	0 - 2	285	664090	0.16	1	40	53	
		2 - 6	286	1	0.10	2	65	175	
		6 - 9	287	2	0.09	1	37	53	
		9 - 12	288	3	0.11	1	59	60	
		12 - 15.5	289	4	0.12	1	65	74	
		15.5 - 18	290	5	0.10	22	76	93	
		18 - 21	291	6	0.11	50	33	67	
		21 - 24	292	7	0.10	19	40	63	
		24 - 25.5	293	8	0.15	5	15	22	
		25.5 - 28	294	9	0.40	12	17	30	
		28 - 30	295	100	0.09	8	6	10	
		30 - 33	296	1	0.05	1	5	14	
Core recovered to 37ft. Drilled to 41ft.		33 - 35.5	297	2	0.22	6	7	8	
			298	3					No conc.
38	113	0 - 4	299	664104	0.10	21	34	52	
		4 - 5	300	5	0.06	4	10	12	
		5 - 8	301	6	0.09	9	40	56	
		8 - 11.5	302	7	0.19	14	46	74	

Hole No.	Water (ft.)	Interval (ft.)	MAG No.	Register No.	N (%)	H. Assay Sn.	H. Assay Ti.	(g/t) Zr.	Remarks
38	113	11.5 - 13.5	303	664108	0.17	51	23	40	
		13.5 - 15	304	9	0.25	45	22	39	
		15 - 18	305	10	2.38	45	300	19	
		18 - 21.5	306	1	0.85	14	10	6	
		21.5 - 23	307	2	0.63	1	8	9	
		23 - 25	308	3	0.16	1	13	18	
39	75	0 - 3	309	664114	0.12	1	11	10	
		3 - 5	310	5	0.13	T	15	17	
		5 - 6	311	6	0.06	1	16	22	
		6 - 10	312	7	0.05	T	13	16	
		10 - 11½	313	8	0.07	T	44	42	
		11½ - 13							
		13 - 18	314	9	0.20	21	44	69	
40	93	0 - 4	315	664120	0.11	17	28	62	
41	102	0 - 3	316	664121	0.16	1	24	33	
		3 - 6	317	2	0.02	1	9	9	
		6 - 9	318	3	0.04	3	9	7	
		9 - 10	319	4	0.31	1	N	N	
		10 - 12	320	5	0.01	T	T	1	
		12 - 15	321	6	0.01	T	2	T	
		15 - 18.5	322	7	0.07	T	N	26	
		18.5 - 22	323	8	0.13	2	17	33	

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	N (%)	H.Assay (g/t) Sn	Ti.	Zr	Remarks
42	95	0 - 3.5	324	664129	0.06	42	13	24	
		3.5.- 7	325	30	0.09	110	3	13	
		7 - 9.5	326	1	0.11	40	10	19	
43	82	0 - 3	327	664132	0.04	4	2	2	
44	72	0 - 2.5	328	664133	0.06	23	4	11	
45	94	0 - 3	329	664134	0.09	51	5	7	
		3 - 5.5	330	664165	0.05	24	2	4	
		5.5 - 7.5	331	6	0.05	42	7	19	
		7.5 - 9	332	7	0.11	30	3	7	
46	104	0 - 1.5	333	664168	0.25	13	11	17	
		1.5 - 3	334	9	0.05	2	2	3	
		3 - 5	335	70	0.13	T	N	2	
		5 - 7	336	1	0.07	2	2	3	
47	110	0 - 1.5	337	664172	0.19	47	17	40	
		1.5 -	338	3					Clays not Treated
		- 5	339	4					
		5 - 10	340	5	0.13	8	6	8	
48	113	0 - 3.5	341	664176	0.21	116	17	38	
		3.5 - 6	342	7	0.08	19	6	14	
		6 - 8	343	8	0.48	1	9	13	
		8 - 10.5	344	9	0.17	T	4	13	
		10.5 - 12.5	345	80	0.22	1	9	10	

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
49	53	0 - 3	346	664181	0.08	1	38	27	
50	91	0 - 3	347	664182	0.07	8	10	18	
		3 - 6	348	3	0.18	1	5	1	
		6 - 9	349	4	0.11	T	2	N	
51	75	0 - 4	350	664185	0.14	38	8	45	
		4 - 7	351	6	0.06	11	10	36	
		7 - 9	352	7	0.03	1	3	7	
		9 - 13	353	8	0.07	9	8	22	
		13 - 15	354	9	0.15	23	5	16	
52	73	0 - 2	355	664190	0.13	5	8	18	
53	60	0 - 4	356	664191	0.14	2	6	14	
54	57	0 - 2	357	2	0.18	4	10	22	
55	64	0 - 4	358	3	0.17	2	32	66	
56	92	0 - 2	359	664194	0.25	62	18	45	
		2 - 6	360	5	0.05	28	4	12	
		6 - 9	361	6	0.37	49	N	N	
		9 - 12	362	7	0.46	13	N	N	
		12 - 14	363	8	0.19	25	6	23	
		14 - 16	364	9	0.24	30	N	N	
		16 - 18	365	200	0.25	2	N	N	
		18 - 22	366	1	0.08	3	3	N	
		22 - 25	367	2	0.09	8	6	19	
		25 - 28	368	3	0.10	4	26	11	

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	M (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
56	92	28 - 32	369	664204	0.09	T	18	30	
		32 - 33	370	5	0.06	2	19	30	
57	112	0 - 3	371	664206	0.12	36	13	38	
		3 - 6	372	7	0.03	24	3	12	
		6 - 9	373	8	0.02	2	2	3	
		9 - 13	374	9	0.09	14	5	14	
			375	10					Clay not Treated
			376	1					Clay not Treated
58	120	0 - 2.5	377	664212	0.07	2	25	36	
		2.5 - 4.5	378	3	0.20	5	18	48	
		4.5 - 6.5	379	4	0.18	T	11	27	
		6.5 - 9	380	5	0.08	T	3	7	
		9 - 12	381	6	0.08	T	2	5	
		12 - 15	382	7	0.02	1	2	5	
59	111	0 - 2.5	383	664218	0.06	2	13	57	
		2.5 - 4	384	9	0.08	4	5	11	
		4 - 6	385	20	0.12	133	10	36	
		6 - 9	386	1	0.11	17	33	60	
		9 - 10.5	387	2	0.12	T	18	22	
		10.5 - 13	388	3	0.02	1	4	9	
		13 - 16	389	4	0.02	T	5	9	
		16 - 19	390	5	0.30	T	15	18	
		19 - 21.5	391	6	0.07	T	10	18	
		21.5 - 24	392	7	0.25	T	10	15	
		24 - 26.5	393	8	0.07	T	6	11	
		26.5 - 30.5	394	9	0.20	1	7	15	

Hole No.	Water (ft)	Interval (ft)	MAG No.	Register No.	Ni (%)	H. Assay (g/t) Sn.	Ti	Zr	Remarks
60	103	0 - 2.5	395	664230	0.04	3	10	32	
		2.5 - 5	396	1	0.07	3	22	32	
		5 - 6.5	397	2	0.13	2	37	28	
		6.5 - 8.5	398	3	0.08	5	7	12	
		8.5 - 11	399	4	0.08	2	18	22	
		11 - 13.5	400	5	0.31	N	7	7	
		13.5 - 16	401	6	0.33	N	8	10	
		16 - 19	402	7	0.21	1	9	19	
		19 - 22	403	8	0.10	2	7	16	
		22 - 25	404	9	0.05	T	4	13	
		25 - 27	405	40	0.05	T	2	5	
61	100	0 - 2.5	406	664241	0.16	T	43	63	
		2.5 - 5	407	2	0.06	T	33	40	
		5 - 7.5	408	3	0.10	4	29	51	
		7.5 - 9	409	4	0.05	1	30	27	
		9 - 12	410	5	0.03	T	22	37	
		12 - 15	411	6	0.07	T	6	7	
		15 - 17.5	412	7	0.01	T	1	2	
		17.5 - 21	413	8	0.08	2	13	13	
62	82	0 - 3	414	664249	0.06	42	13	41	
		3 - 7	415	50	0.08	58	52	70	
		7 - 10	416	1	0.09	10	11	29	
		10 - 13	417	2	0.29	8	11	35	
		13 - 15	418	3	0.12	T	3	4	
		15 - 17	419	4	0.34	2	6	7	
		17 - 19	420	5	0.02	6	4	7	
		19 - 22	421	6	0.18	58	8	28	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn.	Ti.	Zr	Remarks
63	122	0 - 3.5	422	664257	0.15	8	24	31	
		3.5 - 6.5	423	8	0.10	1	7	6	
		6.5 - 8.5	424	9	0.13	5	N	4	
		8.5 - 11	425	60	-	T			
		11 - 14	426	1	-	10			
		14 - 15.5	427	2	0.15	237	5	15	
64	116	0 - 5	428	664263	0.32	20	30	47	
		5 - 9	429	4	0.10	17	7	15	
		9 - 11	430	5	0.06	4	3	7	
		11 - 14	431	6	0.09	6	5	13	
		14 - 17	432	7	0.40	13	9	17	
		17 - 19	433	8	0.23	14	7	14	
		19 - 21	434	9	0.14	3	13	14	
		21 - 24	435	70	0.03	T	7	6	
		24 - 27	436	1	0.04	T	10	15	
		27 - 30	437	2	0.15	12	27	59	
		30 - 32	438	3	0.25	9	22	48	
65	105	0 - 5	439	664274	0.24	16	28	60	
		5 - 7	440	5	0.21	1	16	29	
		7 - 10	441	6	0.19	T	33	51	
		10 - 12.5	442	7	0.18	T	31	47	
		12.5 - 17	443	8	0.14	T	26	19	
		17 - 20	444	9					Clay not treated
		20 - 24	445	80	0.14	18	34	19	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn.	Ti	Zr	Remarks
65	105	24 - 26	446	664281	0.23	57	48	138	
		26 - 29	447	2	0.18	75	30	106	
		29 - 32	448	3	0.18	13	7	20	
		32 - 35	449	4	0.08	4	5	11	
		35 - 37	450	5	0.02	3	2	4	
		37 - 42	451	6	0.07	4	9	14	
66	87	0 - 3	452	664287	0.22	N	32	101	
		3 - 5	453	8	0.49	N	24	55	
		5 - 7	454	9	0.36	3	51	84	
		7 - 10	455	90	0.30	2	63	101	
		10 - 13	456	1	0.55	3	62	85	
		13 - 17	457	2	0.64	N	80	75	
		17 - 20	458	3	1.33	N	82	122	
		20 - 23	459	4	0.52	N	9	23	
		23 - 26	460	5	0.11	T	21	35	
		26 - 29	461	6	0.11	T	31	39	
		29 - 33	462	7	0.13	T	50	64	
		33 - 36	463	8	0.28	9	21	45	
			464	9					Clay not treated
			465	300					
			466	1					

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn.	Ti	Zr	Remarks
67	94	0 - 2	467	664302	0.11	T	34	45	
		2 - 6	468	3	0.11	5	37	89	
		6 - 9	469	4	0.09	3	60	75	
		9 - 12	470	5	0.10	10	43	60	
		12 - 16	471	6	0.07	16	9	29	
		16 - 19	472	7	0.05	2	5	20	
		19 - 24	473	8	0.04	1	5	14	
		24 - 27	474	9	0.06	2	12	20	
		27 - 30	475	10	0.06	4	10	16	
		30 - 33	476	11	0.06	6	13	20	
68	71	0 - 6	477	664312	0.23	N	17	30	
		6 - 10	478	3	0.16	N	24	36	
		10 - 14	479	4	0.07	N	11	15	
		14 - 16	480	5	0.30	1	39	63	
		16 - 20	481	6	0.05	10	11	19	
		20 - 23	482	7	0.10	12	8	18	
		23 - 27	483	8	0.13	2	N	8	
		27 - 29	484	9	0.11	5	23	42	
		29 - 32	485	20	0.09	14	19	30.	
		32 - 34	486	1	0.11	7	19	18	
		34 - 36	487	2	0.06	1	11	25	
		36 - 38	488	3	0.13	1	7	22	

Hole No.	Water (ft)	Interval (ft)	CMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
69	67	0 - 2	489	664324	0.10	4	32	81	
		2 - 4	490	5	0.14	2	6	24	
		4 - 7	491	6	0.10	T	N	7	
		7 - 9	492	7	0.08	T	4	9	
		9 - 12	493	8	0.04	T	T	6	
70	60	0 - 3	494	664329	0.14	1	32	6	
		3 - 6	495	30	0.08	4	12	28	
		6 - 9	496	1	0.11	1	9	34	
		9 - 12	497	2	0.15	T	14	55	
			498	3	0.10	T	27	69	
			499	4	0.16	T	28	59	
			500	5	0.13	1	34	101	
			501	6	0.13	1	18	26	
			502	7	0.08	T	7	17	
			503	8					
			504	9					Clay: not treated
			505	40					
71	115	0 - 4	506	670117	0.43	65	19	490	
						65	9	22	Duplicate assay
		4 - 7	507	8	0.62	2	38	33	
		7 - 11	508	9	0.79	2	19	17	
						8	8	28	dulpicate assay
		11 - 14	509	20	1.13	N	N	N	
		14 - 18	510	1	1.02	2	24	15	
		18 - 22	511	2	0.70	N	13	11	

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn.	Ti.	Zr.	Remarks
72	118	0 - 4	512	670123	0.54	N	23	16	
		4 - 7	513	4	0.48	N	41	26	
		7 - 10	514	5	0.54	N	39	29	
		10 - 13	515	6	0.42	N	31	18	
			516	7					Clay not treated
			517	8					
		20 - 23	518	9	0.83	6	25	18	
		23 - 27	519	30	0.60	23	14	18	
						60	14	46	duplicate assay
		27 - 30	520	1	0.70	50	30	37	
		30 - 31	521	2	1.24	5	N	N	
73	120	0 - 2	522	670133	0.46	N	36	28	
		2 - 5	523	4	0.44	N	41	37	
		5 - 8	524	5	0.52	N	29	23	
		8 - 12	525	6	0.46	N	34	4	
		12 - 15	526	7	0.99	8	N	22	
		15 - 17	527	8	0.25	9	14	19	
		17 - 22	528	9	0.50	12	18	22	
		22 - 25	529	40	2.95	27	N	44	
		25 - 28	530	1	0.49	27	N	18	
		28 - 31	531	2	1.40	N	N	21	
		31 - 33	532	3	1.76	132	42	65	
						132	N	79	duplicate assay

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn.	Ti.	Zr.	Remarks
74	118	0 - 3	533	670144	4.07	N	N	N	
		3 - 6	534	5	1.34	43	40	30	
		6 - 10	535	6	2.77	N	N	N	
		10 - 14	536	7	1.45	6	N	N	
		14 - 16	537	8	2.28	5	N	N	
		16 - 24	538	9	3.08	N	N	N	same footage length.
		16 - 24	539	50	1.11	N	N	N	
		24 - 26	540	1	0.97	6	35	43	
		26 - 28	541	2	4.15	N	N	N	
75	104	0 - 5	542	670001	0.21	4	34	53	
		5 - 9	543	2	0.16	2	49	48	
		9 - 13	544	3	0.06	7	27	3	
		13 - 15	545	4	0.13	44	15	23	
		15 - 16	546	5	0.16	8	12	16	
			547	6					No conc
			548	7					
			549	8					
		21 - 23	550	9	0.23	T	7	19	.

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
76	100	0 - 3	551	670010	0.51	40	58	176	
		3 - 6	552	1	0.14	8	11	17	
		6 - 10	553	2	0.09	T	4	10	
		10 - 13	554	3	0.12	N	8	8	
		13 - 16	555	4	0.44	N	11	13	
		16 - 20	556	5	0.08	T	7	11	
		20 - 22	557	6	0.44	N	11	13	
		22 - 24	558	7	0.25	N	8	10	
		24 - 26	559	8	0.10	T	12	15	
		26 - 28	560	9					No. conc.
		28 - 30	561	20	0.19	N	6	4	
77	99	0 - 2	562	670021	0.33	111	25	35	
		2 - 4	563	2	0.13	34	13	20	
		4 - 6	564	3	0.54	18	16	16	
		6 - 8	565	4	0.14	24	10	16	
		8 - 10	566	5	0.20	12	10	12	
		10 - 12	567	6	0.88	11	26	26	
		12 - 14	568	7	0.48	9	30	37	
		14 - 15	569	8	0.35	1	62	64	

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	% N (%)	H. Assay (g/t) Sn.	Ti.	Zr,	Remarks
78	110	0 - 2	570	670029	0.33	2	38	61	
		2 - 4	571	30	0.26	17	66	81	
		4 - 7	572	1	0.20	40	25	49	
		7 - 10	573	2	0.52	11	39	785	
		10 - 13	574	3	0.24	3	32	52	
		13 - 15	575	4	0.20	3	14	20	
		15 - 17	576	5	0.32	2	10	10	
		17 - 20	577	6	0.19	T	6	3	
		20 - 22	578	7	0.83	12	N	12	
		22 - 25	579	8					No cone.
		25 - 27	580	9	0.35	1	21	24	
		27 - 31	581	40	0.17	T	16	20	
79	108	0 - 4	582	670041	0.68	156	158	55	
		4 - 7	583	2	0.35	32	16	37	
		7 - 11	584	3	0.68	122	N	15	
		11 - 14	585	4	0.36	23	22	38	
		14 - 17	586	5	0.31	2	37	45	
		17 - 20	587	6	0.19	1	33	61	
		20 - 22	588	7	0.27	N	18	24	
		22 - 23	589	8	0.49	1	30	33	

Hole No.	Water (ft.)	Interval (ft.)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
80	100	0 - 4	590	670049	0.49	N	37	56	
		4 - 7	591	50	0.26	23	24	34	
		7 - 11	592	1	0.15	11	11	29	
		11 - 13	593	2	0.21	16	N	30	
		13 - 16	594	3	0.30	T	22	18	
		16 - 21	595	4	0.18	1	13	10	
		21 - 23	596	5	0.37	3	16	9	
		23 - 26	597	6	0.25	5	26	43	
		26 - 29	598	7	0.27	35	12	33	
		29 - 31	599	8	0.40	110	10	30	
		31 - 34.	600	9	0.40	7	N	9	
		34 - 37	601	60	0.76	2	18	11	
		37 - 39	602	1	0.13	1	9	14	
		39 - 41	603	2	0.36	N	20	19	
81	97	0 - 4	604	670063	0.64	N	63	54	
		4 - 7	605	4	0.98	N	67	97	
		7 - 10	606	5	0.66	N	37	30	
		10 - 13	607	6	0.91	N	61	69	
		13 - 16	608	7	0.90	N	129	224	
		16 - 18	609	8	0.36	N	50	54	
		18 - 21	610	9	0.19	3	40	60	
		21 - 23	611	70	0.42	6	18	26	
82	90	0 - 3	612	670160	0.44	6	13	92	
		3 - 7	613	1	1.75	N	26	40	
83	94	0 - 5	614	670162	1.97	10	39	207	
		5 - 9	615	3	3.39	7	34	51	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
83	94	9 - 12	Ne 616	670164	1.92	13	38	96 *	
		12 -15	617	5	0.50	13	15	35 *	
		15 - 17	618	6	3.65	11	37	91 *	
		17 - 20	619	7	2.01	6	40	40 *	
						12	N	40	Duplicate Assay
		20 - 22	. 620	8	1.87	8	19	37 *	
		22 - 25	621	9	1.79	5	18	45 *	
		25 - 28	622	70	1.01	3	10	25 *	
		28 - 32	623	1	0.41	4	8	19 *	
		32 - 34	624	2	2.18	22	55	196 *	
		34 - 37	625	3	0.38	78	10	42 *	
		37 - 40	626	4	0.34	18	9	22 *	
		40 - 44	627	5	0.40	4	8	16 *	
84	115	0 - 5	628	6	0.30	3	17	38 *	
		5 - 8	629	7	1.12	3	22	39 *	
		8 - 12	630	8	0.54	3	19	49 *	
		12 - 15	631	9	0.84	160	17	42 *	
						160	17	42	See Appx. B.
						139	13	38	
						126	13	29	
						139	13	38	
		15 - 18	632	80	2.44	10	49	49 *	
		18 - 22	633	1	0.27	4	10	14 *	

*in original report of 27 Jan.'67 Ti and Zr reversed. Corrected on 14 May '67.

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	(%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
84	115	22 - 26	NE 634	670182	0.30	3	12	21 *	
		26 - 28	635	3	3.56	7	36	71 *	
		28 - 30	636	4	2.03	6	31	41 *	
		30 - 32	637	5	0.31	50	30	70 *	
85	120	0 - 4	638	6	0.67	3	24	47 *	
						4	20	44	Duplicate Assay
		4 - 9	639	7	0.44	4	18	33 *	
		9 - 11	640	8	0.61	64	34	76 *	
						61	31	70	Duplicate Assay
		11 - 13	641	9	0.91	5	23	50 *	
		13- 16	642	90	2.56	13	51	128 *	
		16 - 18	643	1	0.80	8	28	96 *	
		18 - 22	644	2	0.71	7	25	75 *	
		22 - 26	645	3	1.25	44	42	156 *	
						28			See Appx. C
						28			
						26			
						28			
		26 - 29	646	4	1.17	134	70	228	See Appx. B
						105	82	222	
						76	64	164	
						96	82	222	
						88	70	175	
		29 - 31	647	5	2.18	7	N	33	

*in original report of 27 Jan. '67 Ti and Zr reversed. Corrected on 14 May '67.

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	(%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
85	120	31 - 32	NE 648	670196	0.43	2	N	13	
		32 - 35	649	7	1.20	2	N	18	
		35 - 37	650	8	0.43	1	N	9	
		37 - 40	651	9	0.53	2	N	11	
86	118	0 - 4	652	200	2.26	7	34	90	
		4 - 8	653	1	1.54	6	54	139	
		8 - 11	654	2	1.05	7	95	110	
		11 - 13	655	3	0.98	4	20	44	
			656	4					Clay Not Treated
			657	5					
			658	6					
			659	7					
			660	8					
87	110	0 - 3	661	9	1.96	12	39	157	
		3 - 6	662	10	1.06	4	11	58	
		6 - 8	663	1	0.78	3	8	43	
		8 - 11	664	2	2.04	10	N	82	
		11 - 13	665	3	1.67	12	N	92	
		13 - 16	666	4	1.85	4	N	74	
		16 - 18	667	5	2.29	5	N	69	
		18 - 20	668	6	0.98	2	20	34	
		20 - 22	669	7	2.56	5	N	64	
		22 - 25	670	8	0.83	5	8	50	
		25 - 28	671	9	1.90	6	N	38	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	(%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
88	113	0 - 3	NE 672	670220	1.18	32	35	59	
		3 - 6	673	1	0.92	13	N	46	
		6 - 10	674	2	1.46	72	66	110	
						38	15	66	Duplicate Assay
		10 - 13	675	3	1.78	5	N	18	
		13 - 15	676	4	1.06	4	32	64	
		15 - 18	677	5	2.67	11	27	53	
		18 - 20	678	6	0.51	3	15	15	
		20 - 23	679	7	0.74	3	11	79	
		23 - 25	680	8	0.61	2	N	12	
		25 - 28	681	9	1.76	88	18	35	
						11	18	44	Duplicate Assay
		28 - 31	682	30	0.95	8	71	100	
89	114	0 - 4	683	1	0.45	3	14	23	
		4 - 8	684	2	2.06	515	391	453	
						505	350	402	Duplicate Assay
		8 - 10	685	3	2.40	79	264	276	
						36	252	276	Duplicate Assay
		10 - 14	686	4	1.93	116	309	415	
						125	328	318	Duplicate Assay
		14 - 18	687	5	0.42	21	67	48	
						10	71	34	Duplicate Assay
		18 - 21	688	6	0.13	2	35	40	
		21 - 23	689	7	0.14	1	19	25	
		23 - 25	690	8	0.37	2	28	28	
		25 - 28	691	9	0.09	1	17	16	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	(%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
89	114	28 - 30	NE 692	670240	0.22	1	24	17	
		30 - 32	693	1	0.59	2	44	47	
		32 - 34	694	2	0.13	1	31	23	
90	118	0 - 2	695	3	0.70	4	32	39	
		2 - 6	696	4	0.48	2	34	55	
		6 - 8	697	5	0.24	1	38	37	
		8 - 11	698	6	0.49	6	15	25	
		11 - 13	699	7	0.59	2	30	35	
		13 - 15	700	8	1.31	4	39	39	
		15 - 17	701	9	0.90	3	27	41	
		17 - 20	702	50	0.56	2	17	22	
		20 - 23	703	1	0.77	6	23	23	
		23 - 25	704	2	1.38	4	14	14	
		25 - 27	705	3	2.34	7	N	23	
		27 - 30	706	4	0.94	2	N	24	
91	120	0 - 3	707	5	0.64	6	45	38	
		3 - 7	708	6	0.50	2	18	23	
		7 - 10	709	7	0.68	2	34	68	
		10 - 12	710	8	1.08	8	16	54	
						8	10	38	Duplicate Assay
		12 - 14	711	9	1.32	8	N	26	
		14 - 17	712	60	3.96	16	N	N	
		17 - 20	713	1	2.18	7	N	44	
		20 - 22	714	2	1.17	4	N	23	
		22 - 24	715	3	1.98	6	N	N	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
91	120	24 - 26	NE 716	670264	2.01	10	N	30	
		26 - 28	717	265	0.69	4	7	14	
92	125	0 - 4	718	6	0.48	120	7	26	
						113	7	14	Duplicate Assay
		4 - 6	719	7	2.22	31	22	89	
93	120	0 - 3	720	8	3.35	13	N	67	
		3 - 6	721	9	1.76	N	N	44	
		6 - 10	722	70	1.02	N	10	20	
		10 - 13	723	1	0.66	3	13	26	
		13 - 16	724	2	0.96	41	19	86	
		16 -.19	725	3	2.25	29	N	34	
		19 - 22	726	4	1.18	7	N	18	
						7	N	29	Duplicate Assay
94	115	0 - 5	727	5	0.62	2	19	47	
		5 - 8	728	6	2.06	6	41	103	
		8 - 10	729	7	1.21	2	24	48	
		10 - 12	730	8	1.46	3	N	22	
		12 - 15	731	9	1.47	3	N	22	
		15 - 18	732	80	2.08	6	N	42	
		18 - 21	733	1	0.65	4	7	20	
		21 - 23	734	2	1.83	4	N	73	
		23 - 25	735	3	1.81	4	N	72	
		25 - 28	736	4	1.58	3	N	87	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
95	110	0 - 5	NE 737	670293	0.43	25	13	39	
		5 - 7	738	4	0.29	24	22	46	
		7 - 10	739	5	0.45	8	5	18	
		10 - 15	740	6	0.70	5	7	18	
		15 - 17	741	7	0.68	31	N	17	
						4	N	20	Duplicate Assay
		17 - 20	742	8	2.25	43	N	45	
		20 - 22	743	9	1.02	11	N	20	
		22 - 25	744	300	0.91	14	N	18	
		25 - 27	745	1	1.77	14	N	18	
		27 - 29	746	2	1.39	11	N	14	
		29 - 32	747	3	1.70	12	N	17	
96	112	0 - 4	748	4	2.68	27	27	67	
		4 - 8	749	5	1.52	12	15	53	
		8 - 10	750	6	2.07	10	21	124	
		10 - 13	751	7	2.19	4	22	66	
		13 - 17	752	8	1.20	4	12	36	
		17 - 21	753	9	2.29	30	23	103	
97	117	0 - 3	754	10	3.97	12	N	99	
		3 - 6	755	1	2.14	4	21	64	
		6 - 9	756	2	1.49	19	N	37	
		9 - 12	757	3	2.20	4	N	22	
		12 - 15	758	4	1.73	3	N	35	
		15 - 17	759	5	0.94	3	N	19	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
98	116	0 - 4	NE 760	670316	2.66	5	N	67	
		4 - 6	761	7	2.37	7	47	166	
		6 - 9	762	8	1.54	5	15	39	
		9 - 14	763	9	1.48	4	15	37	
		14 - 17	764	20	0.97	5	15	34	
		17 - 21	765	1	1.27	N	N	13	
		21 - 24	766	2	2.13	11	21	64	
		24 - 26	767	3	2.50	28	N	63	
		26 - 29	768	4	2.57	10	26	77	
		29 - 31	769	5	3.03	6	N	76	
		31 - 35	770	6	1.99	N	N	50	
99	102	0 - 3	771	7	1.39	8	N	70	
		3 - 7	772	8	2.86	6	N	43	
						9	N	57	Duplicate Assay
		7 - 9	773	9	0.70	2	N	11	
		9 - 11	774	30	0.74	2	N	15	
		11 - 15	775	1	1.44	4	N	29	
100	100	0 - 3	776	2	2.64	58	N	66	
						24	N	92	Duplicate Assay
		3 - 5	777	3	0.36	1	N	5	
		5 - 8	778	4	0.26	2	N	7	
		8 - 9	779	5	0.09	6	N	8	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	(%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
101	103	0 - 5	NE 780	670336	0.60	2	51	27	
		5 - 9	781	7	0.88	2	9	26	
		9 - 12	782	8	0.36	1	43	43	
		12 - 15	783	9	1.66	3	17	50	
		15 - 18	784	40	0.44	1	N	11	
		18 - 20	785	1	0.23	T	16	23	
		20 - 22	786	2	0.42	1	29	50	
		22 - 25	787	3	0.50	1	25	35	
102	111	0 - 2	788	4	0.59	10	41	30	
		2 - 4	789	5	0.27	2	5	11	
		4 - 7	790	6	0.34	1	3	10	
						2	3	14	Duplicate Assay
		7 - 9	791	7	0.20	T	N	6	
			792	8					clay & peat
103	112	0 - 5	793	9	0.26	13	31	56	
		5 - 7	794	50	0.31	98	11	47	
						62	12	39	Duplicate Assay
		7 - 10	795	1	0.89	8	9	40	
		10 - 15	796	2	1.11	361	17	106	
						350	22	89	Duplicate Assay
		15 - 19	797	3	2.26	111	N	57	
						226	N	90	Duplicate Assay
		19 - 23	798	4	0.55	6	6	14	
		23 - 25	799	5	0.29	1	N	7	
		25 - 26	800	6	0.95	15	N	18	
						10	N	24	Duplicate Assay

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.		H. Assay (g/t) Sn	Ti	Zr	Remarks
104	100	0 - 4	NE 801	670357	1.67	3	N	N	
		4 - 8	802	8	1.47	3	N	29	
		8 - 12	803	9	1.01	49	N	30	
						76	N	40	Duplicate Assay
		12 - 15	804	60	1.31	35	N	26	
		15 - 19	805	1	0.48	65	N	10	
						110	N	14	Duplicate Assay
105	95	0 - 4	806	2	0.21	19	25	48	
		4 - 7	807	3	1.37	5	N	34	
						7	N	41	Duplicate Assay
		7 - 9	808	4	0.35	T	N	16	
		9 - 11	809	5	1.19	2	N	29	
		11 - 13	810	670366	1.10	N	N	23	
106	102		811	670501	0.39	4	16	31	
			812	2	1.18	25	N	47	
			813	3	0.31	T	N	11	
			814	4	0.50	1	N	20	
			815	5	0.58	2	6	43	
107	116		816	6	0.69	75	N	45	
						120	N	45	Duplicate Assay
			817	7	3.26	7	N	65	
			818	8	1.13	2	N	40	
			819	9	0.28	1	N	10	
			820	10	0.32	T	N	11	

Sample interval start of #105

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
108	115		NE 821	670511	0.97	21	N	48	
			822	2	0.56	2	22	42	
			823	3	0.19	2	N	39	
109	116		824	4	0.58	23	15	55	
			825	5	0.49	37	7	49	
			826	6	1.76	88	N	35	
						194	N	44	Duplicate Assay
			827	7	0.86	29	N	22	
			828	8	1.55	5	N	31	
			829	9	1.51	3	N	30	
			830	20					Clay Not Treated
			831	1	0.48	1	N	12	
110	111		832 +	2	1.71	36	N	77	+ Mines Dept. shows
			833	3	1.11	2	N	41	first sample in
			834	670524	1.45	3	N	36	Hole 110 as 832.
			835 +	670427	0.96	68	N	58	EZ shows 835.
						86	N	58	Duplicate Assay
			836	670428	0.43	6	N	30	
111	123		837	9	0.58	N	20	46	
			838	30	0.46	N	16	37	
			839	1	0.34	N	7	27	
			840	2	1.05	2	N	63	
			841	3	0.32	20	N	24	
			842	4	0.76	8	N	34	
			843	5	0.74	21	N	22	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	(%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
111	123		NE 844	670436	2.32	23	N	58	
			845	7	0.33	21	N	58	Duplicate Assay
112	120		846	8	0.46	1	15	26	
			847	9	0.76	1	14	32	
			848	40	0.73	2	15	57	
			849	1	1.01	N	N	33	
			850	2	1.88	2	N	61	
			851	3	1.01	N	N	47	
			852	4	0.31	N	N	35	
			853	5		T	N	11	
			854	6					Clay - Not Treated
			855	7	0.47	1	N	16	
113	112		856	8	1.82	4	82	255	
			857	9	1.06	34	21	64	
			858	50	0.71	4	N	64	
			859	1	0.78	N	N	23	
			860	2	1.18	2	N	53	
			861	3	1.26	N	N	38	
			862	4	1.17	6	N	53	
						7	N	56	Duplicate Assay

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
114	109		NE 863	670455	3.25	16	N	65	
			864	6	0.82	N	25	16	
			865	7	1.20	N	N	24	
			866	8	0.51	N	N	8	
			867	9	0.26	T	12	35	
			868	60	0.58	6	N	23	
			869	1	0.44	3	N	13	
			870	2	0.68	7	N	17	
			871	3	0.83	10	N	17	
			872	4	2.03	144	N	91	
						142	N	102	Duplicate Assay
			873	5	1.40	24	N	42	
			874	6	1.12	19	N	22	
			875	7	0.77	6	N	19	
			876	8	0.86	2	N	34	
115			877	670469	1.84	4	N	83	
			878	670500					Sample Lost
			879	670470	0.22	5	33	52	
			880	1	0.14	12	21	41	
						8	140	37	Duplicate Assay
			881	2	0.88	2	18	53	
			882	3	0.59	1	15	38	
			883	4	0.25	T	N	11	
			884	5	0.41	N	N	16	
			885	6	0.31	2	3	22	
			886	7	0.72	1	N	14	
			887	670478	0.97	2	N	29	
			888	670525	0.28	22	N	17	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
116			NE 889	670526	3.85	8	N	154	
			890	7	3.79	8	N	95	
			891	8	1.37	3	14	34	
			892	9	0.36	1	7	14	
			893	30	0.34	1	N	7	
			894	1	0.37	1	N	7	
			895	2	0.70	3	N	18	
			896	3	0.78	7	N	35	
			897	4	1.61	6	N	32	
117			898	5	1.38	6	N	35	
			899	6	2.18	15	N	54	
						13	N	54	Duplicate Assay
			900	7	4.73	28	N	118	
			901	8	1.01	8	N	45	
			902	9	0.63	3	9	44	
			903	40	0.64	3	13	45	
			904	1	1.34	5	N	87	
			905	2	0.77	9	N	58	
118			906	3	0.50	10	N	33	
			907	4	1.60	6	N	48	
			908	5	0.74	8	N	19	
			909	6	0.80	2	8	32	
			910	7	1.25	4	N	25	
			911	8	0.78	7	N	19	
			912	9	0.45	5	9	31	
			913	50	0.51	26	5	20	
			914	1	0.48	3	5	31	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
119			NE 915	670552	0.[illegible]	5	14	88	
			916	3	0.13	4	17	38	
			917	4	0.24	1	6	29	
			918	5	0.28	1	4	66	
			919	6	0.53	1	N	37	
			920	7	1.37	3	N	110	
120			921	8	0.38	17	N	28	
			922	9	0.62	4	N	22	
			923	60	0.53	3	8	40	
			924	1	0.24	1	N	6	
			925	2	0.33	N	N	12	
			926	3	0.36	1	5	27	
			927	4	0.83	1	N	62	
			928	5	0.38	9	N	11	
			929	6	0.57	2	N	23	
121			930	7	0.58	5	17	93	
			931	8	0.52	2	16	36	
			932	9	0.23	T	11	25	
			933	70	0.20	T	7	12	
			934	1	0.14	2	24	43	
			935	2	0.23	14	N	17	
			936	3	0.47	12	12	56	
			937	4	0.39	8	N	23	
			938	5	0.35	12	N	52	
			939	6	0.18	8	N	14	
			940	7	1.81	7	N	118	
			941	8	0.74	1	11	70	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
122			NE 942	670579	0.31	1	3	17	
			943	80	0.07	T	N	3	
123			944	1	1.60	13	N	40	
			945	2	0.05	4	T	3	
			946	3	0.04	T	N	2	
124			947	4	0.28	9	14	42	
			948	5	0.31	T	N	12	
			949	6	0.19	2	N	14	
			950	7	0.99	4	N	40	
			951	8	1.71	7	N	43	
			952	9					Clay Not Treated
125			953	90	0.28	2	8	20	
			954	1	0.26	1	9	27	
			955	2	0.83	11	8	21	
			956	3	0.57	5	14	48	
			957	4	1.01	28	10	56	
						17	20	66	Duplicate Assay
			958	5	0.74	42	N	33	
						41	22	56	
						41	19	52	See Appx. B
						44	19	56	
						38	15	56	
			959	6	2.18	78	N	65	
						196	N	76	Duplicate Assay
			960	7	0.53	13	N	19	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
126			NE 961	670598	0.55	2	8	25	
			962	9	1.91	6	N	76	
			963	600	0.98	3	N	39	
			964	1	0.34	1	5	20	
			965	2	0.23	1	2	14	
			966	3					
			967	4					Clay Not Treated
			968	5					
			969	6	0.30	22	12	42	
			970	7	0.56	20	N	36	
			971	8	0.66	66	N	26	
						79	N	26	Duplicate Assay
127			972	9	0.43	8	8	41	
			973	10	0.47	7	12	38	
			974	1	0.51	10	20	66	
			975	2	0.75	15	11	30	
			976	3	0.65	20	6	49	
			977	4	0.77	15	N	27	
			978	5					Clay Not Treated
			979	6					
			980	7	0.82	49	8	45	
						62	8	41	Duplicate Assay
			981	8	0.27	8	7	40	
			982	9	1.50	30	N	45	
			983	20	1.19	30	N	36	
						6	N	24	Duplicate Assay
			984	1	1.60	51	N	48	
						8	N	42	Duplicate Assay

Hole No.	Water (ft)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
128			NE 985	670622	0.17	4	N	8	
			986	3	0.09	4	1	4	
129			987	4	0.93	3	N	46	
			988	5	1.05	11	N	26	
			989	6					Clay Not Treated
130			990	7	0.68	24	N	24	
			991	8	2.82	23	N	70	
			992	9	0.85	3	21	38	
			993	30	0.76	2	15	27	
			994	1	2.12	6	N	53	
			995	2	2.31	9	23	58	
131			996	3	0.75	10	15	41	
						20	15	38	See Appx B.
						17	19	41	
						17	19	41	
						17	19	41	
			997	4	0.37	1	4	13	
			998	5	0.53	2	5	19	
132			999	6	0.63	4	16	34	
			1000	7	0.76	17	46	65	
						28			See Appx. C
						30			
						28			
						27			

Hole No.	Water (ft.)	Interval (ft)	OMAG No.	Register No.	N (%)	H. Assay (g/t) Sn.	Ti	Zr	Remarks
132 cont.			1001	670638	0.68	12	27	54	
			1002	9	1.27	3	19	44	
			1003	40	1.16	14	N	29	
			1004	1	1.15	3	N	17	
			1005	2	0.81	3	8	32	
			1006	3	1.68	3	N	34	
			1007	4	1.00	3	20	55	
133			1008	670645	0.39	5	27	47	
			1009	6	1.46	18	44	117	
			1010	7	2.93	35	N	88	
			1011	8	1.40	10	56	105	
			1012	9	0.89	4	18	44	
			1013	50	0.53	2	16	32	
			1014	1	0.77	3	31	50	
			1015	2	0.29	1	N	9	
134			1016	670653	1.53	8	N	46	
			1017	4	1.28	5	N	26	
			1018	5	1.06	3	N	21	
			1019	6	1.41	4	N	21	
135			1020	670657	1.23	4	N	31	
			1021	8	0.93	4	N	37	
			1022	9	0.72	2	14	25	

Hole No.	Water (ft)	Interval (ft)	OMAG No.	REGISTER No.	N (%)	H. ASSAY (g/t) Sn	Ti	Zr	Remarks
136			1023	670660	0.90	4	18	31	
			1024	1	0.84	20	42	71	
						18	59	67)	
						18	55	63)	See Appx B.
						18	63	67)	
						18	50	55)	
			1025	670662	0.87	3	27	31	
			1026	3	0.85	3	17	34	
			1027	4	0.38	T	15	23	
			1028	5	2.82	8	N	42	
			1029	6	3.18	13	N	64	
137			1030	670667	0.84	3	59	80	
			1031	8	2.12	59	N	64	
						55	N	85	duplicate Assay
			1032	9	0.73	17	11	29	
			1033	70	0.88	11	18	35	
			1034	1	1.16	107	N	23	
						84		)	
						85		)	See Appx C
						87		)	
						85		)	
			1035	2	0.79	4	24	40	
			1036	3	0.78	4	16	23	

Hole No.	Water (ft)	Interval (ft)	MAG No.	Register No.	(%)	H. Assay (g/t) Sn	Ti	Zr	Remarks
138			1037	670674	1.22	4	N	37	
			1038	5	0.75	2	15	30	
			1039	6	0.52	5	31	26	
			1040	7	1.75	7	N	52	

Check Samples (Refer to Appx. F.)

				Remarks Total Sn. (g/t)
1	670686	5.51	167	
		5.59	179	192
2	670687	3.22	150	
		3.30	152	163
3	670688	6.35	218	
		6.77	223	223
4	670689	6.66	54	
		6.97	56	59
5	670690	7.14	93	
		7.39	96	108

The first result above was obtained by the routine method the second after drying all products, weighing them and then assaying them hence the total tin figure in the "Remarks" column.

927001

OFFSHORE

OCEAN MINING A. G.

AMG REFERENCE POINTS ADDED

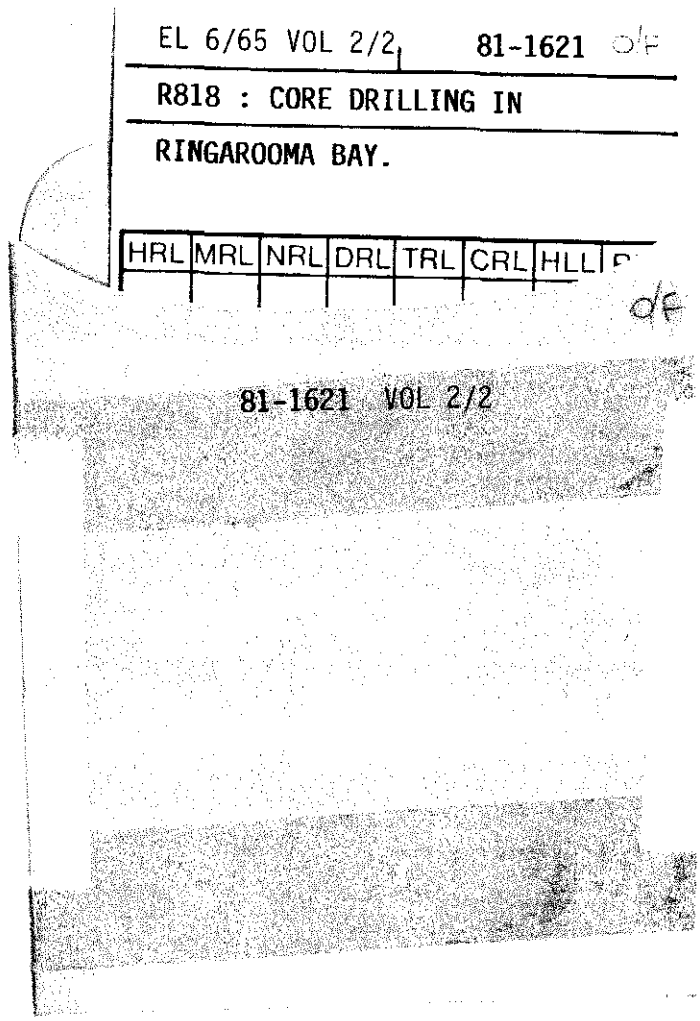
81-1621

TASMANIA DEPARTMENT OF MINES

927c.

927002

SPECIAL NOTE : THE FOLLOWING REPORTS RELATE TO OCEAN MINING AG AT RINGAROOMA BAY DURING THE 1960S - TCR 81-1620 TCR 81-1621 TCR 94 - 3648



OCEAN MINING A. G.

927003

REPORTS HELD

Part 1 81-1617
Prospectus for a Joint Offshore Mineral Exploration Program in Australia - October, 1965

Part 2 81-1618
Tasmania, Offshore Exploration Programme: Report of Operations - April, 1966
Includes:- Track Chart Seismic Survey North East Coast Tasmania
Sample Stations North East Coast Tasmania

Part 3 81-1618
Tasmania, Offshore Exploration Programme: Report of Operations - May, 1966
Includes:- Track Chart Seismic Survey King Island
Sample Stations King Island

Part 4 81-1618
Tasmania, Offshore Exploration Programme: Report of Operations - June, 1966
Includes:- Track Chart Seismic Survey Flinders Island
Sample Stations Flinders Island

Part 5 81-1618
Tasmania, Offshore Exploration Programme: Report of Operations - July, 1966
Includes:- Distribution of Tin, Titanium, Zirconium and Chromium, Flinders Island Tasmania

Part 6 81-1618
Tasmania, Offshore Exploration Programme: Report of Operations - August, 1966
Includes:- Bass Strait E.L. 23/65 Sample Stations
West King Island E.L. 22/65 Sample Stations
South West Coast Tasmania Sample Stations

Part 7 81-1618
Tasmania, Offshore Exploration Programme: Report of Operations - September, 1966
Includes:- Southern Tasmania E.L. 7/66 Sample Stations

Part 8 81-1618
Tasmania, Offshore Exploration Programme: Report of Operations - October, 1966
Includes:- Drill Hole Sites Oyster Bay - Tasmania
Drill Hole Sites Ringarooma Bay - Tasmania
Southern Tasmania E.L. 10/66 Sample Stations
Drill Logs (Phase 2) Oyster Bay - Tasmania

Part 9 81-1618
Tasmania, Offshore Exploration Programme: Report of Operations - November, 1966
Includes:- Drill Hole Sites Ringarooma Bay
Drill Hole Sites King Island
West Tasmania E.L. 11/66 Sample Stations
Stratigraphic Columns Ringarooma Bay
Stratigraphic Distribution of Tin, Titanium, Zirconium Ringarooma Bay

Part 10 81-1618
Tasmania, Offshore Exploration Programme: Report of Operations - December, 1966
Includes:- Drill Hole Sites King Island
Drill Hole Sites Ringarooma Bay
Drill Hole Sites Mussel Roe Bay
Sample Stations West Tasmania Licence
Stratigraphic Distribution of Tin, Titanium, Zirconium Ringarooma Bay

Part 11 81-1619
Tasmania, Offshore Exploration Programme: Report of Operations - January, 1967
Includes:- Drill Hole Sites Ringarooma Bay
Drill Hole Sites Mussel Roe Bay
Stratigraphic Columns, Mussel Roe Bay
Stratigraphic Distribution of Tin, Titanium and Zirconium Ringarooma Bay

Part 12 81-1619
Tasmania, Offshore Exploration Programme: Report of Operations - February, 1967
Includes:- Drill Hole Sites Ringarooma Bay
Drill Hole Sites King Island
Sample Stations West Tasmania Licence
Sample Stations, Cape Sorell Area, West Tasmania Licence
Stratigraphic Columns King Island
Stratigraphic Distribution of Tin, Titanium, Zirconium Ringarooma Bay

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Tasmania, Offshore Exploration Programme: Report of Operations - March, 1967

Part 14 81-1619
Tasmania, Offshore Exploration Programme: Report of Operations - April, 1967

Part 15 81-1619
Tasmania, Offshore Exploration Programme: Report of Operations - May, June, 1967

Part 16 81-1619
Tasmania, Offshore Exploration Programme: Report of Operations - July, August, 1967
Includes:- Bedrock Topography Ringarooma Bay
Bathymetric Contours Ringarooma Bay

Part 17 81-1619
Tasmania, Offshore Exploration Programme: Report of Operations September, October, 1967

Part 18 81-1619
Tasmania, Offshore Exploration Programme: Report of Operations - November, December, 1967

Part 19 81-1620
TOE-JV Summary, Ringarooma Bay, Tasmania April, 1969
Includes:- Tin Isograds Ringarooma Bay

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Bathymetry

King Island - Submarine Topography
Bathometer (Contours from spot surroundings. OMAG Hydro Survey Sheets & Admiralty Chart No. 404)
Bathymetry (5 Sheets)
Bathymetry Profiles Drg. No.'s AT3/B/7 – AT3/B/14

North East – Submarine Topography
Tide Curves
Bathymetry – EL's 7/65 & 24/65
Bathymetry (9 Sheets)

Bathymetric Profiles	2 x	Drg. No.'s AT2/B/11 – AT2/B/16
	1 x	AT2/B/17
	2 x	AT2/B/18 – AT2/B/20
	1 x	AT2/B/21 – AT2/B/22
	2 x	AT2/B/23 – AT2/B/24
	2 x	Drg. No.'s AT2/B/45, AT2/B/46

Flinders Island – Bathymetry (Contours from spot surroundings. OMAG Hydro Survey Sheets & Admiralty Chart No.'s 1695A & Aus 147)
Bathymetry (5 Sheets)
Bathymetry Profiles (3 Sheets)

Oyster Bay – Submarine Topography (2 Sheets)
Tide Curves
Bathymetry Map 3 (2 Sheets)
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Bathymetry Profiles (16 Sheets)

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Track Chart Seismic Survey Flinders Island

Stations Sampled North East Coast Tasmania – Fig. 3
Stations Sampled Flinders Island
Stations Sampled Oyster Bay - Map 2 (2 Sheets)

OCEAN MINING

927008

DATA HELD

Sparker Profiles (Not available)

65

OCEAN MINING

927009

DATA LOCATION	LOCATION
Reports	Filing Cabinet
Maps	Map Drawer
Sparker Profiles	Vault

66

927010

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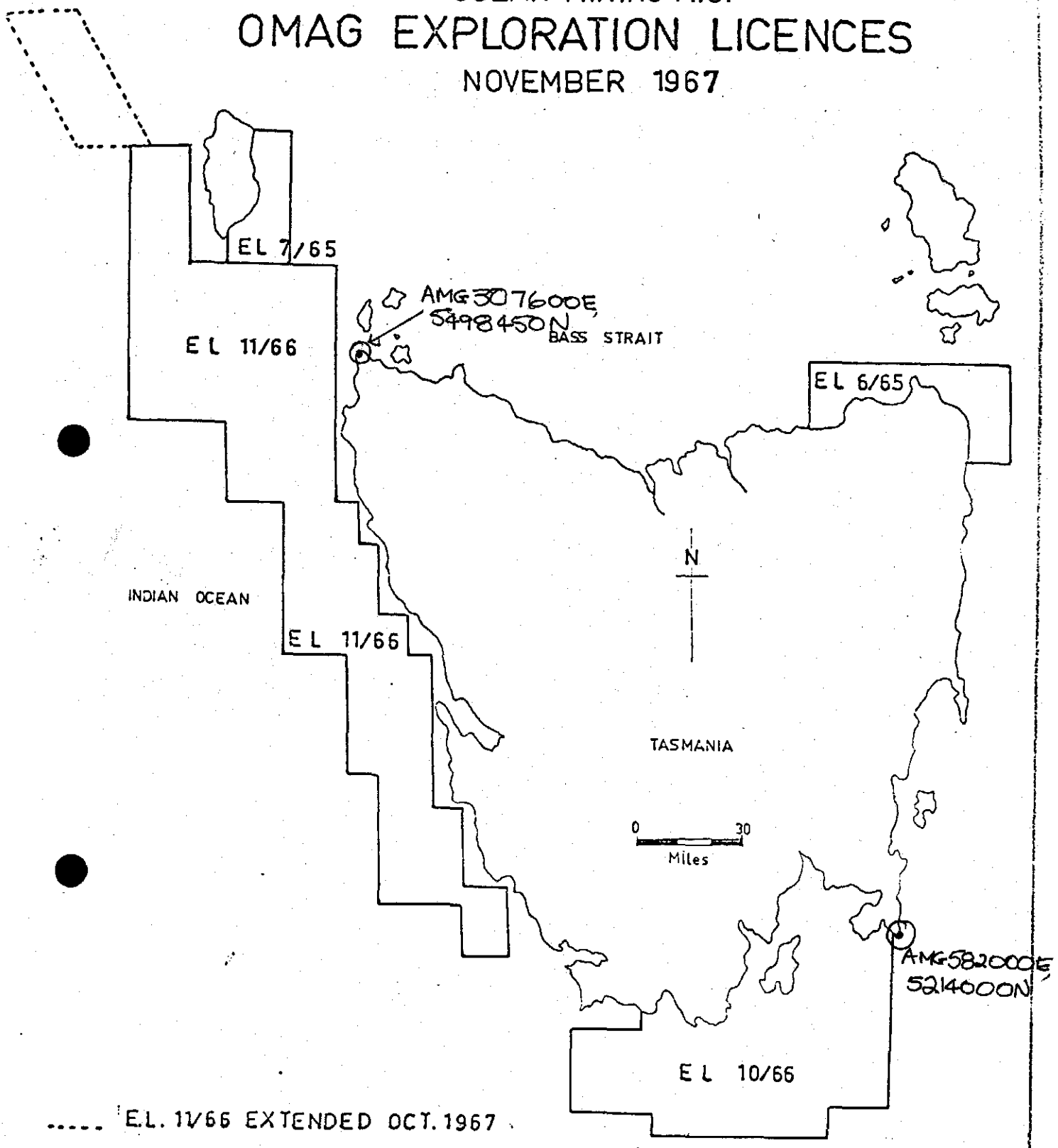
OMAG EXPLORATION LICENCES

NOVEMBER 1967



5 cm

AMG REFERENCE POINTS ADDED

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
KING ISLAND
SHEET 1

ISG REFER REPORT 70-0676

AMG REFERENCE POINTS ADDED

Lavinia Pt.

AMG 2519005 5804700N

Cowper Pt.

Fraser Bluff

AMG 2553005 5815400N

N

5 cm

Thousand feet

0 2 4 6 8 10

INDEX TO ADJOINING SHEETS

SHEET 1

SHEET 2

Datum mean sea level

Bedrock contours (fathoms)

Raydist beacon stations

81 - 1631

KING ISLAND

OCEAN MINING A.G.

BEDROCK TOPOGRAPHY

0 2 4
MILES

5 cm

SHEET 1A

1A 1A

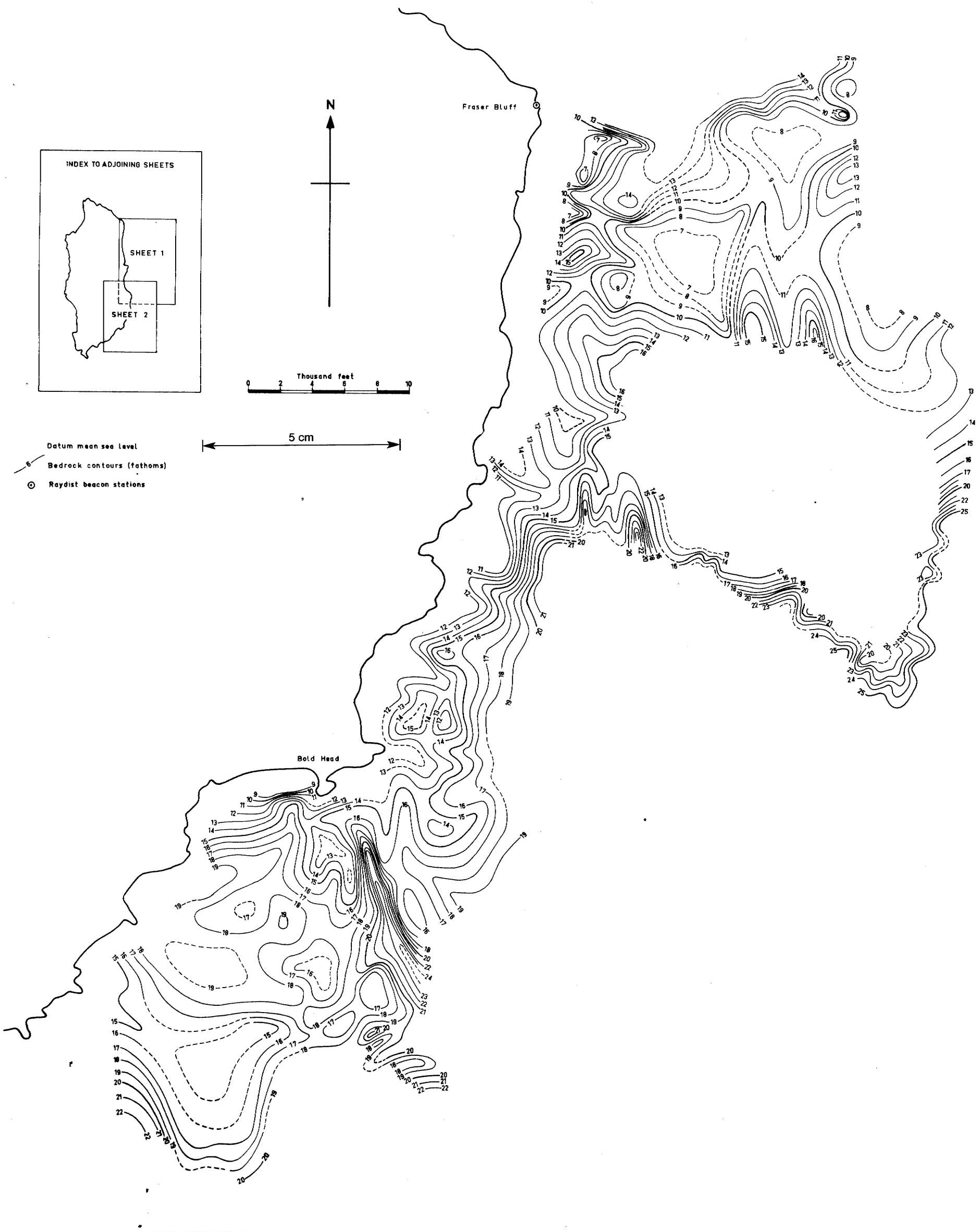


81-1621

(3) 81-1621

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
KING ISLAND
SHEET 2



④ 81-1621

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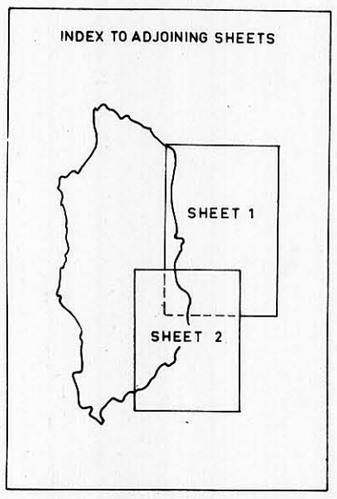
BEDROCK TOPOGRAPHY
KING ISLAND
SHEET 2



N

Thousand feet
0 2 4 6 8 10

Datum mean sea level

Bedrock contours (fathoms)

Raydist beacon stations

5 cm

ISG REFER REPORT 70-0676

AMG REFERENCE POINTS ADDED

AMG 255200E
5576500N

Fraser Bluff

Bold Head

AMG 249200E
5560500N

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
KING ISLAND
SHEET 2

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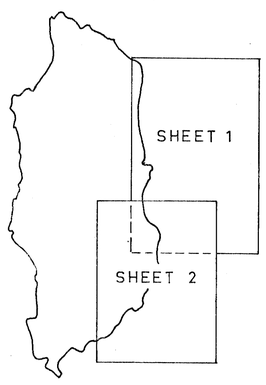


N

5 cm

Thousand feet

0 2 4 6 8 10

Datum mean sea level

Bedrock contours (fathoms)

Raydist beacon stations

Fraser Bluff

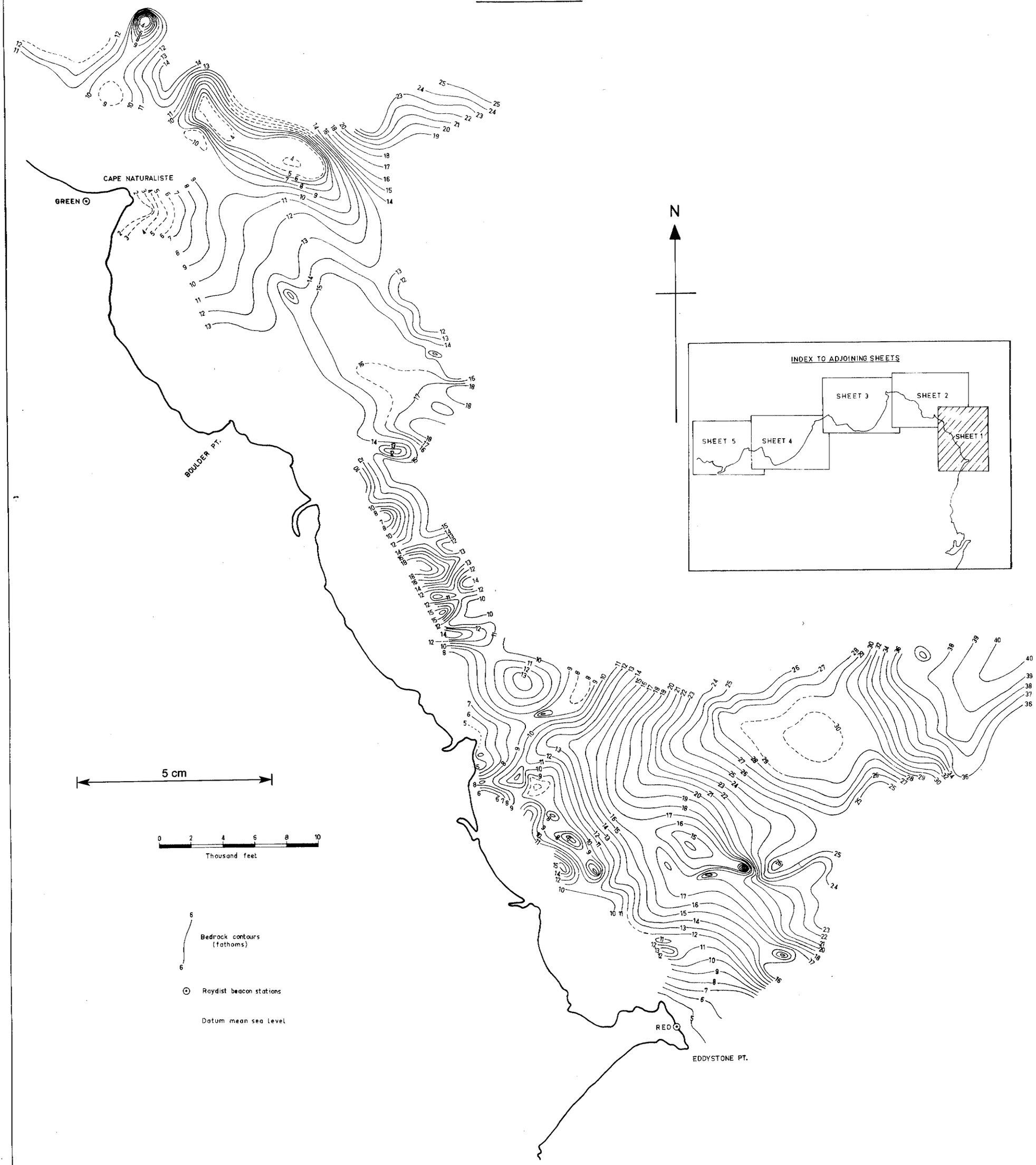
Bold Head

© 81-1621

(6) 81-1621

OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 1



8085

⑦ 81-1621

OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 1

AMG603000E, 5477400N

CAPE NATURALISTE

GREEN ⊙

BOULDER PT.

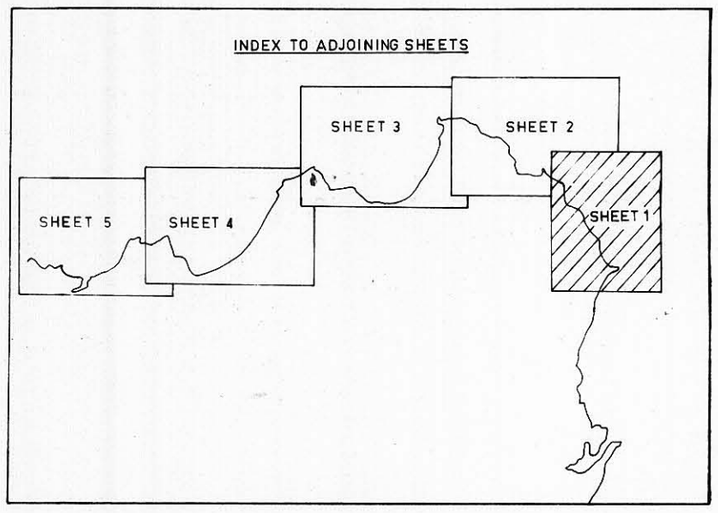
RED ⊙

AMG613500E, 5460650N

EDDYSTONE PT.

N

INDEX TO ADJOINING SHEETS



0 2 4 6 8 10

Thousand feet

6 — Bedrock contours (fathoms)

⊙ Raydist beacon stations

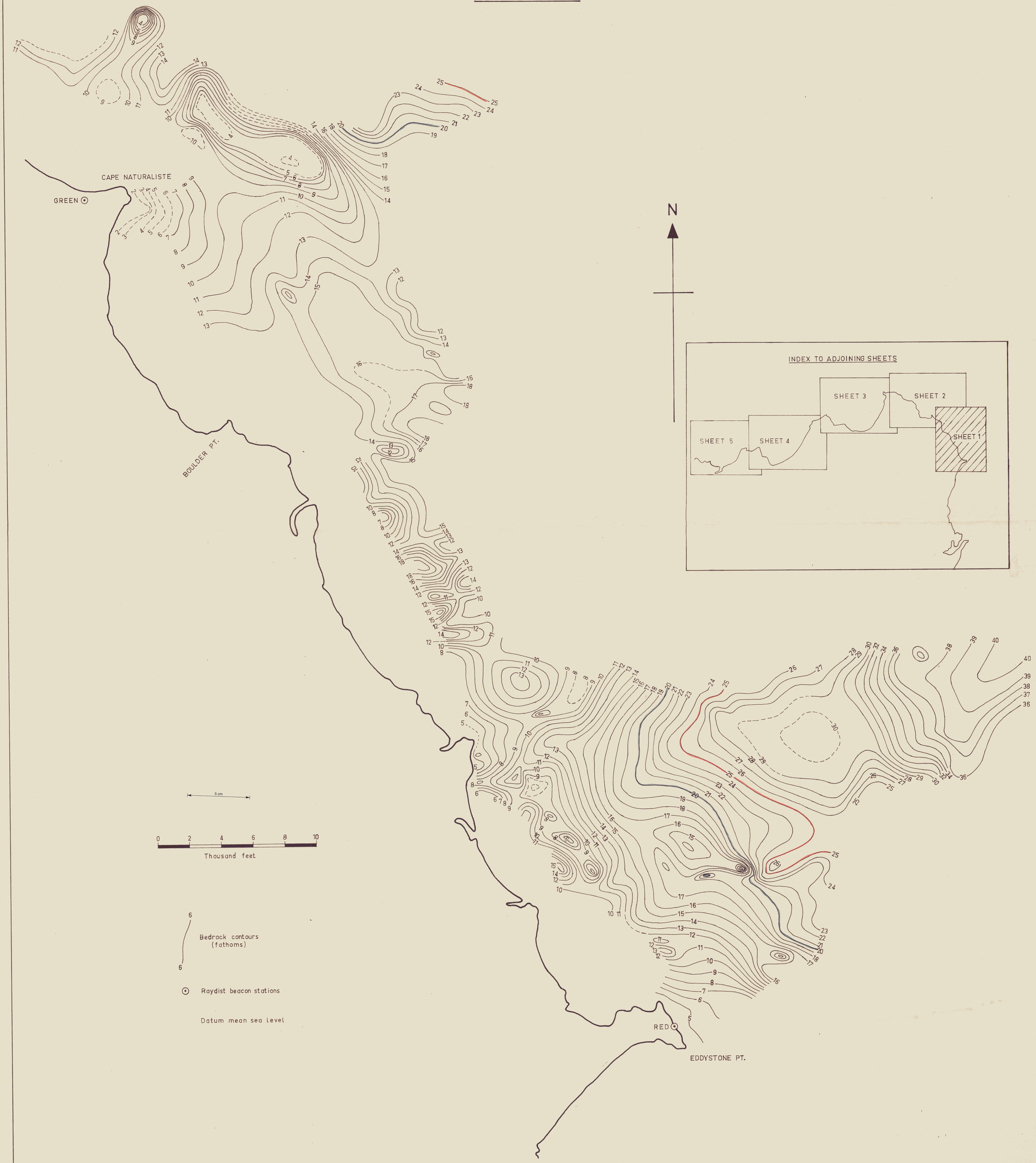
Datum mean sea level

5 cm

8090

OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 1



(8) 81-1621

OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET. 2.

N

SWAN ISLAND

Vinegar Hill

AMG387400 E, 6486750 N

Tree Point

Little Mussel Roe River

Mussel Roe Bay

Mussel Roe River

AMG603000 E, 5477400 N

Cape Naturaliste

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SHEET 3
SHEET 4
SHEET 5

Bedrock contours (fathoms)

Raydist beacon stations

Datum mean sea level

0 2 4 6 8 10
Thousand feet

5 cm

AMG REFERENCE POINTS ADDED

81-1621

81-1621

OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
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N

SWAN ISLAND

Vinegar Hill

Tree Point

Little Mussel Roe River

Mussel Roe Bay

Mussel Roe River

Cape Naturaliste

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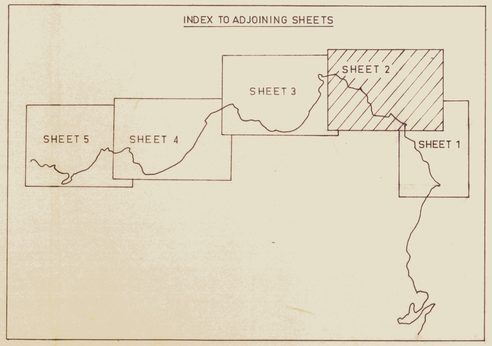


5 — Bedrock contours (fathoms) — 5

Raydist beacon stations

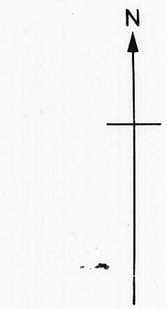
Datum mean sea level

0 2 4 6 8 10
Thousand feet.

5 cm

OCEAN MINING A G (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 3



AMG5578900E
5489200N

Cape Portland

Vinegar Hill

AMG5564000E
5480700N

Waterhouse Pt.

Tomahawk Pt.

Ringarooma Bay

Bedrock contours (fathoms)

Raydist beacon stations

Datum mean sea level

Thousand feet
0 2 4 6 8 10

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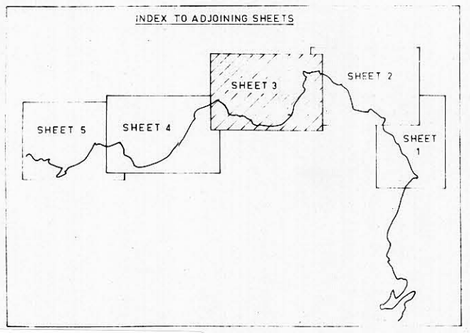

AMG REFERENCE POINTS ADDED

5 cm

81-1621

(12) 81-1621

OCEAN MINING A G (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 3

N

Cape Portland

Vinegar Hill

Waterhouse Pt.

Tomahawk Pt.

Ringarooma Bay

Bedrock contours (fathoms)

Raydist beacon stations

Datum mean sea level

Thousand feet
0 2 4 6 8 10

5 cm

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SHEET 5

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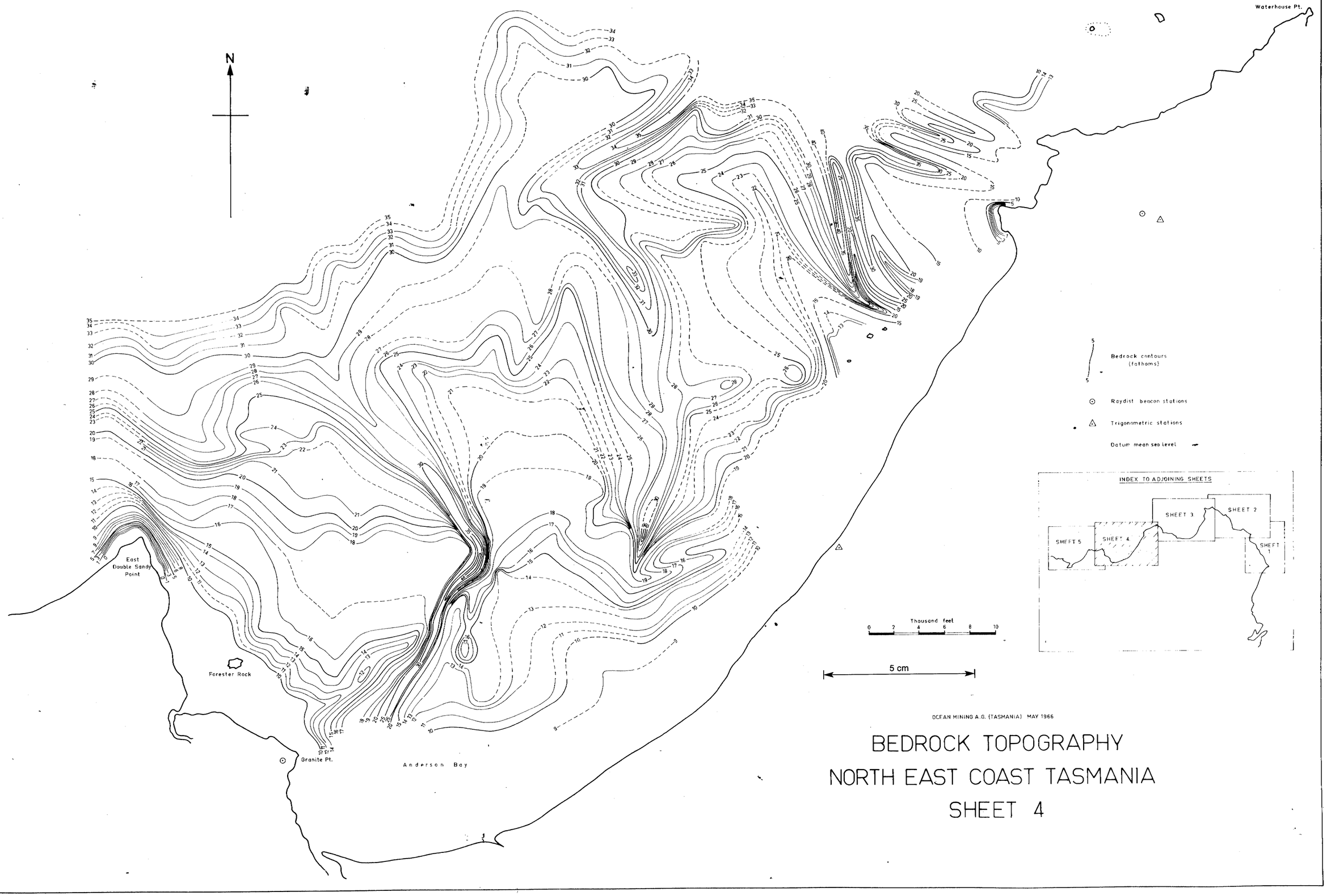

OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 4

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(13)

81-1621

N

Waterhouse Pt.

East Double Sandy Point

Forester Rock

Granite Pt.

Anderson Bay

5 — Bedrock contours (fathoms) — 5

⊙ Raydist beacon stations

△ Trigonometric stations

Datum mean sea level

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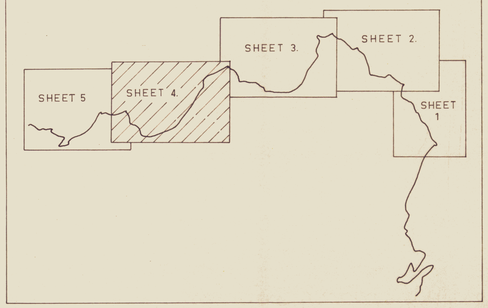

Thousand feet
0 2 4 6 8 10
5 cm

OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 4

809J

NORTH EAST COAST

SHEET 4B

OCEAN MINING A.G.

BEDROCK TOPOGRAPHY

0 2 4

MILES

5 cm

81-1621

(15)

(16) 81-1621

OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 5

N

West Double Sandy Pt.

East Double Sandy Pt

Noland Bay

Bedrock contours (fathoms)

Raydist beacon stations

Datum mean sea level

Thousand feet
0 2 4 6 8 10

5 cm

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SHEET 5
SHEET 4
SHEET 3
SHEET 2
SHEET

OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 5

N

West Double Sandy Pt.

East Double Sandy Pt.

Noland Bay

5 Bedrock contours (fathoms) 5

⊙ Raydist beacon stations

Datum mean sea level

Thousand feet
0 2 4 6 8 10

5 cm

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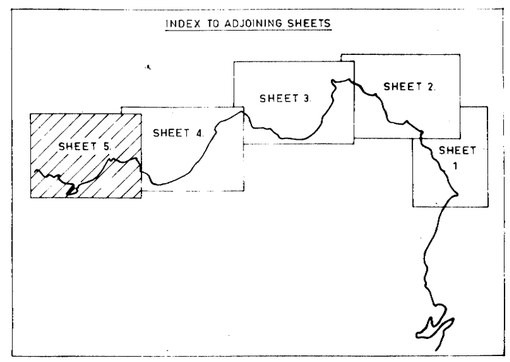

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OCEAN MINING A.G. (TASMANIA) MAY 1966

BEDROCK TOPOGRAPHY
NORTH EAST COAST TASMANIA
SHEET 5

N

West Double Sandy Pt.

East Double Sandy Pt.

Noland Bay

5 Bedrock contours (fathoms) 5

⊙ Raydist beacon stations

Datum mean sea level

Thousand feet
0 2 4 6 8 10

5 cm

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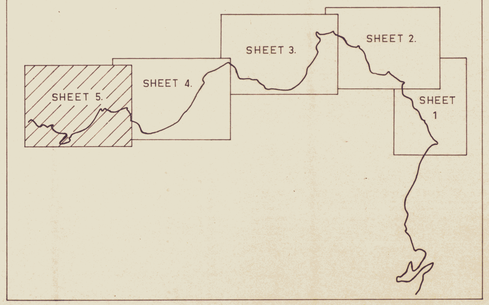


8096

NORTH EAST COAST

OCEAN MINING A.G.

BEDROCK TOPOGRAPHY

0 2 4

MILES

5 cm

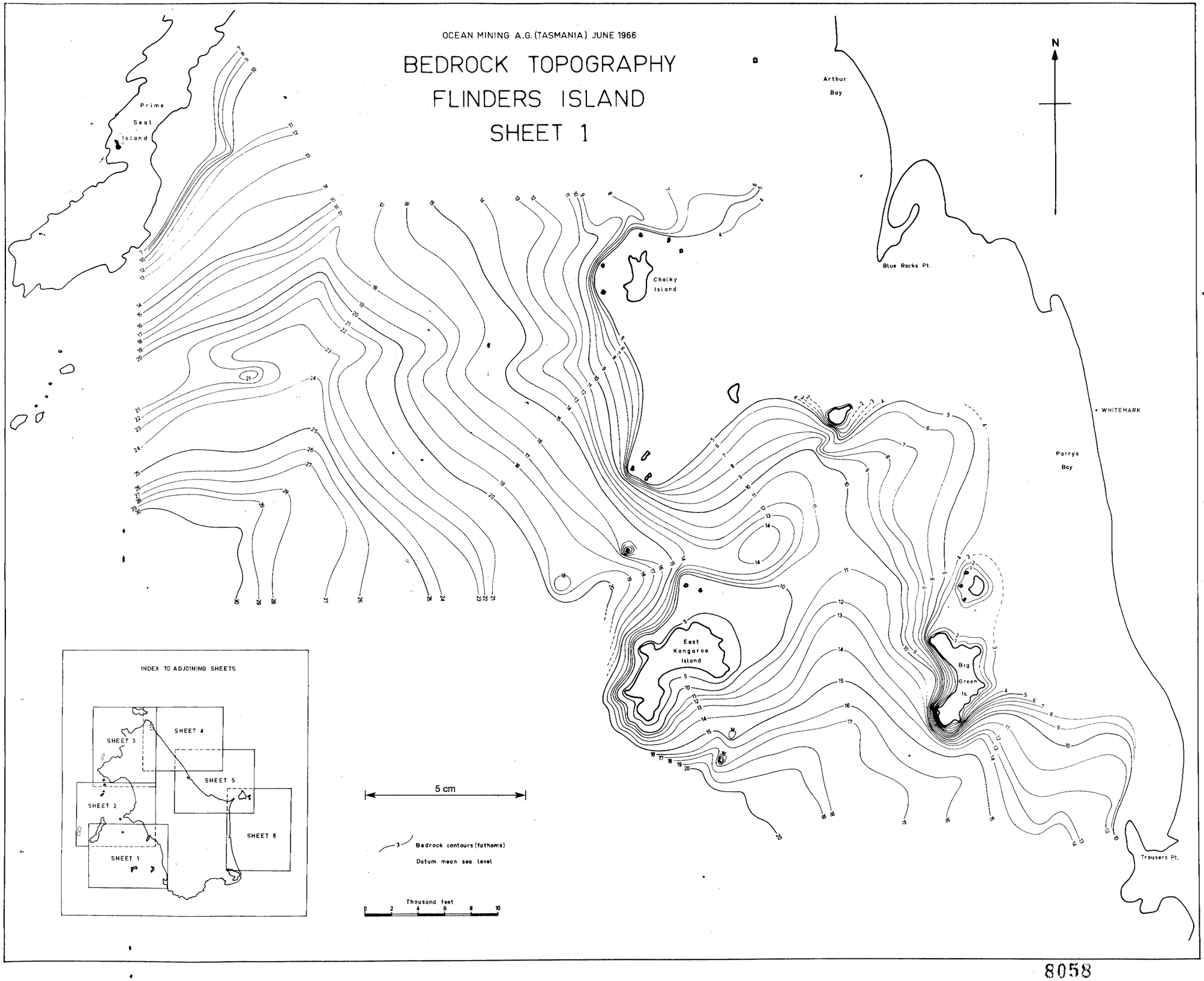
SHEET 5B



81-1621

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 1



INDEX TO ADJOINING SHEETS

5 cm

3 Bedrock contours (fathoms)

Datum mean sea level

Thousand feet

0 2 4 6 8 10

81-1621

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OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 1

N

Prime Seal Island

Arthur Bay

Blue Rocks Pt.

Chalky Island

East Kangaroo Island

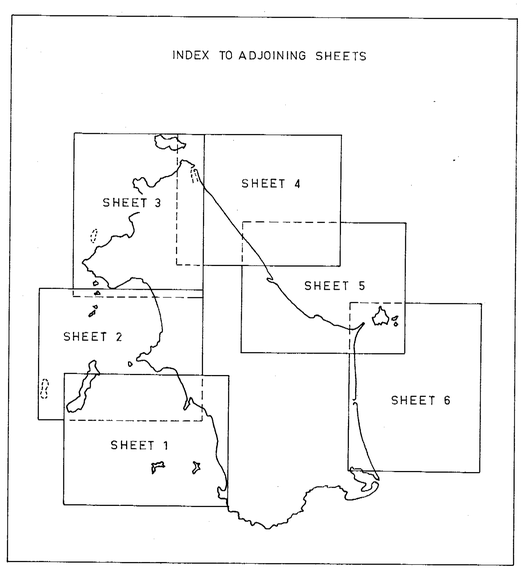
Big Green Is.

WHITEMARK

Parrys Bay

Trousers Pt.

INDEX TO ADJOINING SHEETS



3 Bedrock contours (fathoms)

Datum mean sea level

5 cm

Thousand feet

0 2 4 6 8 10

81-1621

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY FLINDERS ISLAND SHEET 2

5 cm

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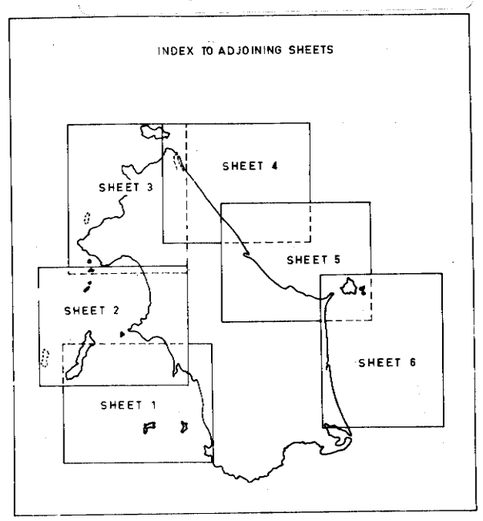


N

Nth. Pasco Is.

Middle Pasco Is.

Sth. Pasco Is.

Marshall Bay

Settlement Pt.

Prime Seal Island

Swires Patch

Arthur Bay

Blue Rocks Pt.

Chalky Island

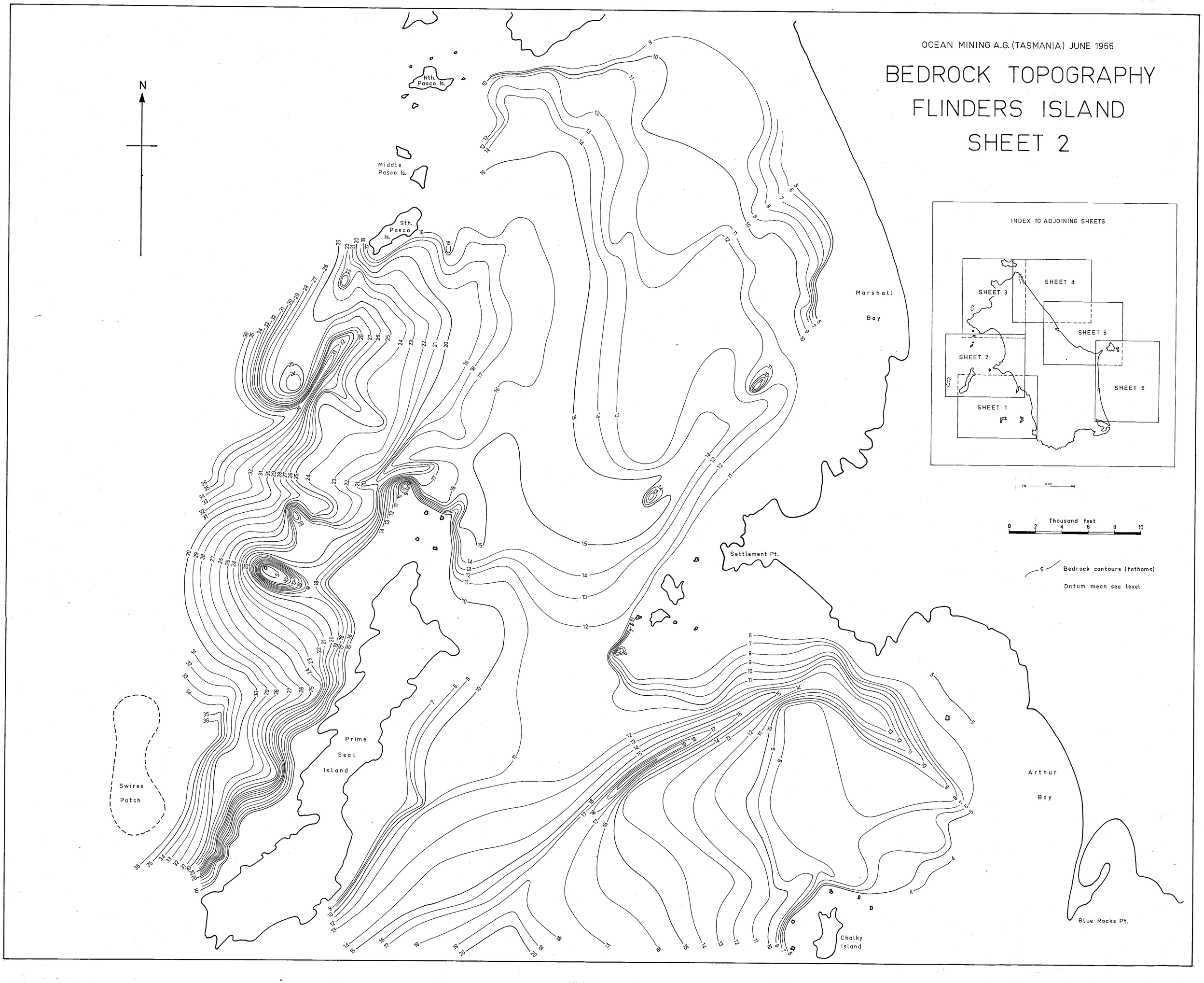
Thousand feet
0 2 4 6 8 10

6 Bedrock contours (fathoms)

Datum mean sea level

(22) 181-1621

8061


OCEAN MINING A.G. (TASMANIA) JUNE 1966
BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 2
N
Nth. Pasco Is.
Middle Pasco Is.
Sth. Pasco Is.
Marshall Bay
Settlement Pt.
Prime Seal Island
Swires Patch
Arthur Bay
Blue Rocks Pt.
Chalky Island
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SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6
Thousand feet
0 2 4 6 8 10
Bedrock contours (fathoms)
Datum mean sea level

2B 2B

SHEET 2B

OCEAN MINING A.G.

BEDROCK TOPOGRAPHY

0 2 4

MILES

5 cm

FLINDERS ISLAND

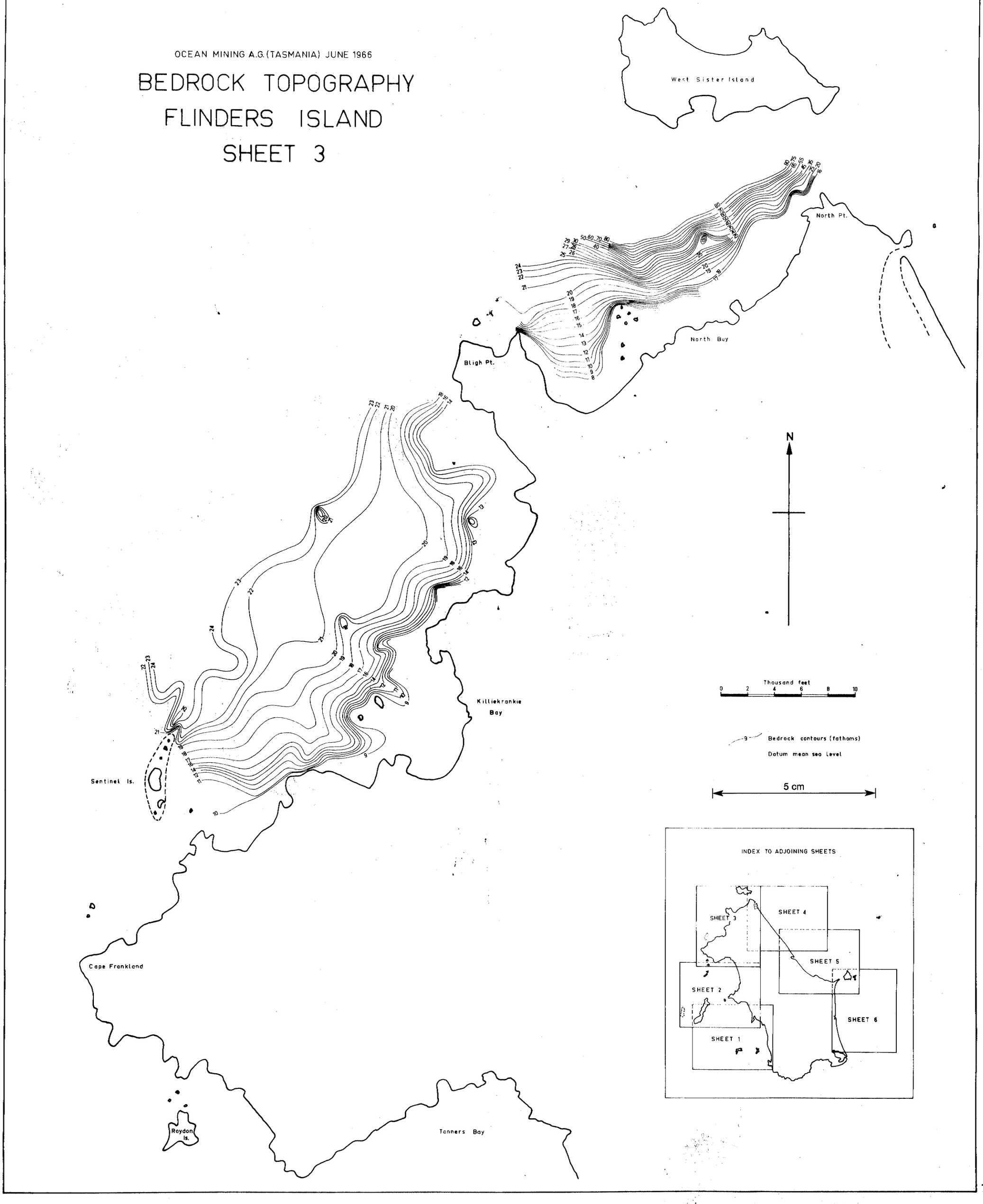
81-1621

(24)

(25) 81-1621

OCEAN MINING A.G.(TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 3



(25) 81-1621

OCEAN MINING A.G.(TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 3

West Sister Island

North Pt.

North Bay

Bligh Pt.

Killiekrankie Bay

Sentinel Is.

Cape Frankland

Roydon Is.

Tanners Bay

N

5 cm

Thousand feet

0 2 4 6 8 10

9 Bedrock contours (fathoms)

Datum mean sea level

INDEX TO ADJOINING SHEETS

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SHEET 2

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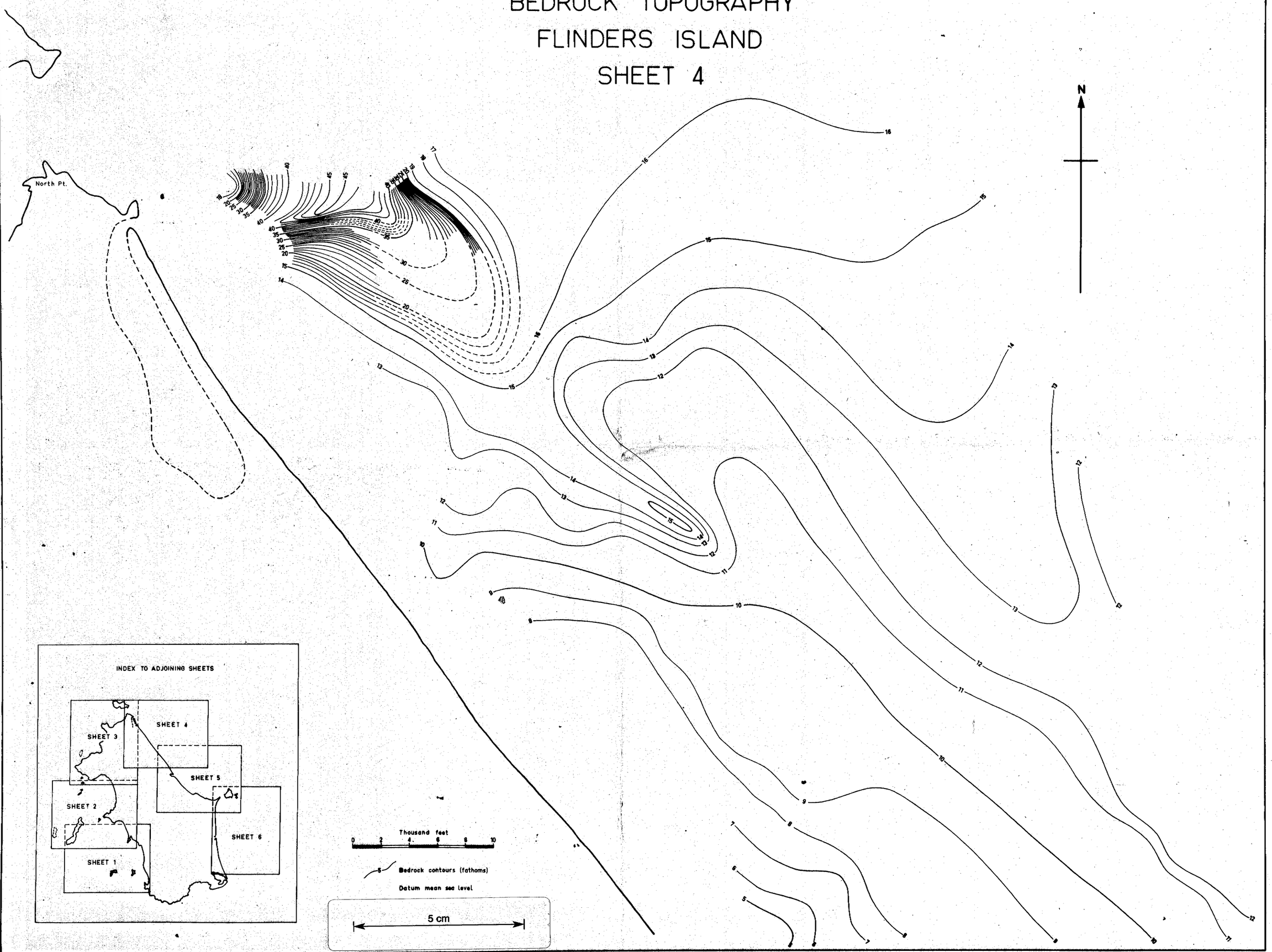
SHEET 5

SHEET 6

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 4



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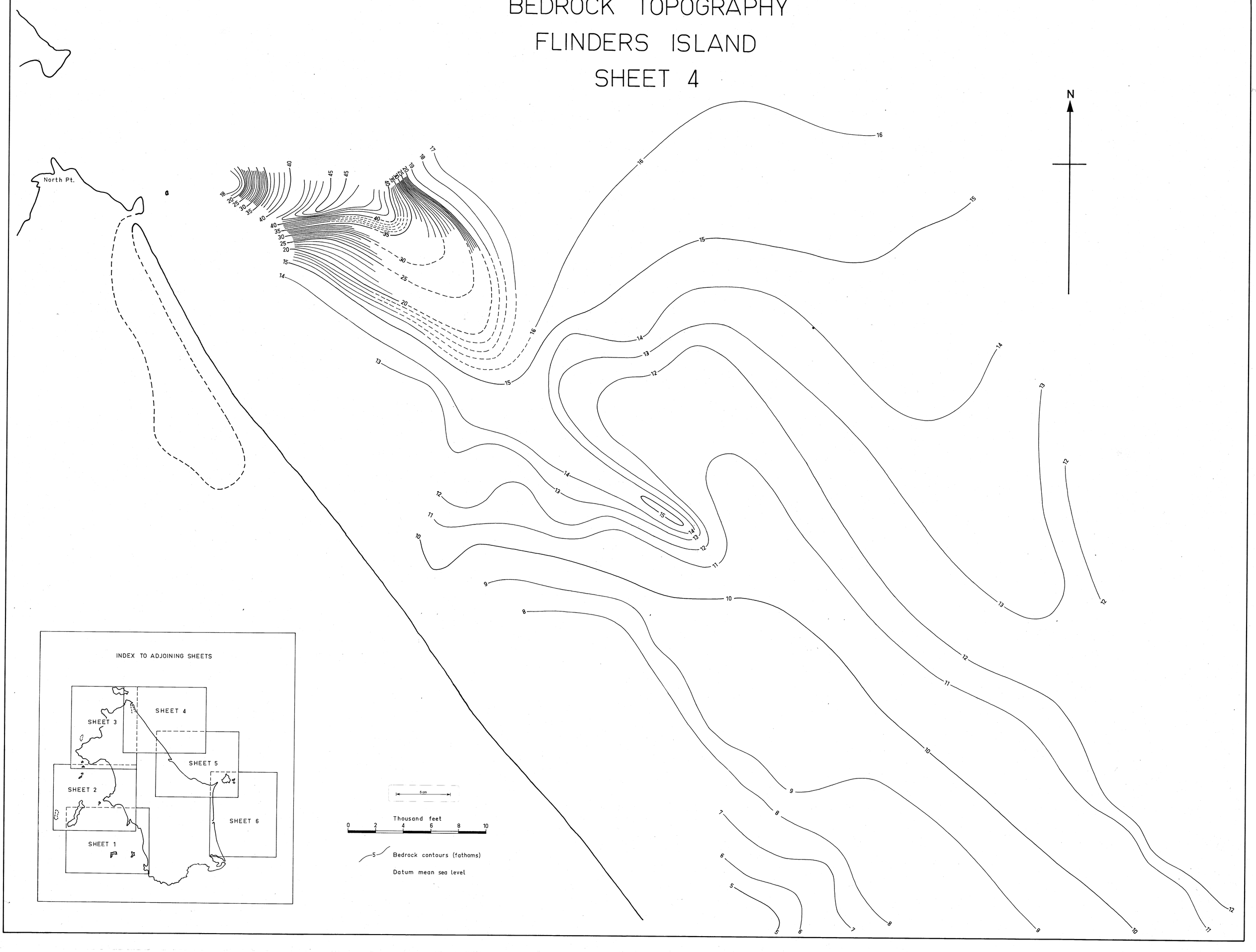
(27)

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 4



1291-18

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 5

N

AMG600600E,
5577400N

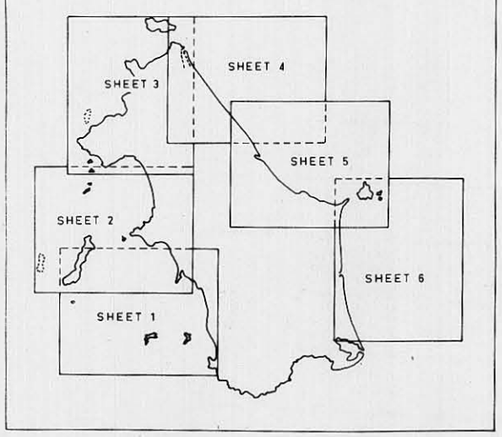
AMG616300E,
5577150N

Babel Island

Cat Is.

Sellar Pt.

INDEX TO ADJOINING SHEETS



Thousand feet
0 2 4 6 8 10

7 Bedrock contours (fathoms)

Datum mean sea level

5 cm

AMG REFERENCE POINTS ADDED

81-1621
29
8068

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 5

N

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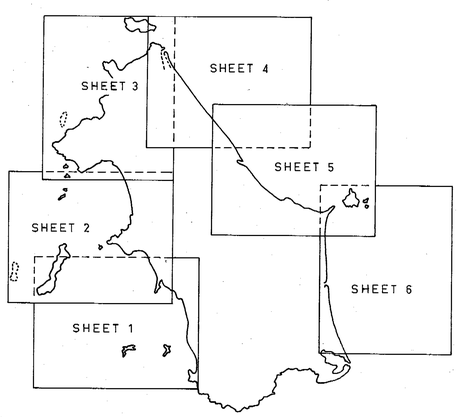

5cm

Thousand feet
0 2 4 6 8 10

7 Bedrock contours (fathoms)

Datum mean sea level

Babel Island

Cat Is.

Sellar Pt.

31-1621

(31) 81-1621

OCEAN MINING A.G.(TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 6

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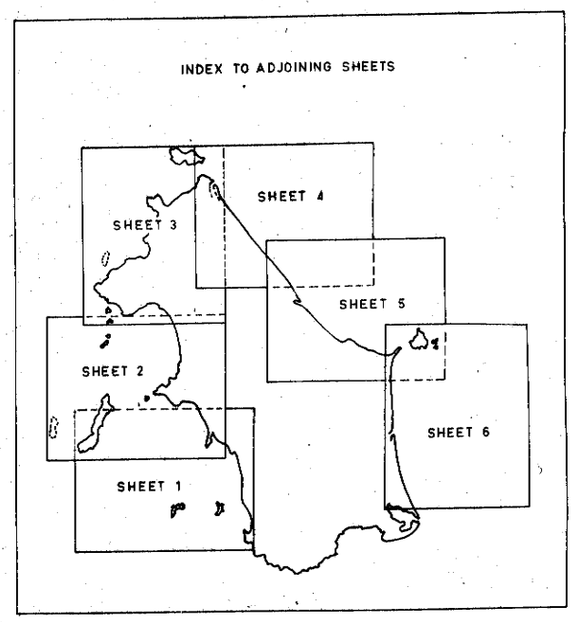

Babel Island

Cat Is.

Sellar Pt.

Cameron's Inlet

N

Thousand feet
0 2 4 6 8 10

6 Bedrock contours (fathoms)

Datum mean sea level

5 cm

(21) 81-1621

OCEAN MINING A.G. (TASMANIA) JUNE 1966

BEDROCK TOPOGRAPHY
FLINDERS ISLAND
SHEET 6

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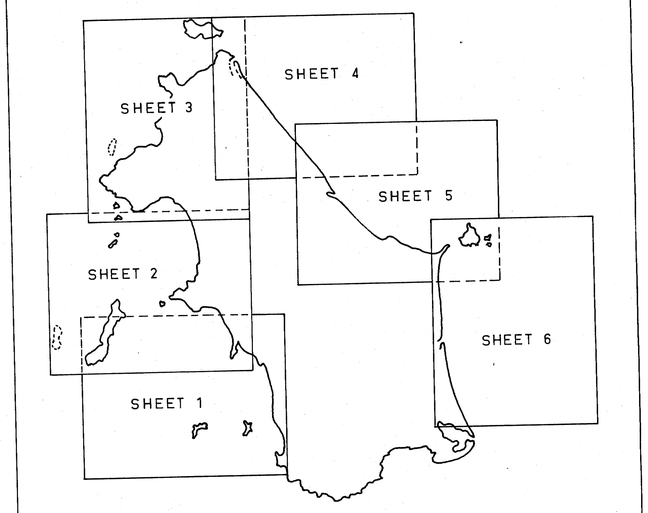


Babel Island

Cat Is.

Sellar Pt.

Cameron's Inlet

N

5 cm

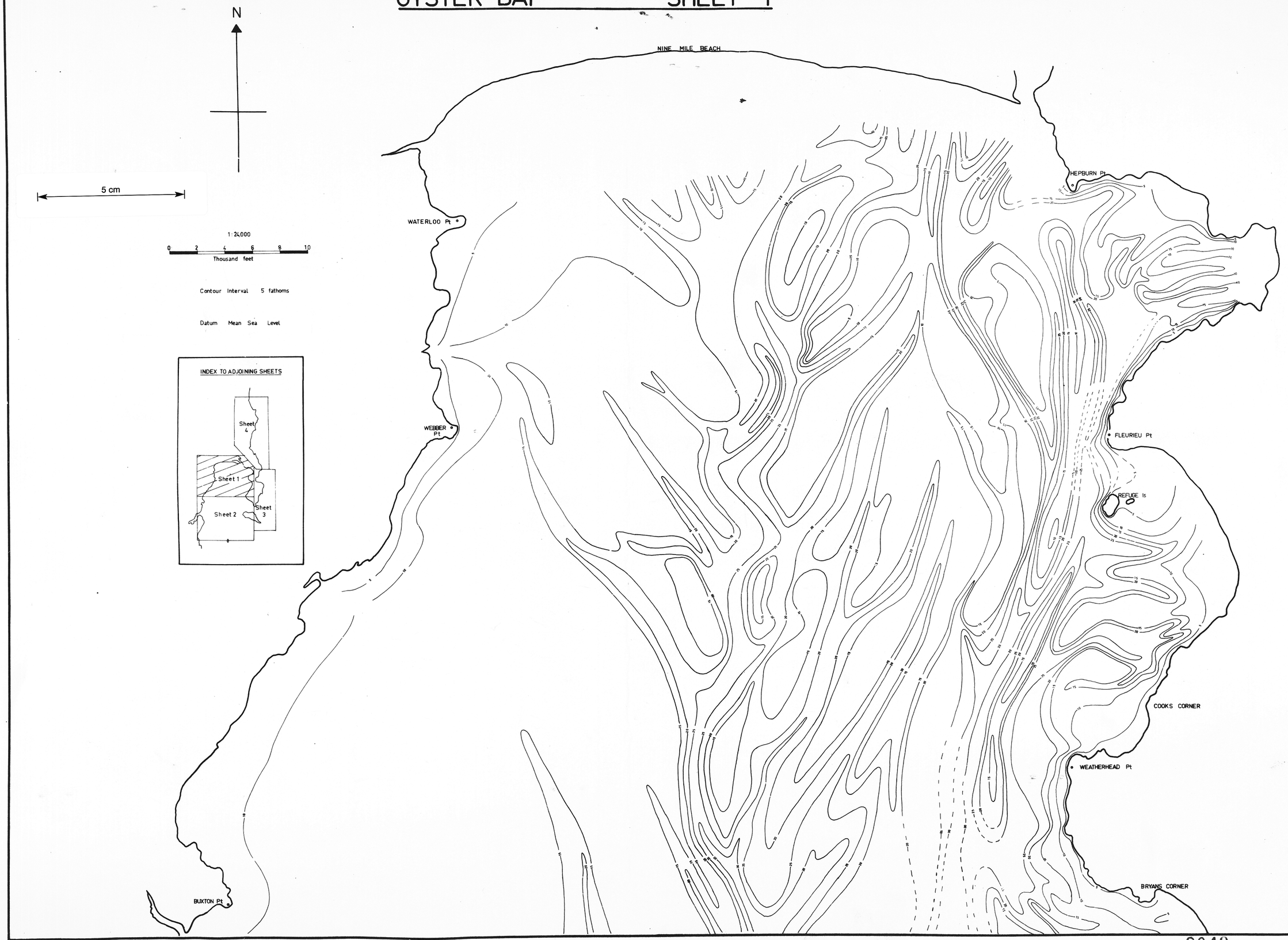
Thousand feet
0 2 4 6 8 10

6 Bedrock contours (fathoms)

Datum mean sea level

BEDROCK TOPOGRAPHY MAP 4.

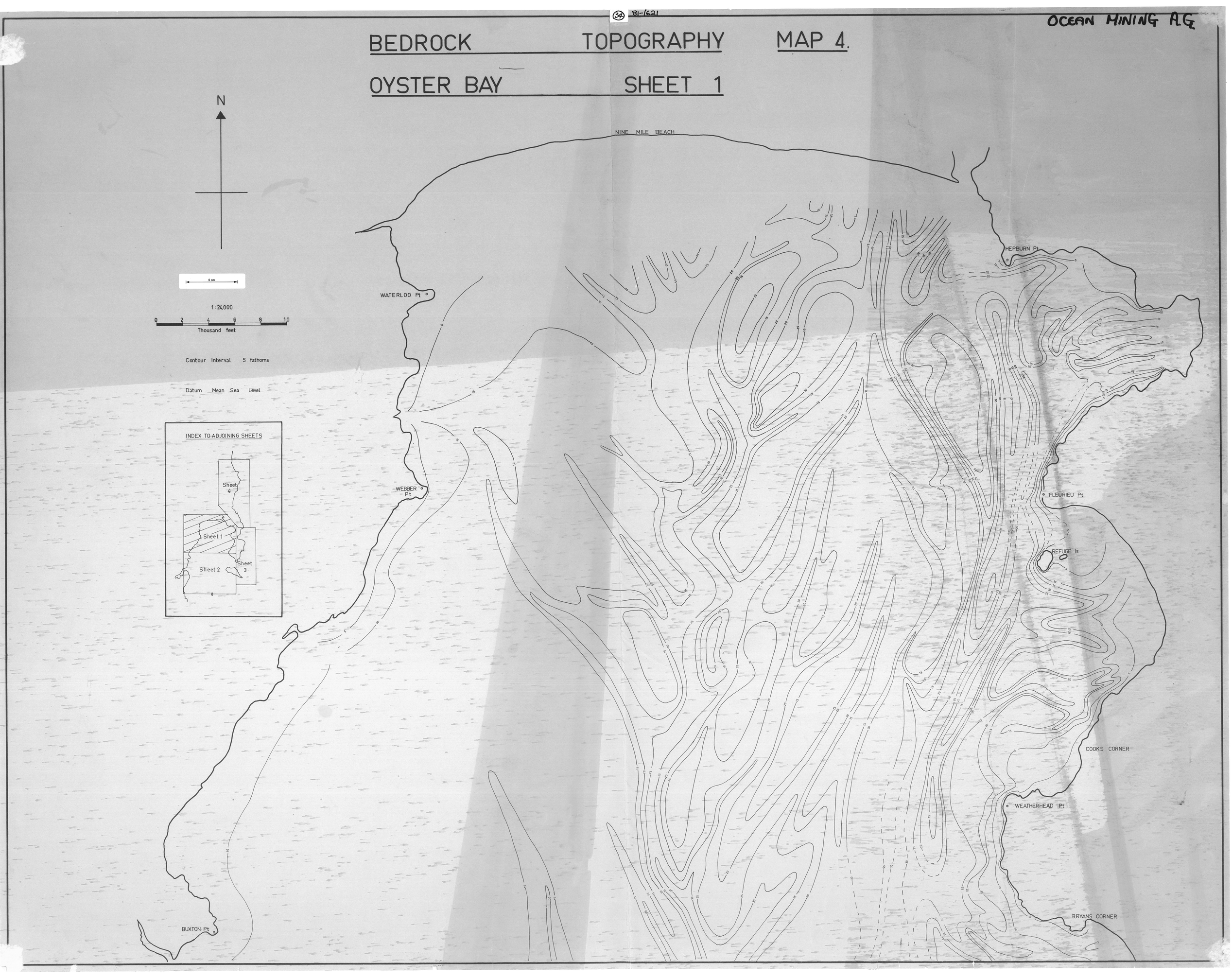
OYSTER BAY SHEET 1



8049

81-1621

33



(34) 81-1621
OCEAN MINING A.G.
BEDROCK TOPOGRAPHY MAP 4.
OYSTER BAY SHEET 1
N
5 cm
1:24,000
0 2 4 6 8 10
Thousand feet
Contour Interval 5 fathoms
Datum Mean Sea Level
INDEX TO ADJOINING SHEETS
Sheet 4
Sheet 1
Sheet 2
Sheet 3
NINE MILE BEACH
WATERLOO Pt
WEBBER Pt
HEPBURN Pt
FLEURIEU Pt
REFUGE Is
COOKS CORNER
WEATHERHEAD Pt
BRYANS CORNER
BUXTON Pt

MAP 5 BEDROCK TOPOGRAPHY
OYSTER BAY SHEET 2

N

5 cm

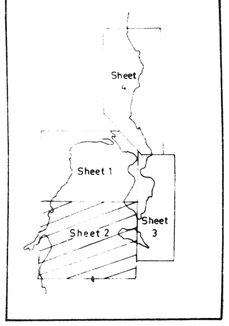
1 24000

0 2 4 6 8 10
Thousand feet

Contour Interval 5 fathoms

Datum Mean Sea Level

INDEX TO ADJOINING SHEETS



BUXTON Pt

LITTLE SWANPORT

Pt BAILLY

COOKS CORNER

WEATHERHEAD Pt

BRYANS CORNER

SANDSTONE BLUFF

SCHOUTEN ISLAND

HEN & CHICKEN BAY

ISLE des PHOQUES

81-1621

8050

OCEAN MINING A.G.

MAP 5. BEDROCK TOPOGRAPHY

OYSTER BAY SHEET 2

N

BUXTON Pt

COOKS CORNER

WEATHERHEAD Pt

BRYANS CORNER

5 cm

1 24000

0 2 4 6 8 10

Thousand feet

Contour Interval 5 fathoms

Datum Mean Sea Level

LITTLE SWANPORT

SANDSTONE BLUFF

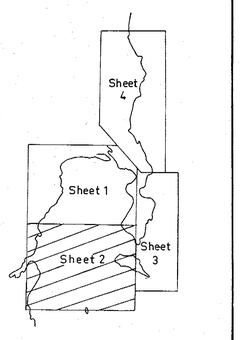
SCHOUTEN ISLAND

HEN & CHICKEN BAY

Pt BAILLY

ISLE des PHOQUES

INDEX TO ADJOINING SHEETS

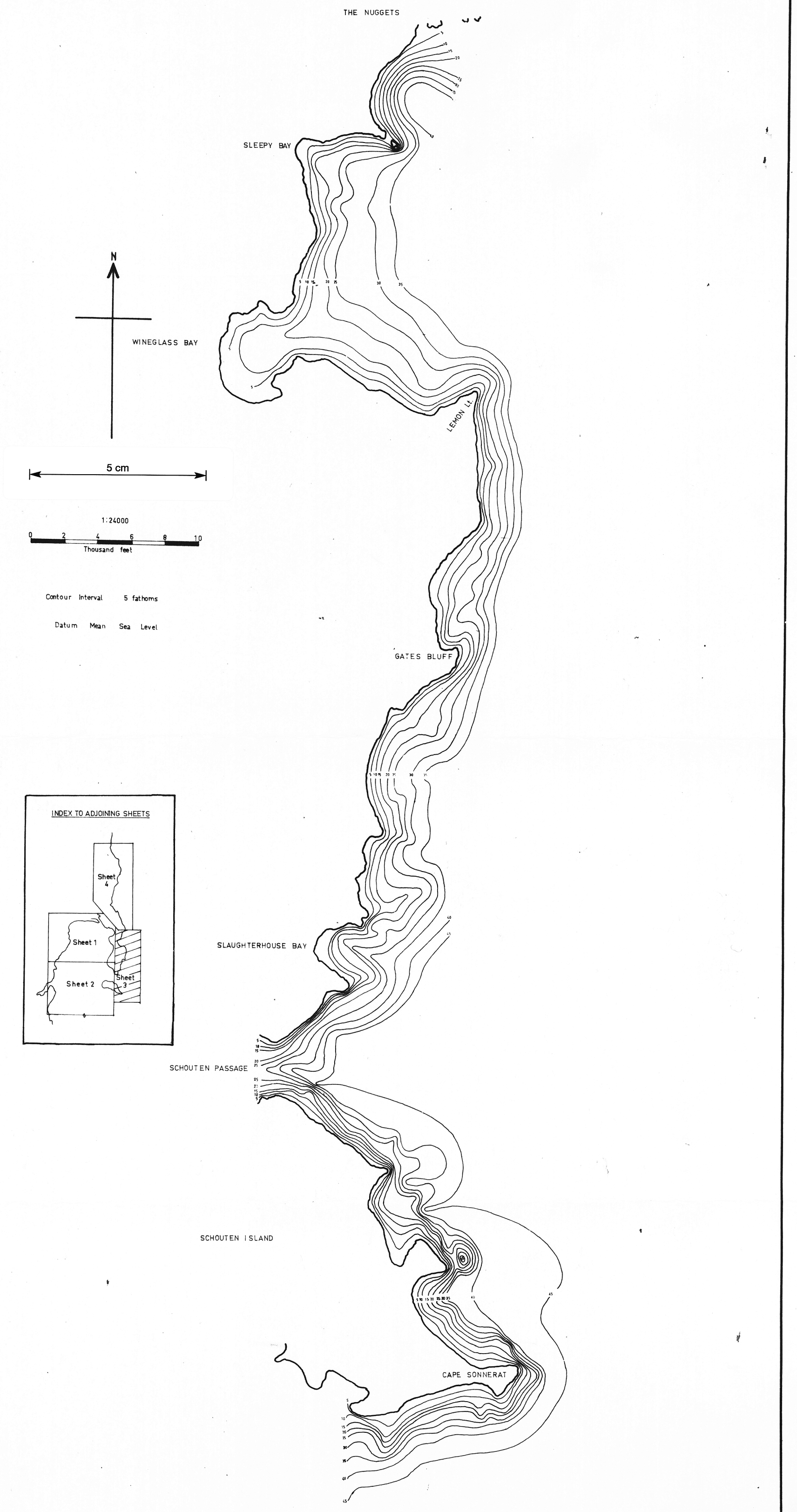


(37) 81-1621

MAP 6.

BEDROCK TOPOGRAPHY

OYSTER BAY SHEET 3



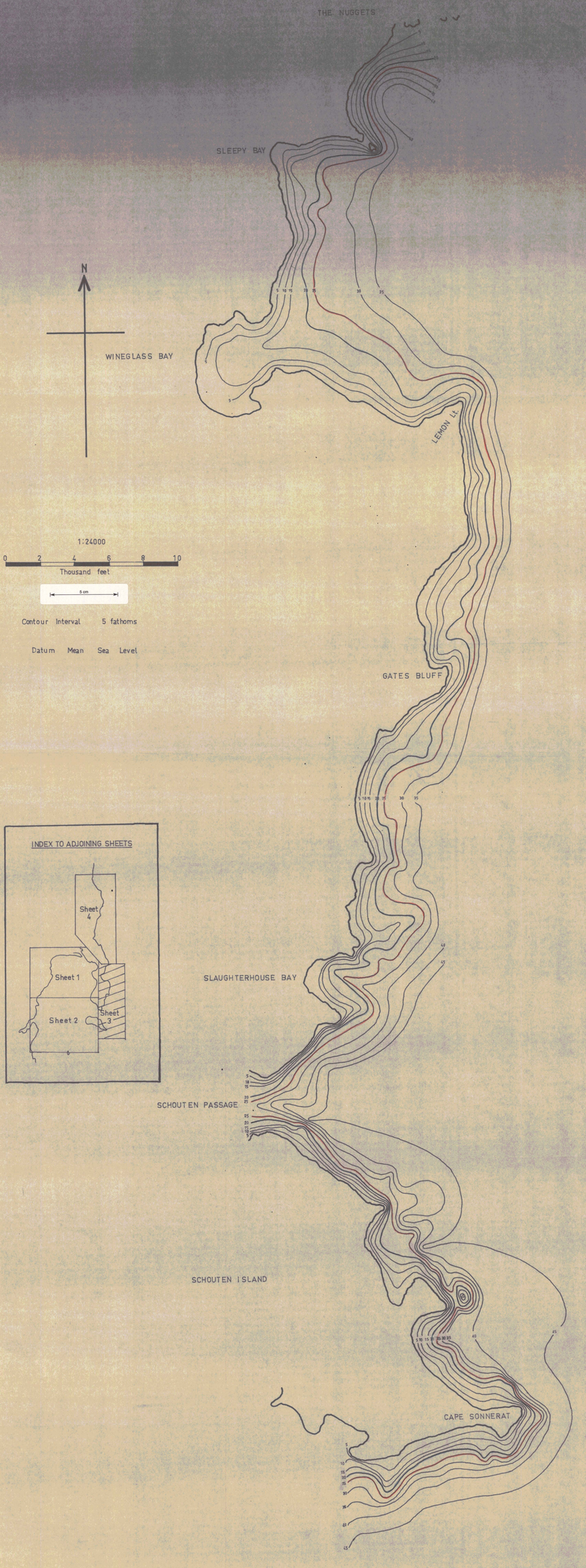
8053

(38) 81-1621

MAP 6.

BEDROCK TOPOGRAPHY

OYSTER BAY SHEET 3



8102

8102

6B



OYSTER BAY

OCEAN MINING A.G.

BEDROCK TOPOGRAPHY

0 2 4

MILES

5 cm

SHEET 3B
MAP 6

21-1621


OYSTER BAY
OCEAN MINING A.G.
BEDROCK TOPOGRAPHY
0 2 4
MILES
5 cm
SHEET 3B
MAP 6
6(2)
81-1621
40

(41) 81-1621

BEDROCK TOPOGRAPHY MAP 7.
OYSTER BAY - SHEET 4.

AMG REFERENCE POINTS ADDED

AMG6051OOE,
5367600N

DIAMOND IS.

GOVERNOR IS.

BICHENO

N

1:24,000.

0 2 4 6 8 10

Thousand feet.

5 cm

5 Bedrock contours (fathoms) 5

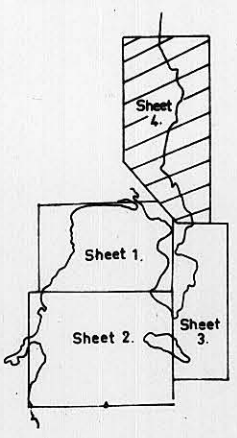
BUTLERS Pt.

FRIENDLY BEACHES

AMG6107OOE,
5337800N

THE NUGGETS.

INDEX TO ADJOINING SHEETS.



8055

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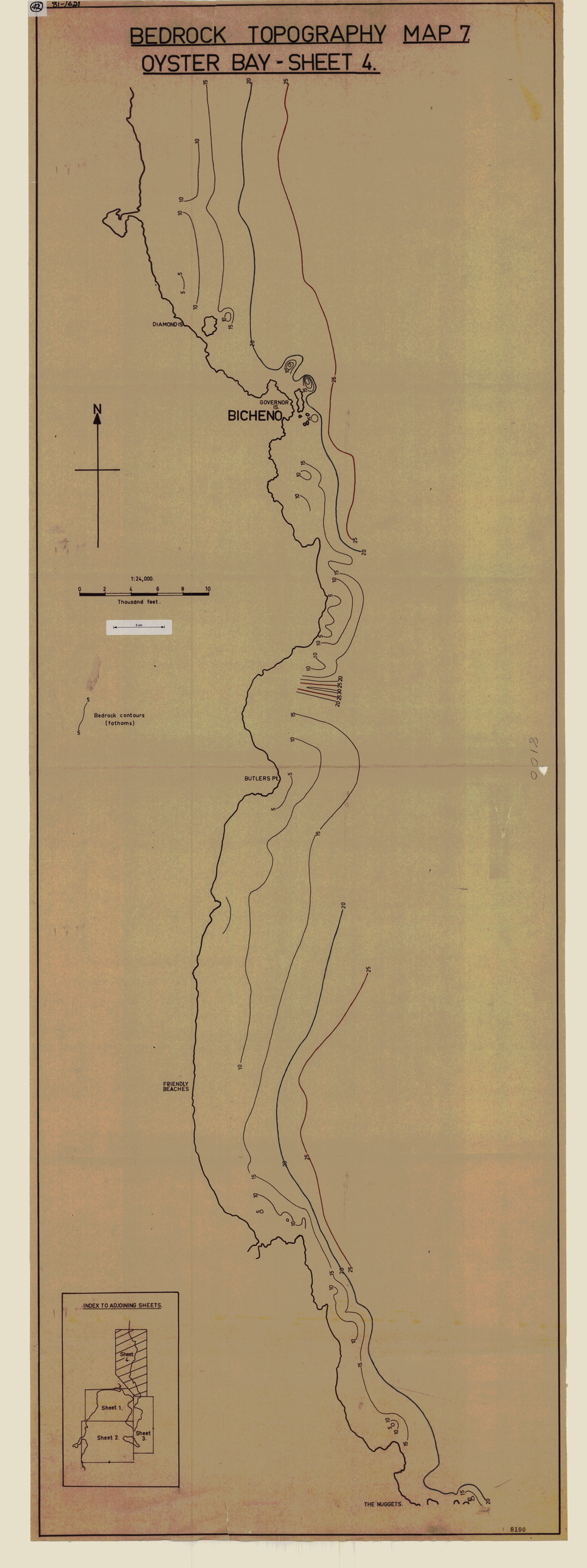
BEDROCK TOPOGRAPHY MAP 7.
OYSTER BAY - SHEET 4.



8018

8100

OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS

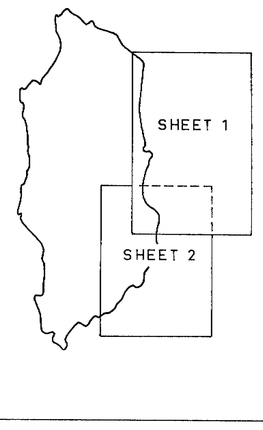
(upper layer)

KING ISLAND

SHEET 1

N

INDEX TO ADJOINING SHEETS



Thousand feet
0 2 4 6 8 10

5 cm

Datum sea floor

Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Lavinia Pt

Cowper Pt

Fraser Bluff

81-1621

43

OCEAN MINING A.G.

SEDIMENT DISTRIBUTION AND THICKNESS 1A 1A

(UPPER LAYER)

SHEET 1A

5 cm



81-621

OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS

(upper & lower layers)

KING ISLAND

SHEET 1

Lavinia Pt.

Cowper Pt.

Fraser Bluff

N

Thousand feet

0 2 4 6 8 10

5 cm

INDEX TO ADJOINING SHEETS

SHEET 1

SHEET 2

Datum sea floor

Bedrock

5 Sediment isopachs (fathoms)

Raydist beacon stations

81-1621

8116

1.4 1A

OCEAN MINING AG

SEDIMENT DISTRIBUTION AND THICKNESS

(UPPER AND LOWER LAYER)

0 2 4

MILES

5 cm

SHEET 1A



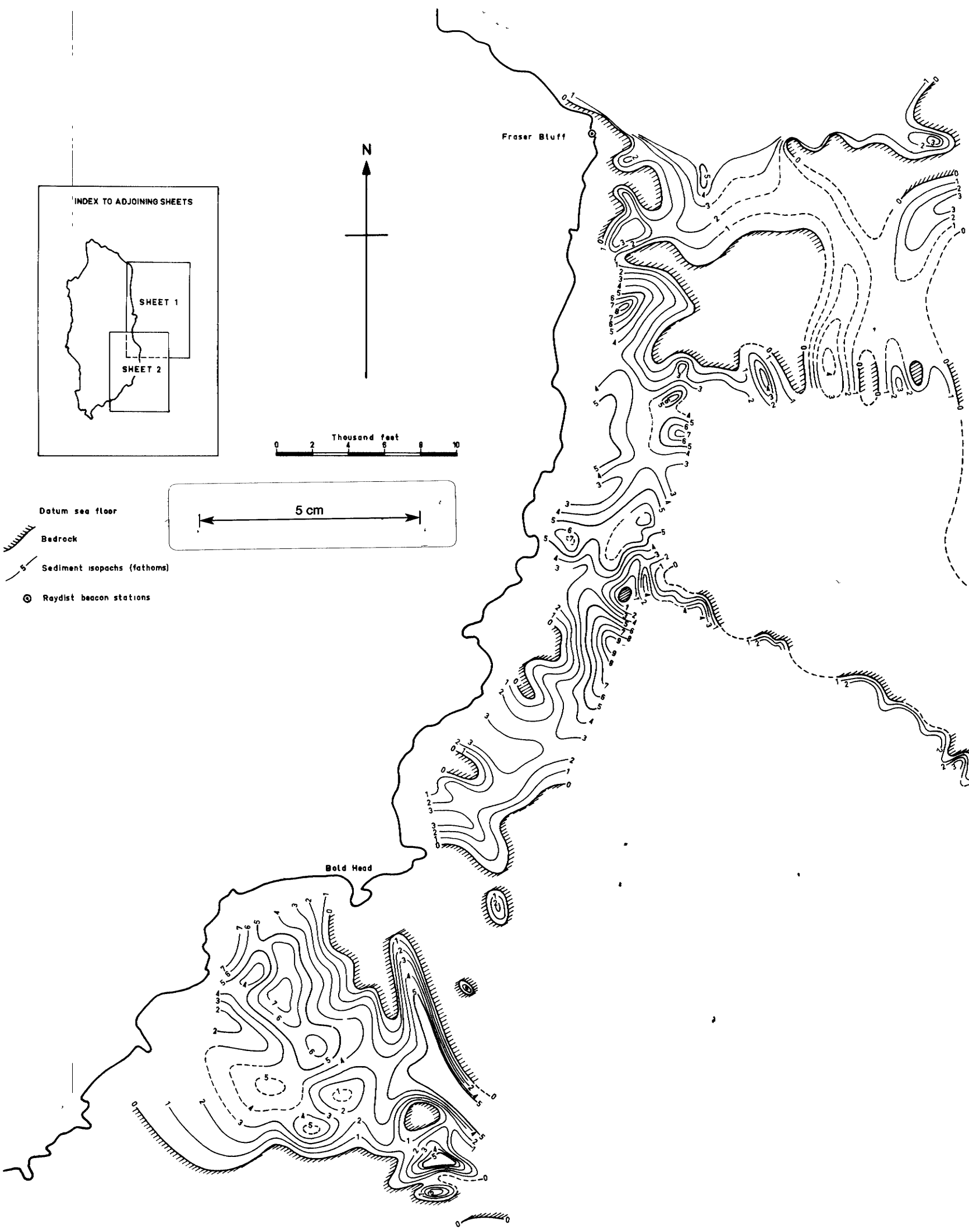
81-1621

(46)

(47) 81- 1621

OCEAN MINING A G (TASMANIA) JUNE 1966

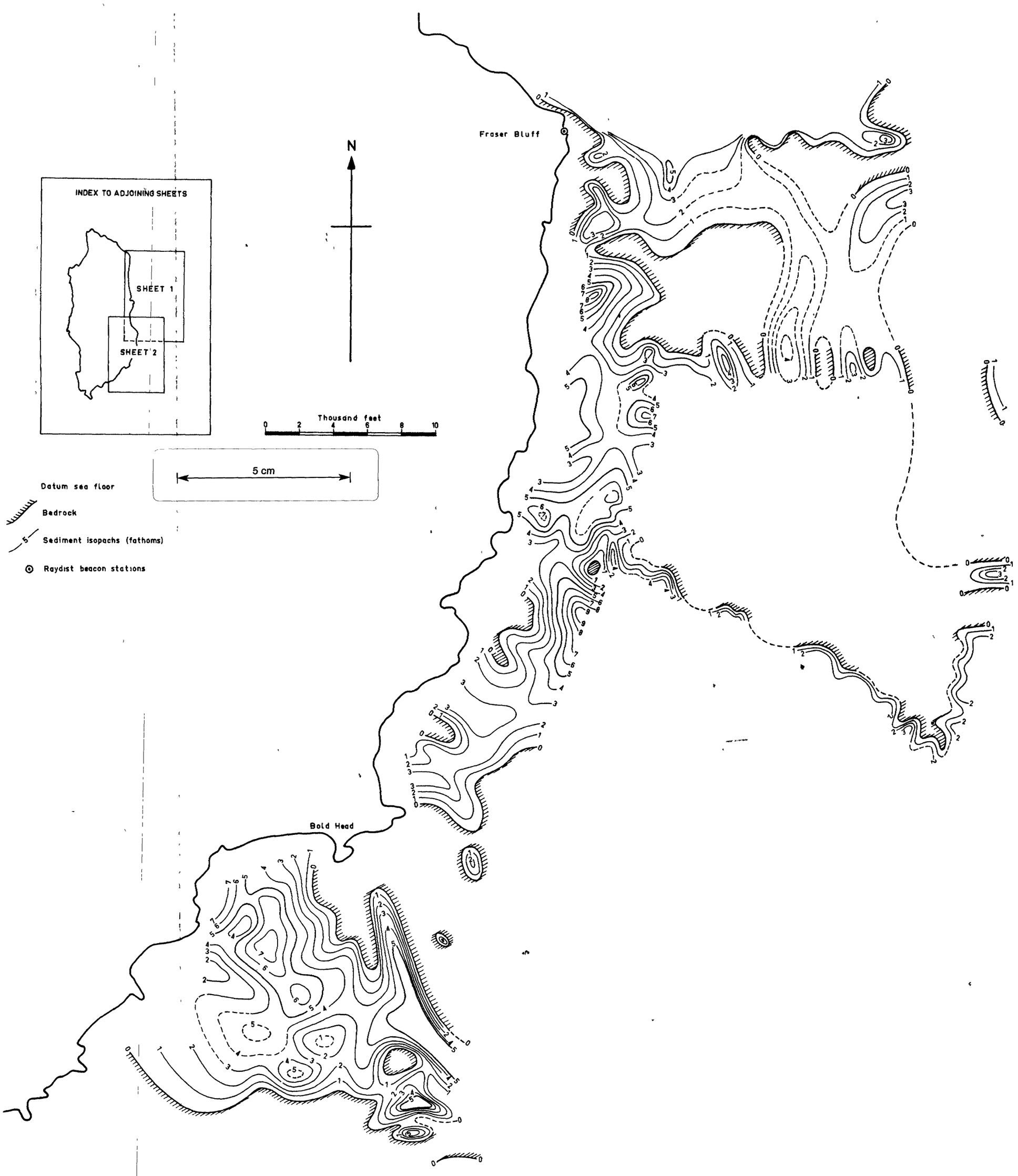
SEDIMENT DISTRIBUTION and THICKNESS
KING ISLAND
SHEET 2



(48) 81-1621

OCEAN MINING A G. (TASMANIA) JUNE 1966

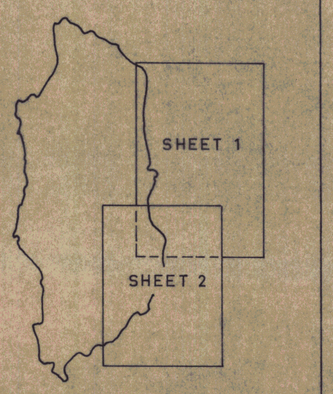
SEDIMENT DISTRIBUTION and THICKNESS
KING ISLAND
SHEET 2



OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS
KING ISLAND
SHEET 2

INDEX TO ADJOINING SHEETS



N

5 cm

Thousand feet
0 2 4 6 8 10

Datum sea floor

Bedrock

5 Sediment isopachs (fathoms)

Raydist beacon stations

Fraser Bluff

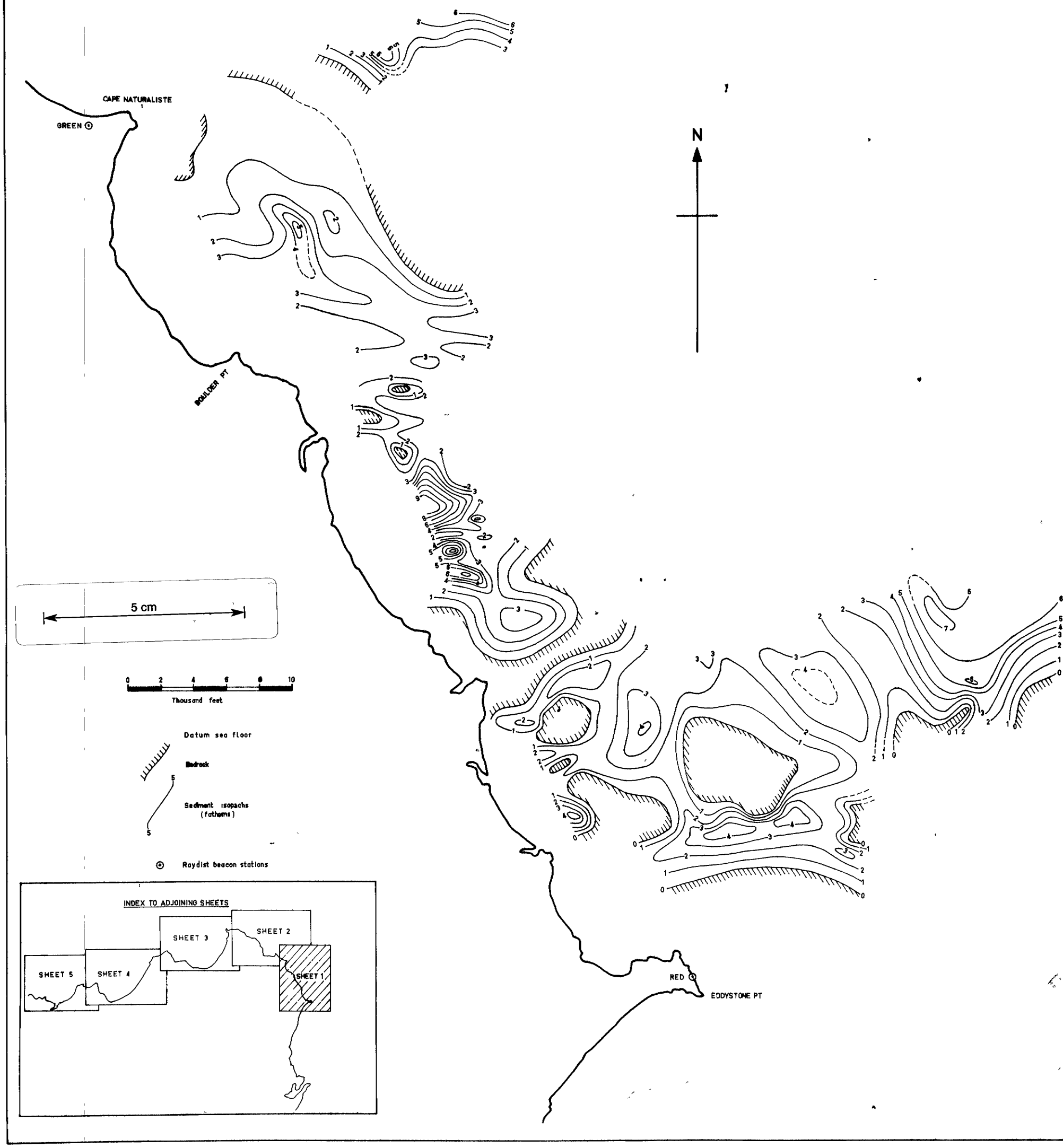
Bold Head

(0) 81-1621

(50) 81-1621

OCEAN MINING A G (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS
NORTH EAST COAST TASMANIA
SHEET 1

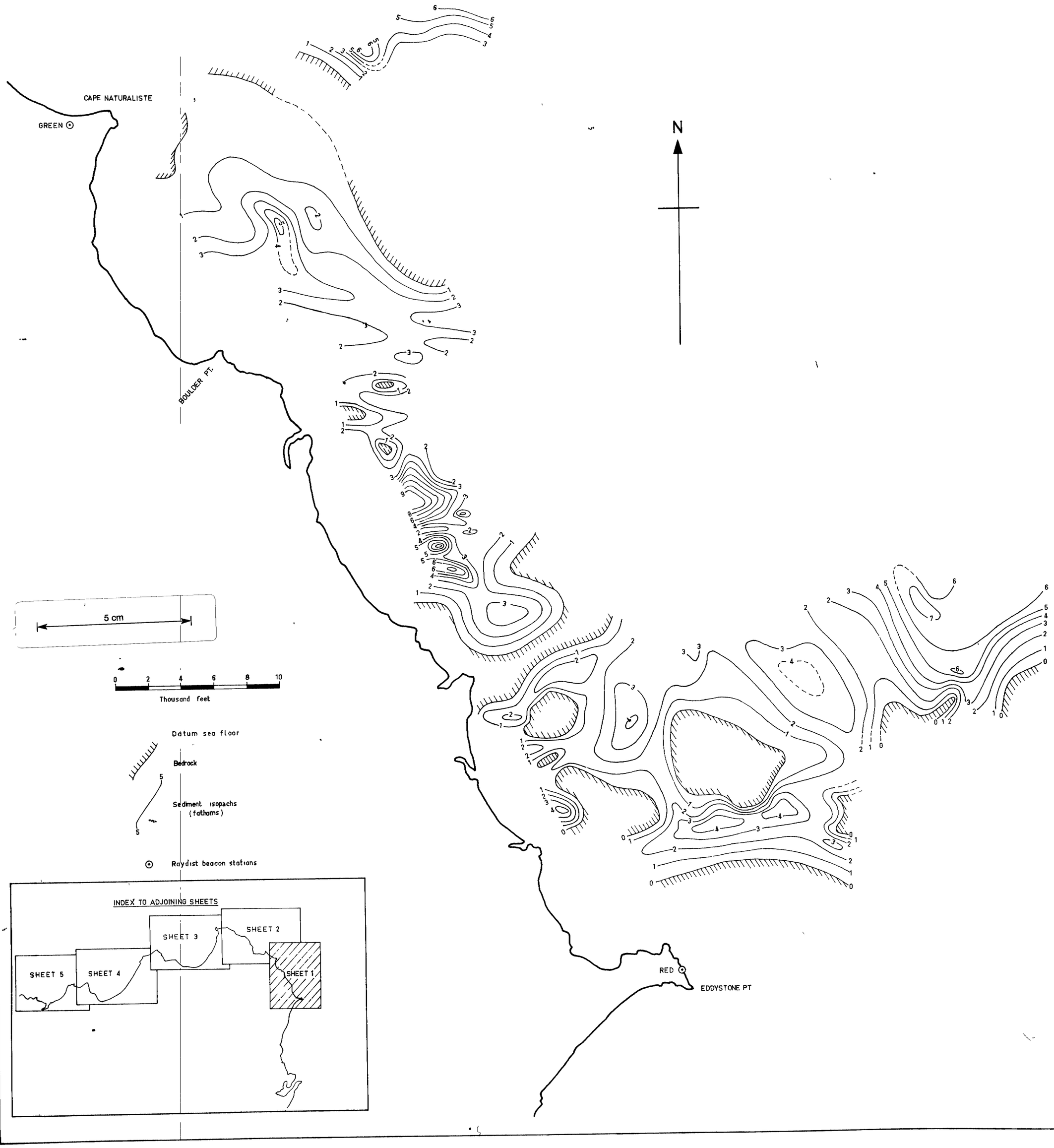


8087

(51) 81-1621

OCEAN MINING A G (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS
NORTH EAST COAST TASMANIA
SHEET 1



OCEAN MINING A.G. (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS
NORTH EAST COAST TASMANIA
SHEET 1

CAPE NATURALISTE

GREEN

BOULDER PT.

RED

EDDYSTONE PT.

N

5 cm

0 2 4 6 8 10

Thousand feet

Datum sea floor

Bedrock

5

5

Sediment isopachs
(fathoms)

Raydist beacon stations

INDEX TO ADJOINING SHEETS

SHEET 1.

SHEET 2

SHEET 3

SHEET 4

SHEET 5

8-1621

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OCEAN MINING A G (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS
NORTH EAST COAST TASMANIA
SHEET. 2.

N

SWAN ISLAND

Vinegar Hill

Tree Point

Little Mussel Roe River

Mussel Roe River

Cape Naturaliste

INDEX TO ADJOINING SHEETS

SHEET 5 SHEET 4 SHEET 3 SHEET 2 SHEET 1

Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Datum sea floor

0 2 4 6 8 10
Thousand feet

5 cm

(53) 81-1621

81-1621

OCEAN MINING A G (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS
NORTH EAST COAST TASMANIA
SHEET. 2.

N

SWAN ISLAND

Vinegar Hill

Tree Point

Little Mussel Roe River

Mussel Roe River

Cape Naturaliste

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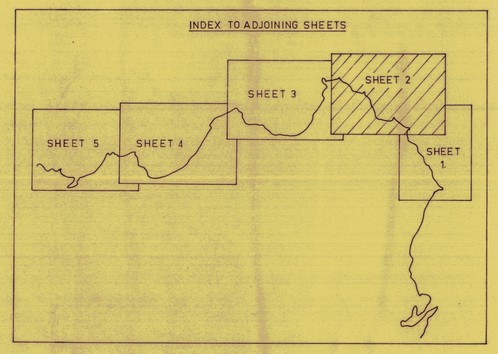

Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Datum sea floor

0 2 4 6 8 10
Thousand feet

5 cm

8090

OCEAN MINING A G (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS
NORTH EAST COAST TASMANIA
SHEET 3

5 cm

N

Cape Portland

Vinegar Hill

Waterhouse Pt

Tomahawk Pt

Ringarooma Bay

Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Datum sea floor

Thousand feet
0 2 4 6 8 10

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SHEET 5 | SHEET 4 | SHEET 3 | SHEET 2 | SHEET 1

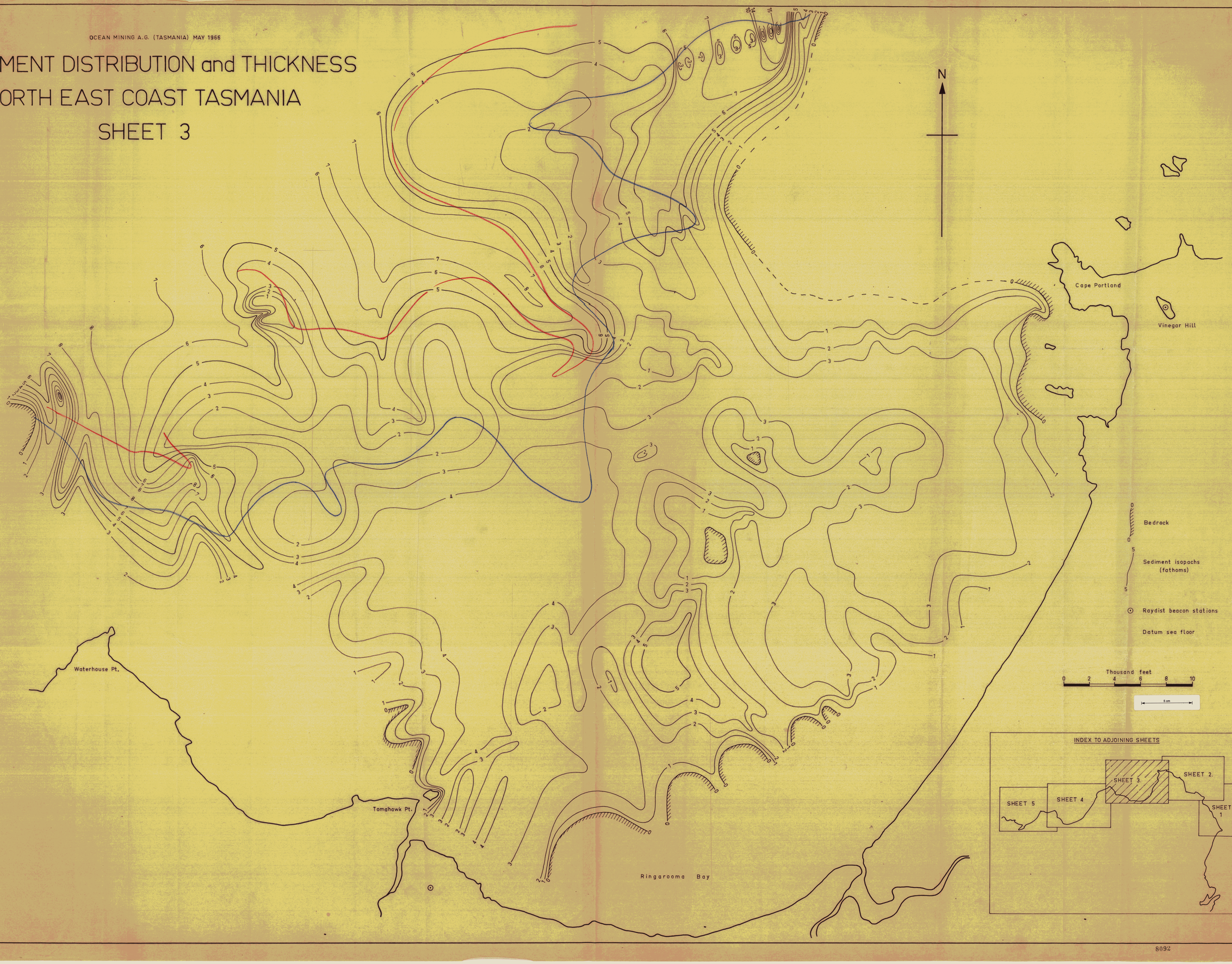
81-1621

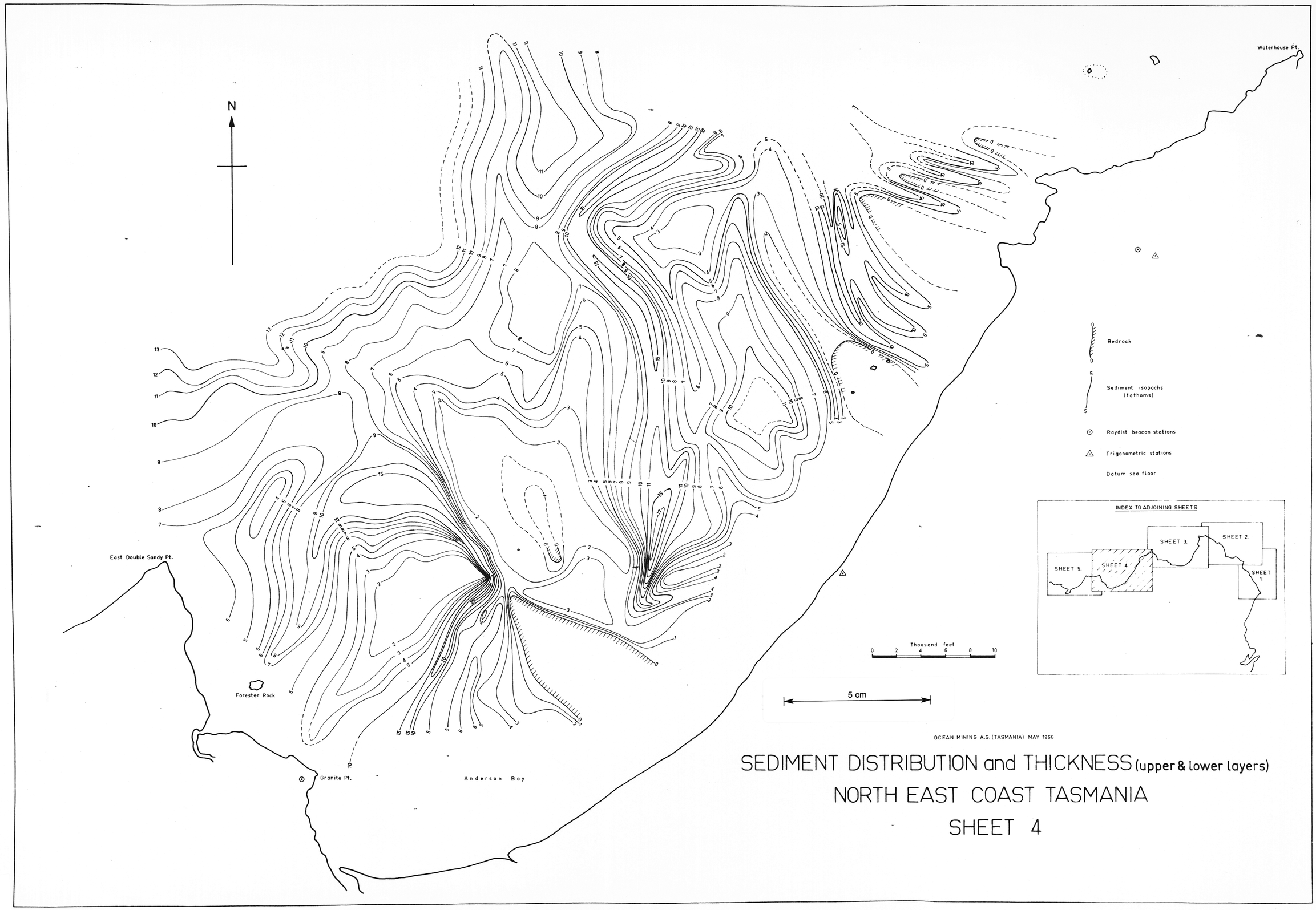
55

81-16.21

OCEAN MINING A.G. (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS
NORTH EAST COAST TASMANIA
SHEET 3





OCEAN MINING A.G. (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS (upper & lower layers)
NORTH EAST COAST TASMANIA
SHEET 4

81-1621
57

81-1621

N

Waterhouse Pt.

East Double Sandy Pt.

Forester Rock

Granite Pt.

Anderson Bay

Bedrock

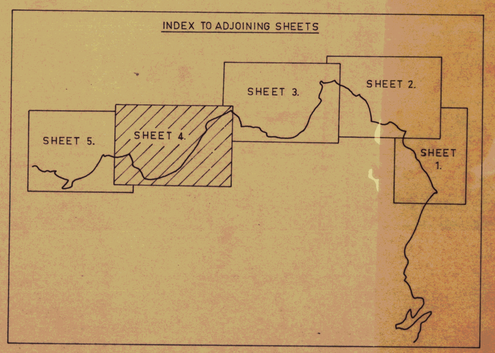
Sediment isopachs (fathoms)

Raydist beacon stations

Trigonometric stations

Datum sea floor

INDEX TO ADJOINING SHEETS



Thousand feet
0 2 4 6 8 10

5 cm

OCEAN MINING A.G. (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS (upper & lower layers)
NORTH EAST COAST TASMANIA
SHEET 4

AMG 536100E
5480700N

Waterhouse Pt.

N

AMG 528900E
5467700N

East Double Sandy Pt.

Forester Rock

Granite Pt.

Anderson Bay

Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Trigonometric stations

Datum sea floor

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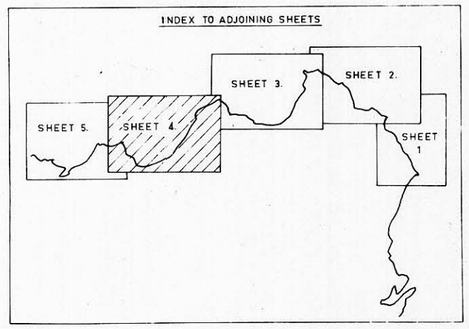


Thousand feet
0 2 4 6 8 10

5 cm

OCEAN MINING A.G. (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS (upper layer)
NORTH EAST COAST TASMANIA
SHEET 4

AMG REFERENCE POINTS ADDED

81-1621

(5)

81-1621

N

Waterhouse Pt

East Double Sandy Pt

Forester Rock

Granite Pt

Anderson Bay

Bedrock

Sediment isopachs (fathoms)

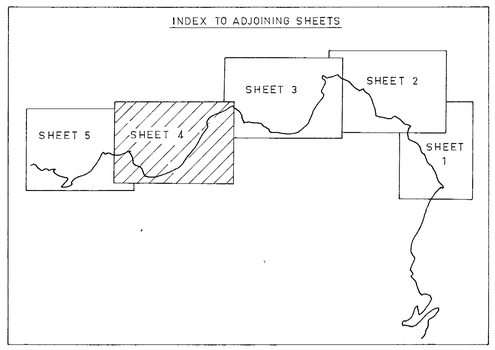
Raydist beacon stations

Trigonometric stations

Datum sea floor

Thousand feet
0 2 4 6 8 10

INDEX TO ADJOINING SHEETS



OCEAN MINING A G (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS (upper layer)
NORTH EAST COAST TASMANIA
SHEET 4

5cm

OCEAN MINING AG

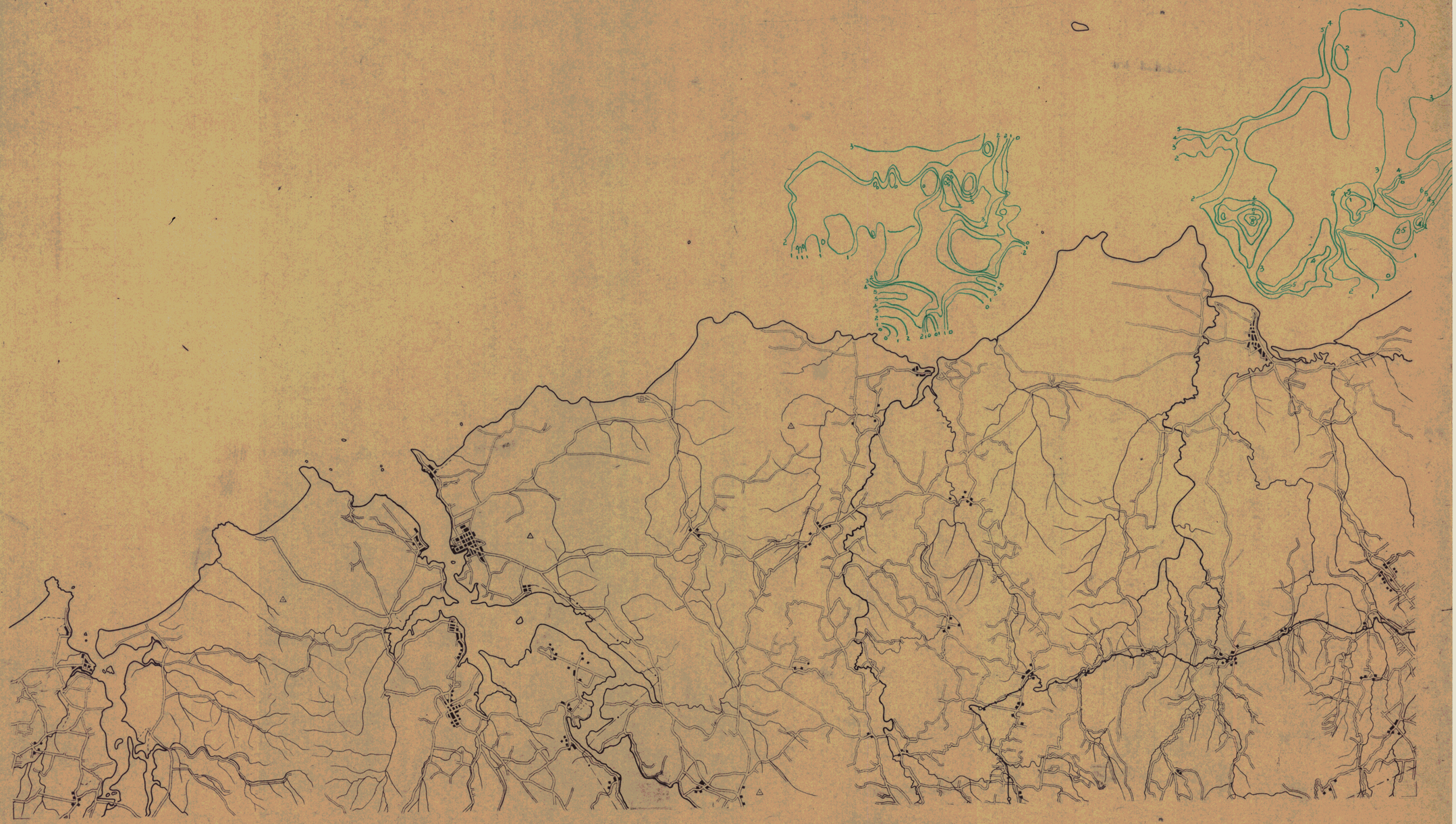
SEDIMENT DISTRIBUTION AND THICKNESS

N. E. TASMANIA

0 2 4

SHEET 4A

5 cm



81-1621

(51)

4B 4E

OCEAN MINING AG

SEDIMENT DISTRIBUTION & THICKNESS

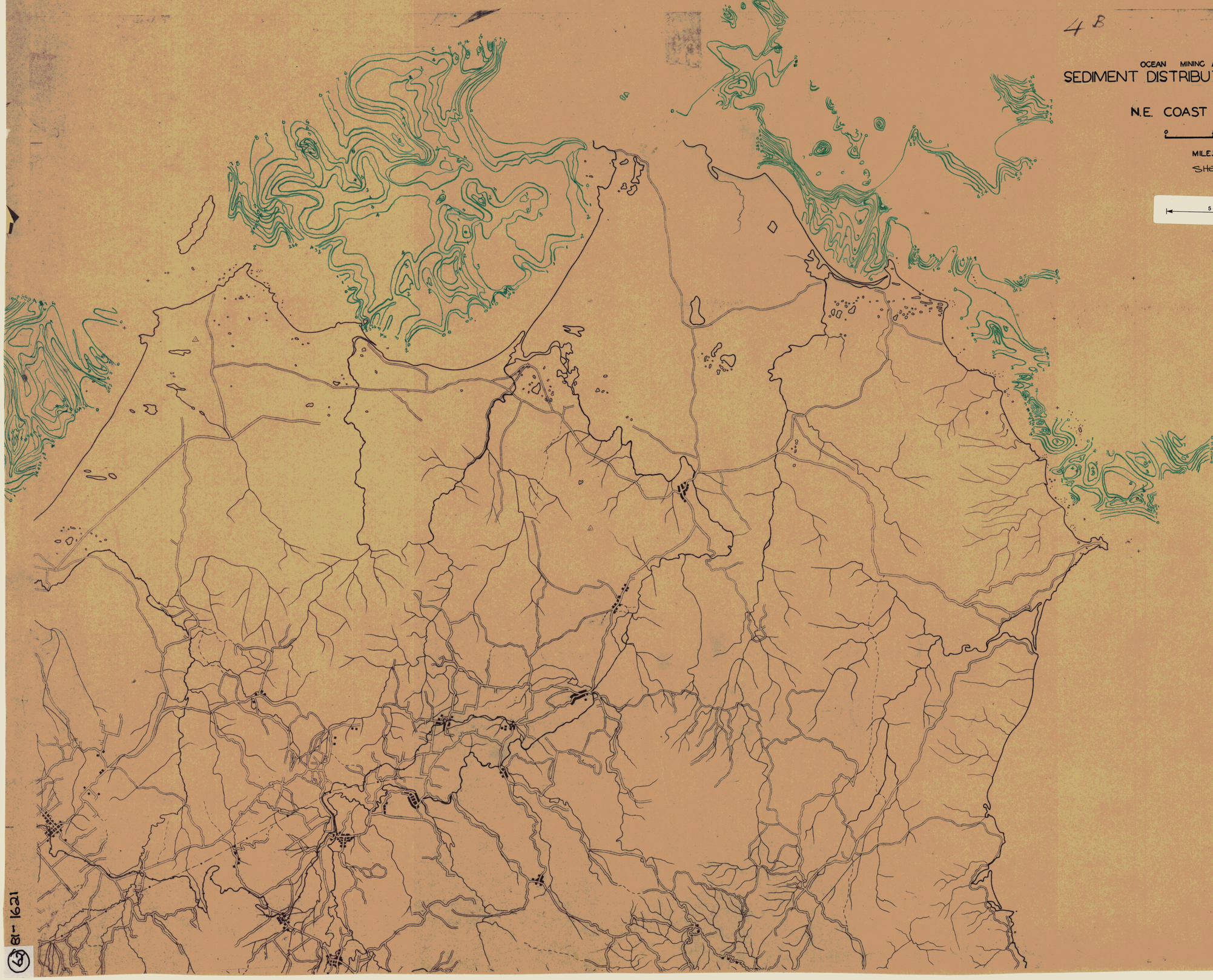
N.E. COAST TASMANIA

0 2 4

MILES

SHEET 4-8

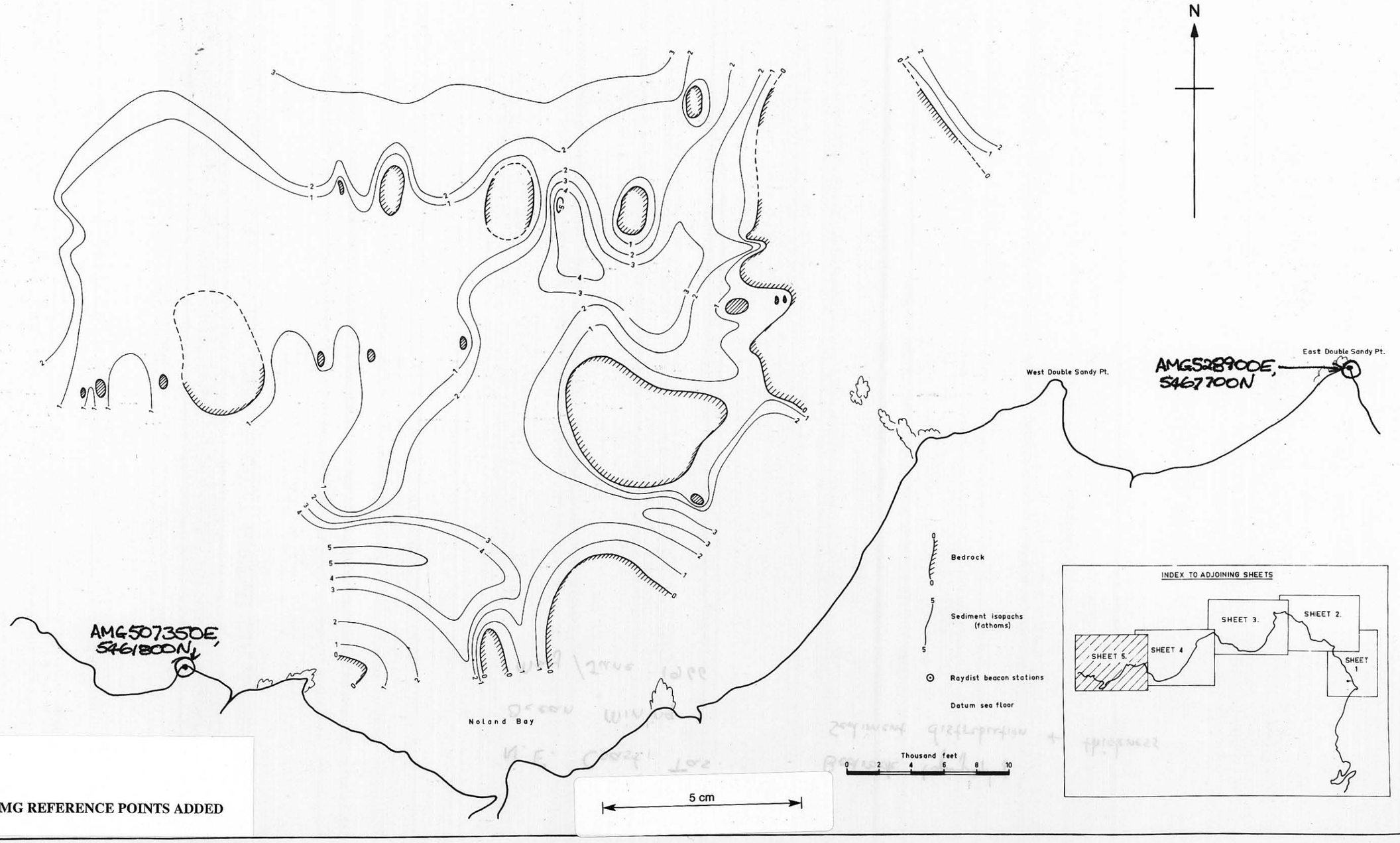
5 cm



81-1621

OCEAN MINING A.G. (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS (upper layer)
NORTH EAST COAST TASMANIA
SHEET 5



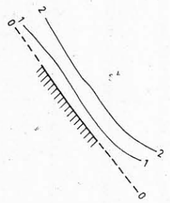
AMG REFERENCE POINTS ADDED

81-1621
G3

OCEAN MINING A.G. (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS (upper layer)
NORTH EAST COAST TASMANIA
SHEET 5





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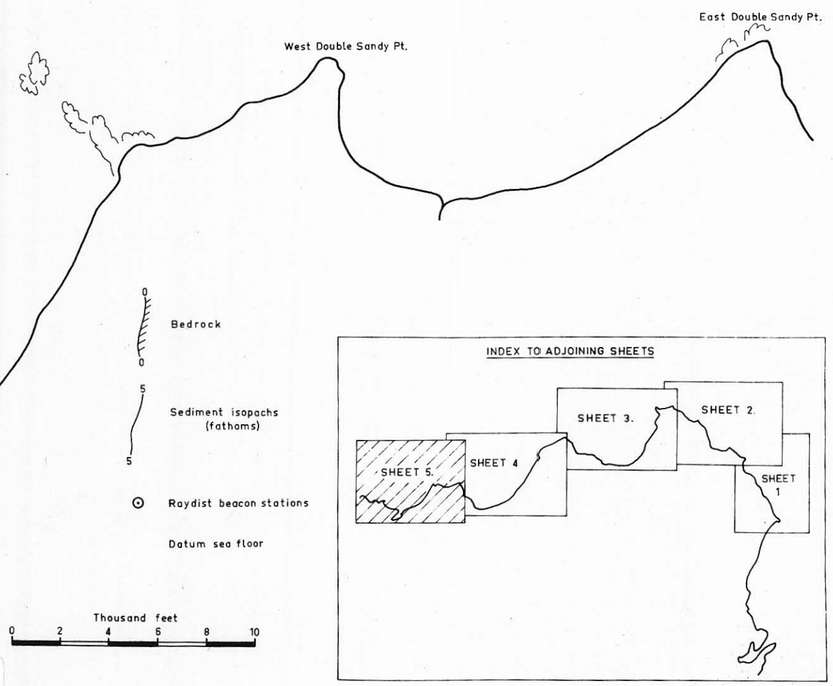


Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Datum sea floor

Thousand feet
0 2 4 6 8 10

INDEX TO ADJOINING SHEETS

5 cm

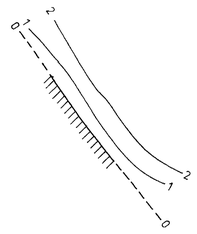
81-1621

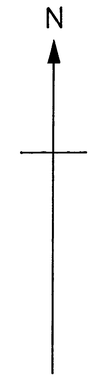
(68) 81-1621

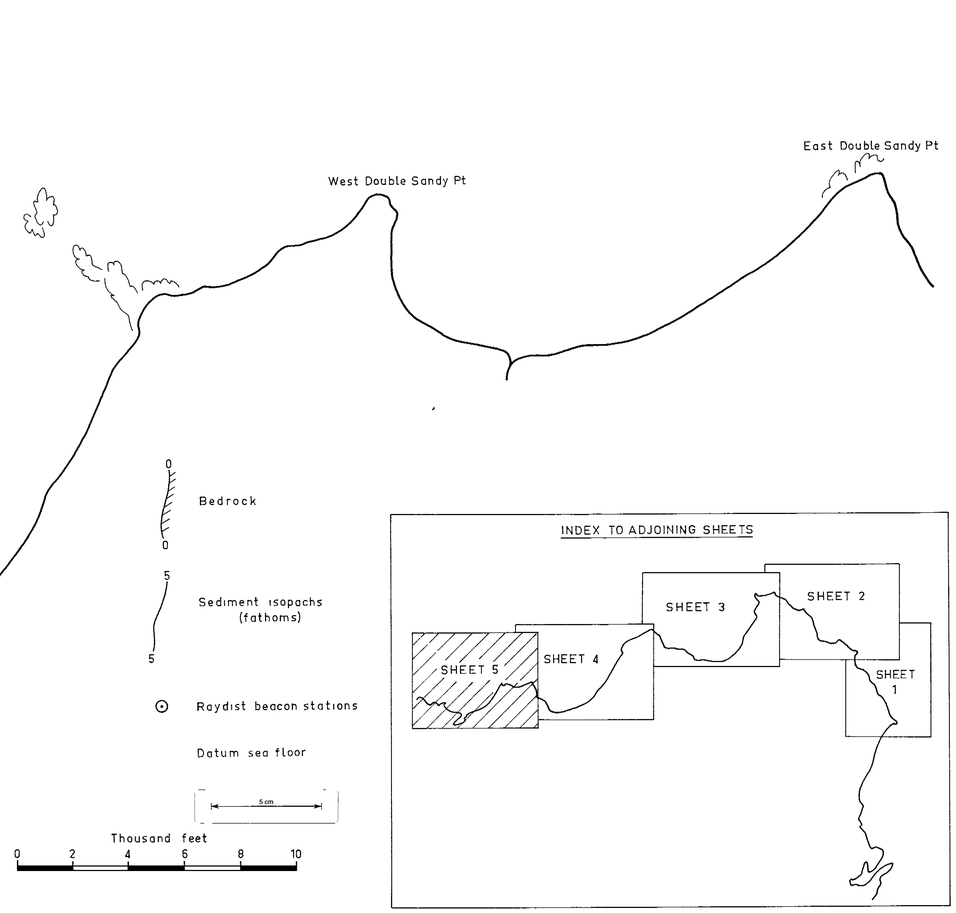
OCEAN MINING A G (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS (upper layer)
NORTH EAST COAST TASMANIA
SHEET 5









Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Datum sea floor

5cm

Thousand feet

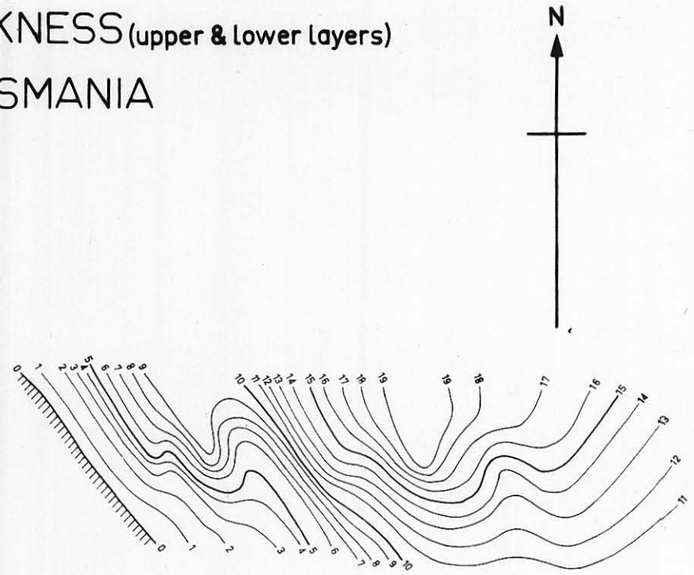
0 2 4 6 8 10

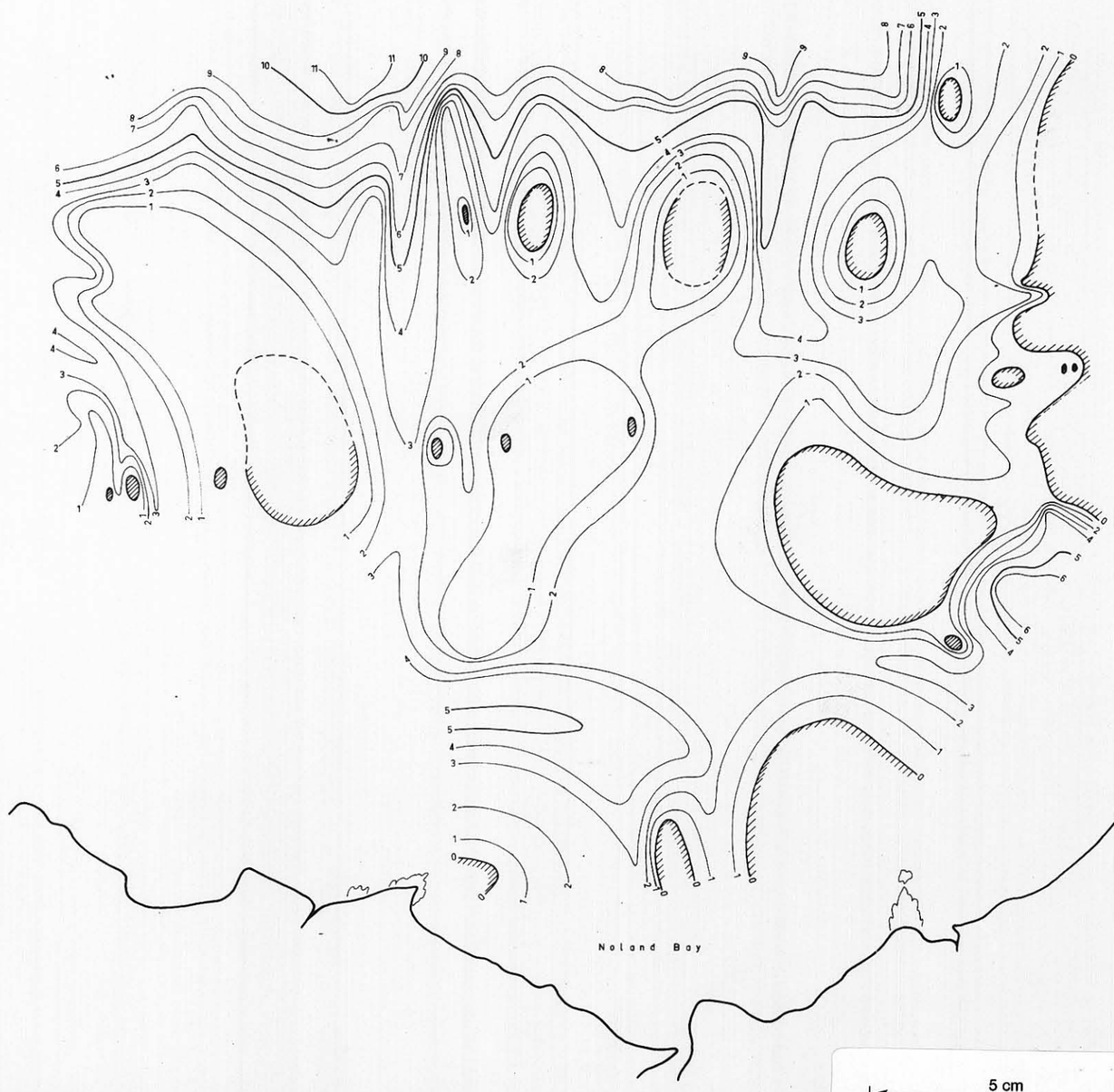
INDEX TO ADJOINING SHEETS

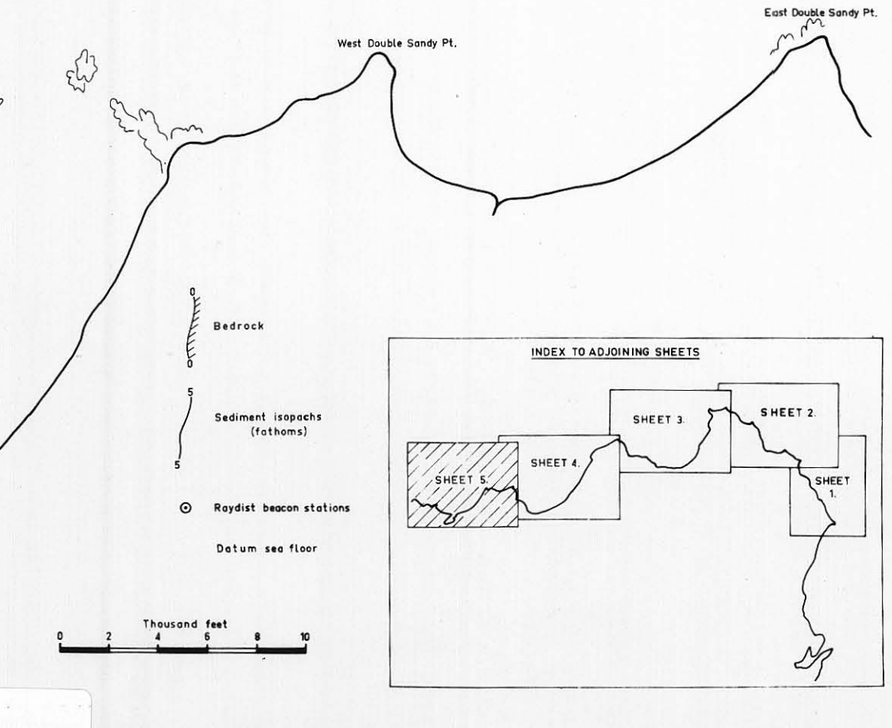
8097

OCEAN MINING A.G. (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS (upper & lower layers)
NORTH EAST COAST TASMANIA
SHEET 5







Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Datum sea floor

Thousand feet
0 2 4 6 8 10

INDEX TO ADJOINING SHEETS

5 cm

81 - 1621

66

OCEAN MINING A G. (TASMANIA) MAY 1986

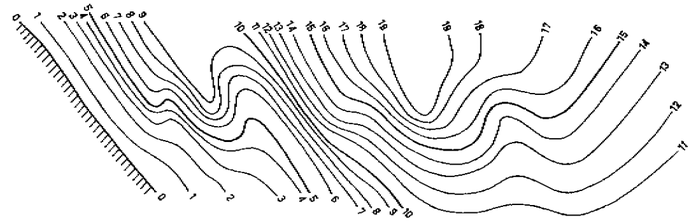
SEDIMENT DISTRIBUTION and THICKNESS (upper & lower layers)

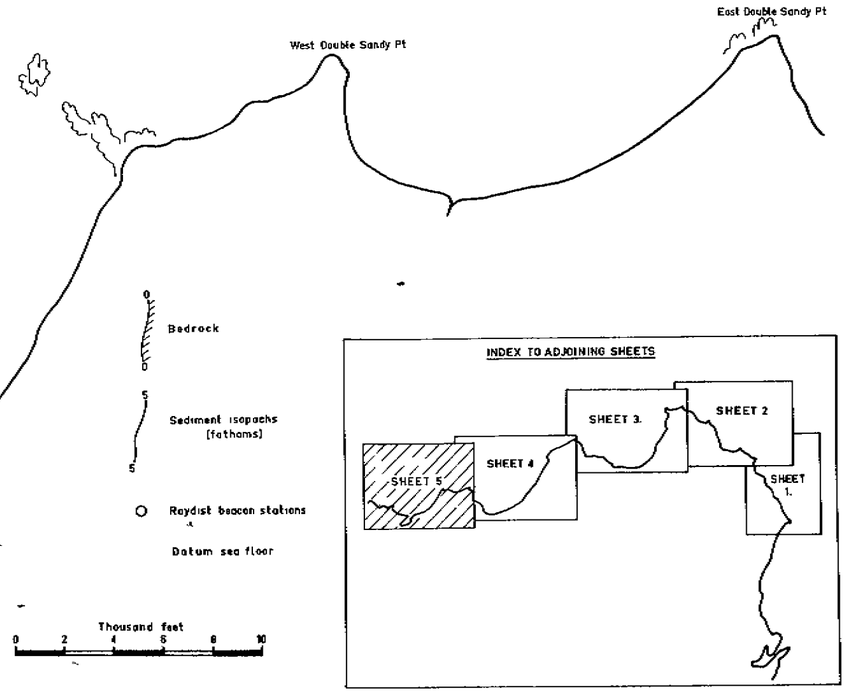
NORTH EAST COAST TASMANIA

SHEET 5

N







Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Datum sea floor

Thousand feet

0 2 4 6 8 10

5 cm

INDEX TO ADJOINING SHEETS

81-1621

67

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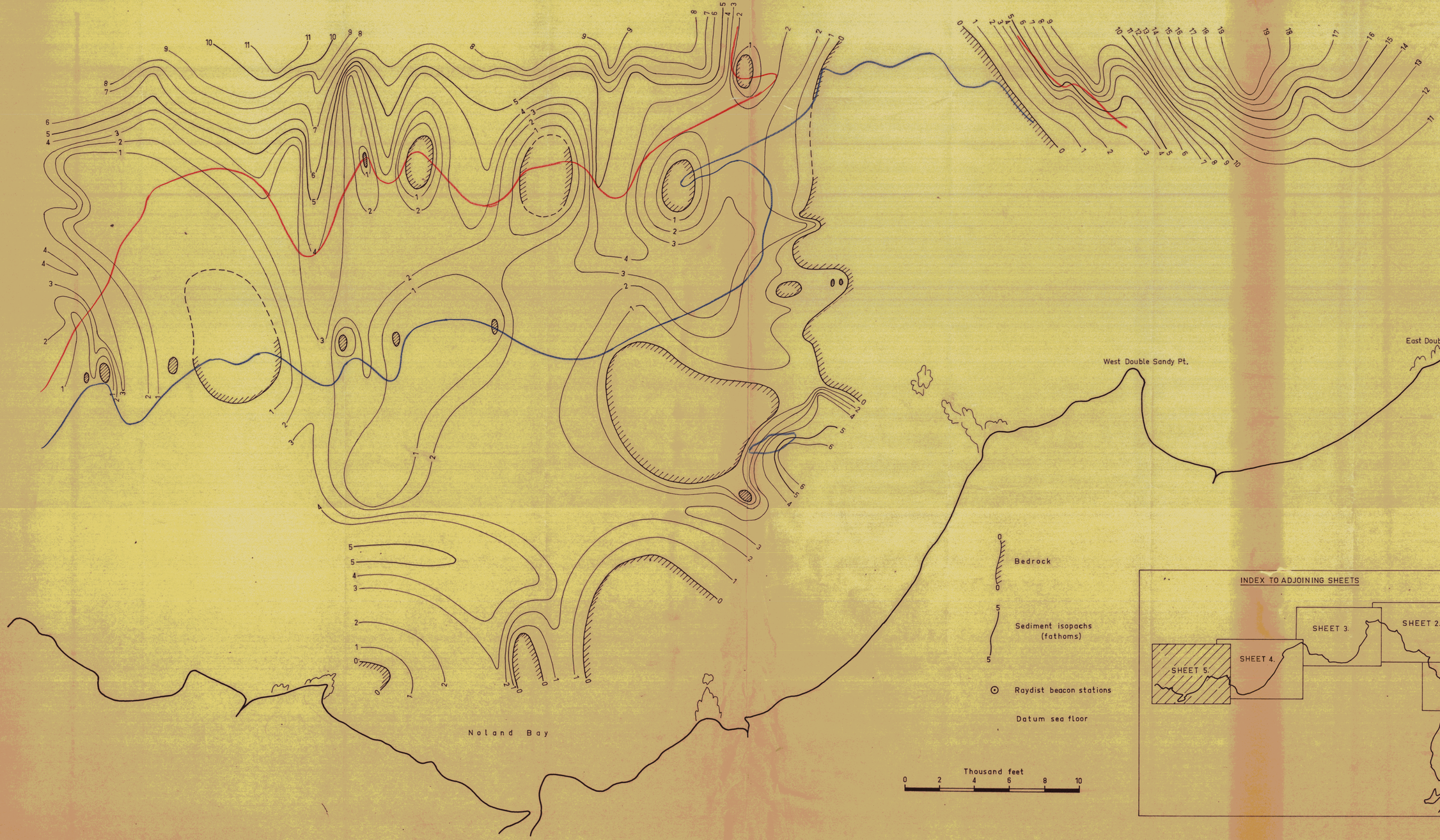
OCEAN MINING A.G. (TASMANIA) MAY 1966

SEDIMENT DISTRIBUTION and THICKNESS (upper & lower layers)
NORTH EAST COAST TASMANIA
SHEET 5

N



Bedrock

Sediment isopachs (fathoms)

Raydist beacon stations

Datum sea floor

Thousand feet
0 2 4 6 8 10

INDEX TO ADJOINING SHEETS

8098

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OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS

(upper & lower layers)

FLINDERS ISLAND

SHEET 1

Prime Seal Island

Chalky Island

Arthur Bay

Blue Rocks Pt.

WHITEMARK

Parrys Bay

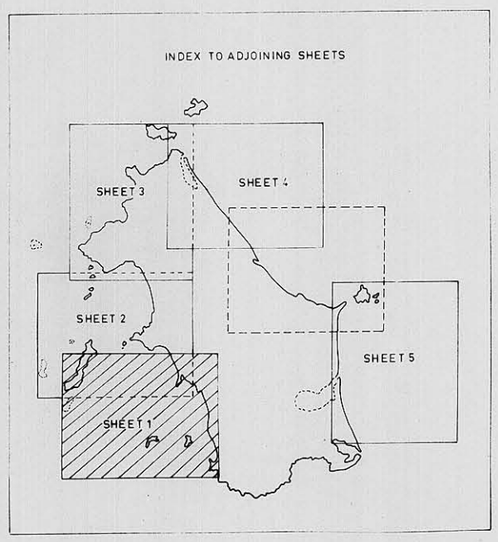
East Kangaroo Island

Big Green Is.

Trousers Pt.

N

INDEX TO ADJOINING SHEETS



Bedrock

Sediment isopachs (fathoms)

Thousand feet
0 2 4 6 8 10

5 cm

8059

OCEAN MINING A G (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS

(upper & lower layers)

FLINDERS ISLAND

SHEET 1

Prime Seal Island

Arthur Bay

Blue Rocks Pt

Chalky Island

WHITEMARK

Parrys Bay

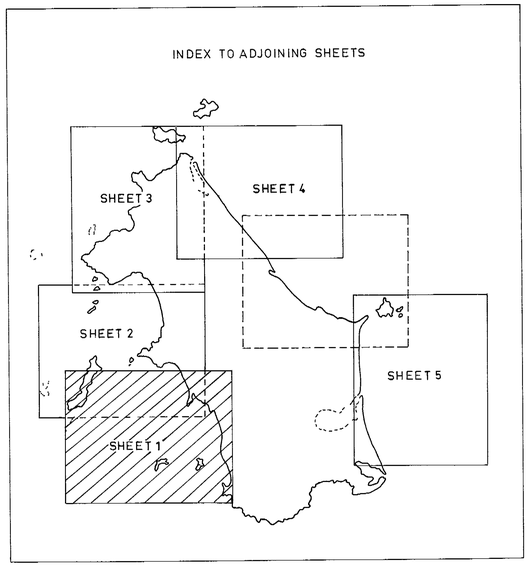
East Kangaroo Island

Big Green Is

Trousers Pt

N

INDEX TO ADJOINING SHEETS



Bedrock

Sediment isopachs (fathoms)

5 cm

Thousand feet

0 2 4 6 8 10

81-621

70

81-1621

OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS

(upper & lower layers)

FLINDERS ISLAND

SHEET 2

N

Nth Pasco Is.

Middle Pasco Is.

Sth Pasco Is.

Marshall Bay

Settlement Pt.

Prime Seal Island

Swires Patch

Arthur Bay

Blue Rocks Pt.

Chalky Island

5 cm

INDEX TO ADJOINING SHEETS

SHEET 1

SHEET 2

SHEET 3

SHEET 4

SHEET 5

SHEET 6

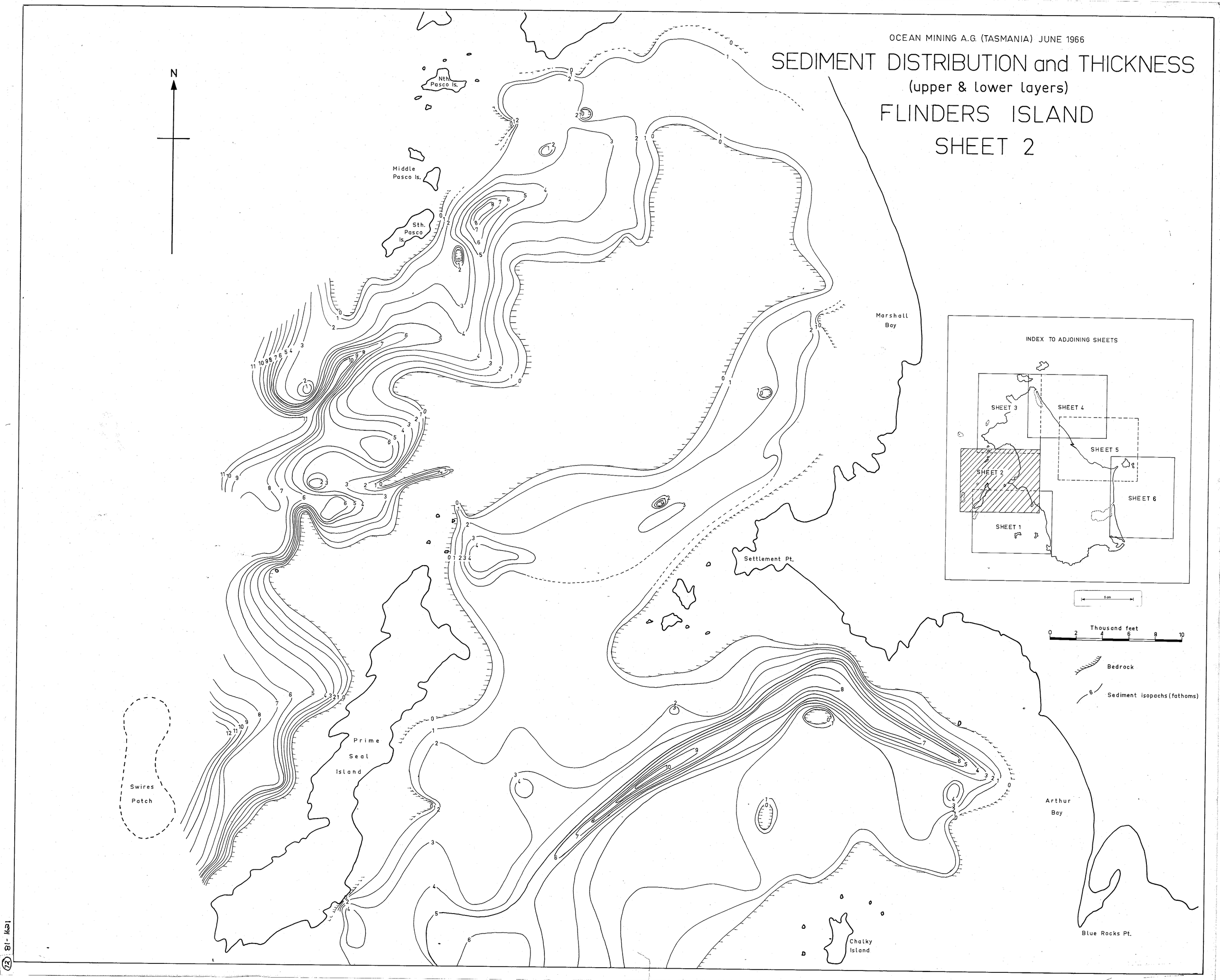
Thousand feet

0 2 4 6 8 10

Bedrock

6 Sediment isopachs (fathoms)

8062


OCEAN MINING A.G. (TASMANIA) JUNE 1966
SEDIMENT DISTRIBUTION and THICKNESS
(upper & lower layers)
FLINDERS ISLAND
SHEET 2
N
Nth. Pasco Is.
Middle Pasco Is.
Sth. Pasco Is.
Marshall Bay
Settlement Pt.
Prime Seal Island
Swires Patch
Arthur Bay
Chalky Island
Blue Rocks Pt.
INDEX TO ADJOINING SHEETS
SHEET 1
SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6
Thousand feet
0 2 4 6 8 10
Bedrock
Sediment isopachs (fathoms)

SHEET 2B

OCEAN MINING AG

SEDIMENT DISTRIBUTION & THICKNESS

(UPPER & LOWER LAYERS)

0 2 4

MILES

5 cm

FLINDERS ISLAND

1100 1090 1080 1070 1060 1050 1040

540 550 560 570 580 590 600 610 620 630

81-1621

(73)

2B

2B

OCEAN MINING A.G.

SEDIMENT DISTRIBUTION and THICKNESS

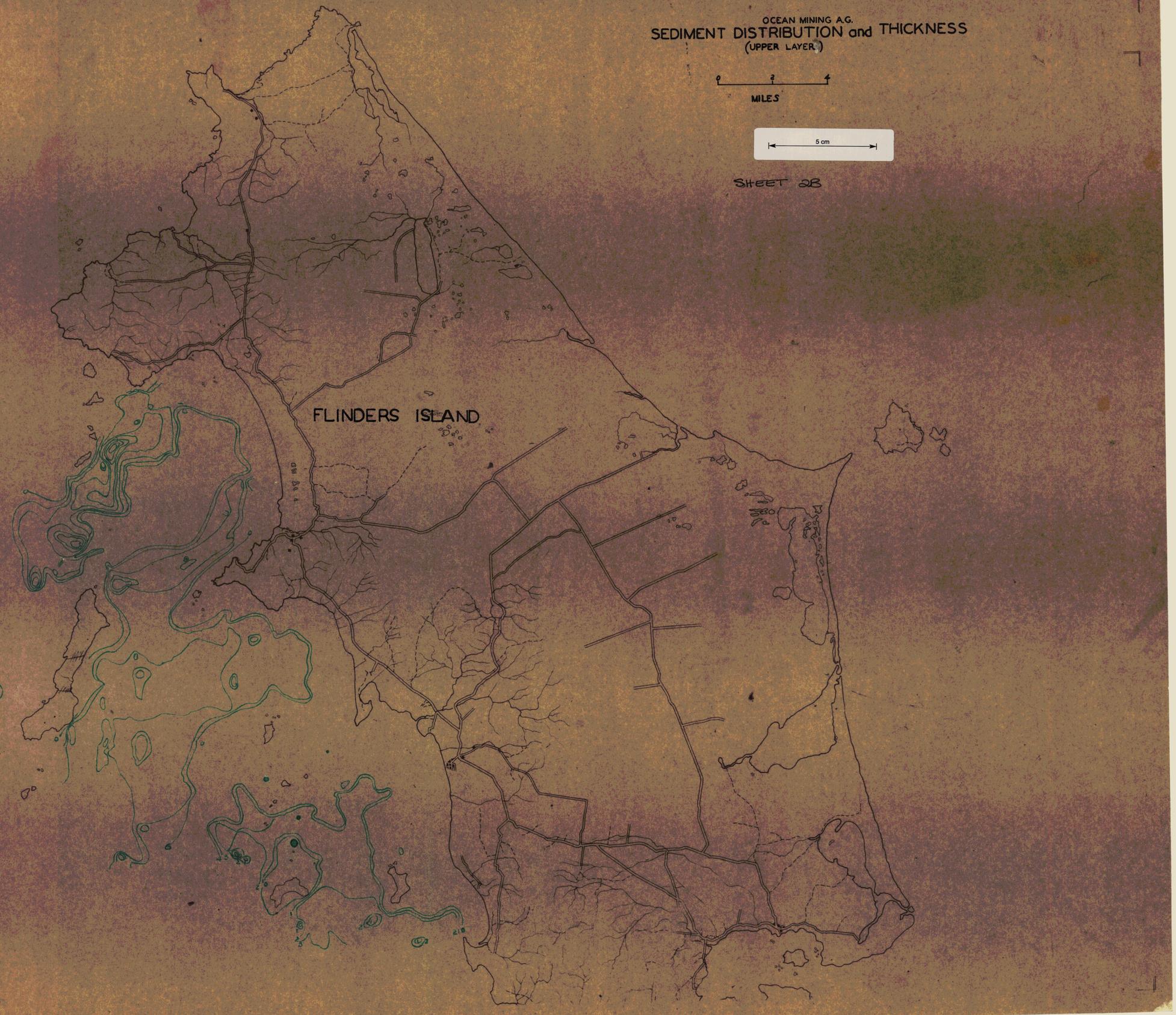
(UPPER LAYER)

0 2 4

MILES

5 cm

SHEET 2B



81-1621

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AMG 564250E
5565100N

Prime Seal Island

Chalky Island

Arthur Bay

Blue Rocks Pt.

WHITEMARK

Parrys Bay

East Kangaroo Island

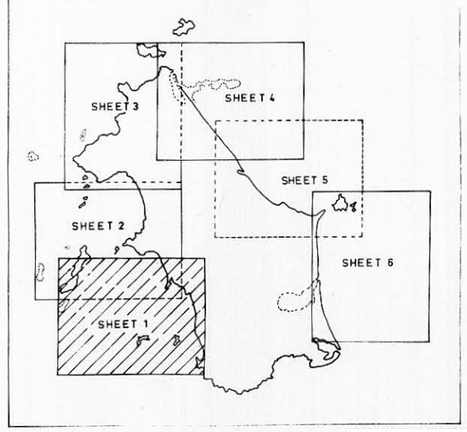
Big Green Is.

AMG 587100E
5548200N

Trousers Pt.

N

INDEX TO ADJOINING SHEETS



OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS

(upper layer)

FLINDERS ISLAND

SHEET 1

Bedrock

Sediment isopachs (fathoms)

Thousand feet 0 2 4 6 8 10

5 cm

AMG REFERENCE POINTS ADDED

Prime Seal Island

Arthur Bay

Blue Rocks Pt

Chalky Island

WHITEMARK

Parrys Bay

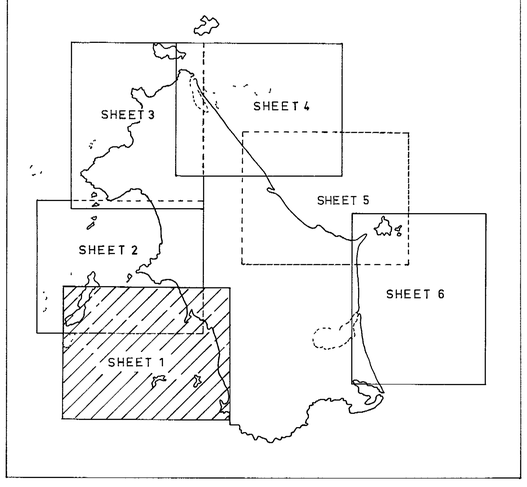
East Kangaroo Island

Big Green Is

Trousers Pt

N

INDEX TO ADJOINING SHEETS



OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS

(upper layer)

FLINDERS ISLAND

SHEET 1

Bedrock

Sediment isopachs (fathoms)

5cm

Thousand feet

0 2 4 6 8 10

81-1621

76

OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS

(upper layer)

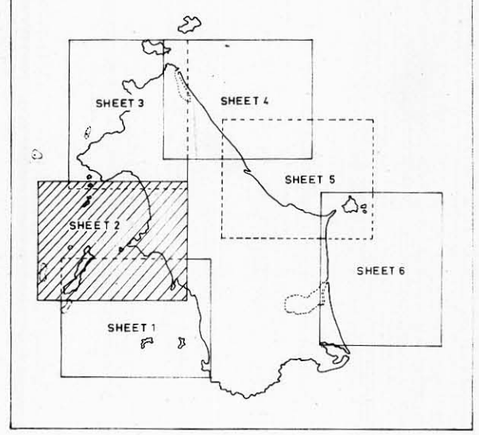
FLINDERS ISLAND

SHEET 2

AMG REFERENCE POINTS ADDED

5 cm

INDEX TO ADJOINING SHEETS



N

AMG 5656000E
5580100N

Nth. Pasco Is.

Middle Pasco Is.

Sth. Pasco Is.

Marshall Bay

Settlement Pt.

Prime Seal Island

Swires Patch

Chalky Island

Arthur Bay

Blue Rocks Pt.

AMG 5811000E
5560700N

Thousand feet
0 2 4 6 8 10

Bedrock

6 Sediment isopachs (fathoms)

81-1621

(17)

OCEAN MINING A.G (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS

(upper layer)

FLINDERS ISLAND

SHEET 2

N

Nth Pasco Is

Middle Pasco Is

Sth Pasco Is

Marshall Bay

Settlement Pt

Prime Seal Island

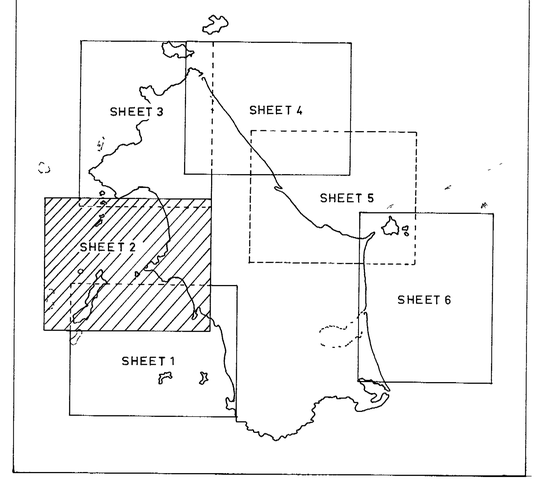
Swires Patch

Arthur Bay

Blue Rocks Pt

Chalky Island

INDEX TO ADJOINING SHEETS



8cm

Thousand feet

0 2 4 6 8 10

Bedrock

6 Sediment isopachs (fathoms)

2B

2B

OCEAN MINING A.G.

SEDIMENT DISTRIBUTION and THICKNESS

(UPPER LAYER)

0 1 2

MILES

5 cm

SHEET 2B

FLINDERS ISLAND

81-1621

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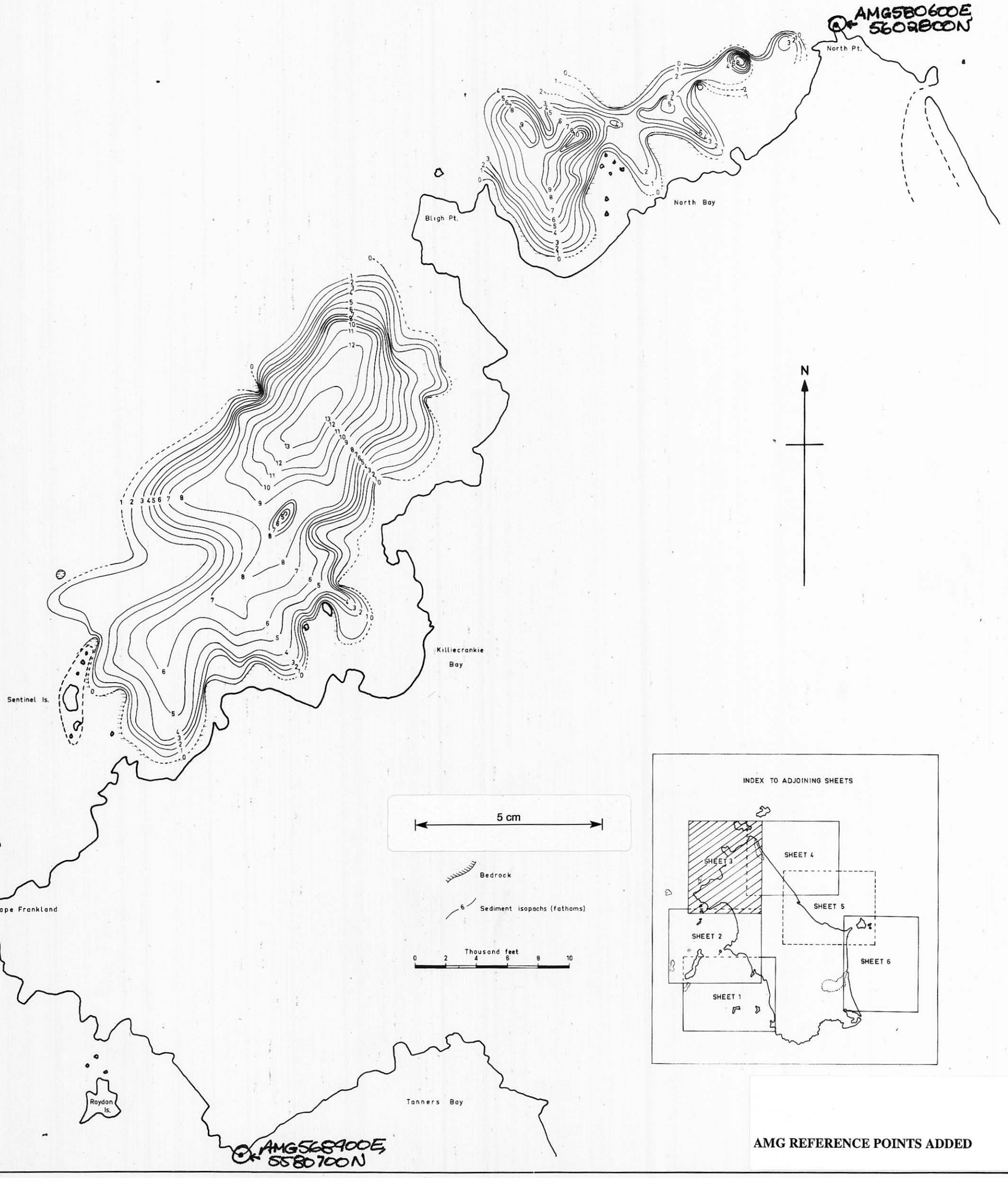
OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS
FLINDERS ISLAND
SHEET 3

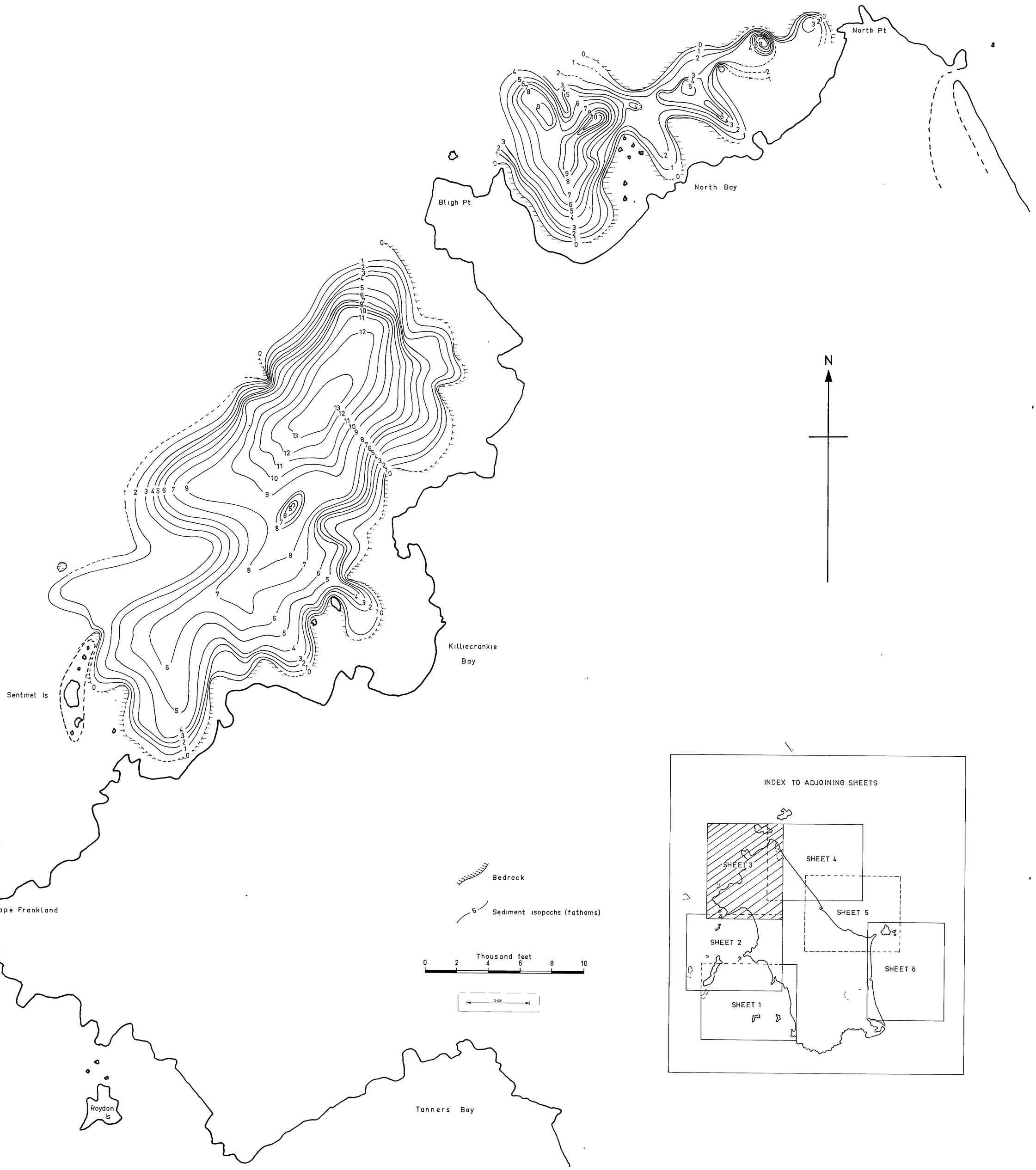


AMG REFERENCE POINTS ADDED

OCEAN MINING A.G (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS
FLINDERS ISLAND
SHEET 3





(52) 81-1621

DUNES - AVERAGE THICKNESS 15 fm

DUNES - AVERAGE THICKNESS 5 fm

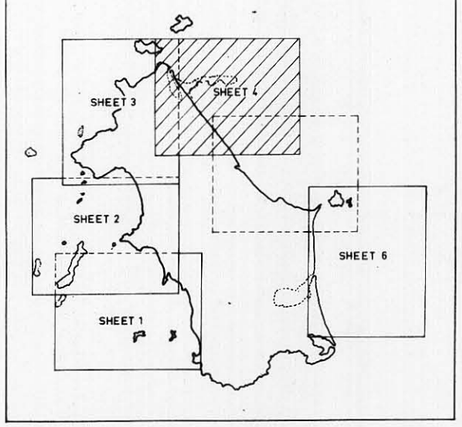
AMG 580600E
5602800N

North Pt.

AMG 583000E
5596600N

N

INDEX TO ADJOINING SHEETS



Bedrock

Sediment isopachs (fathoms)

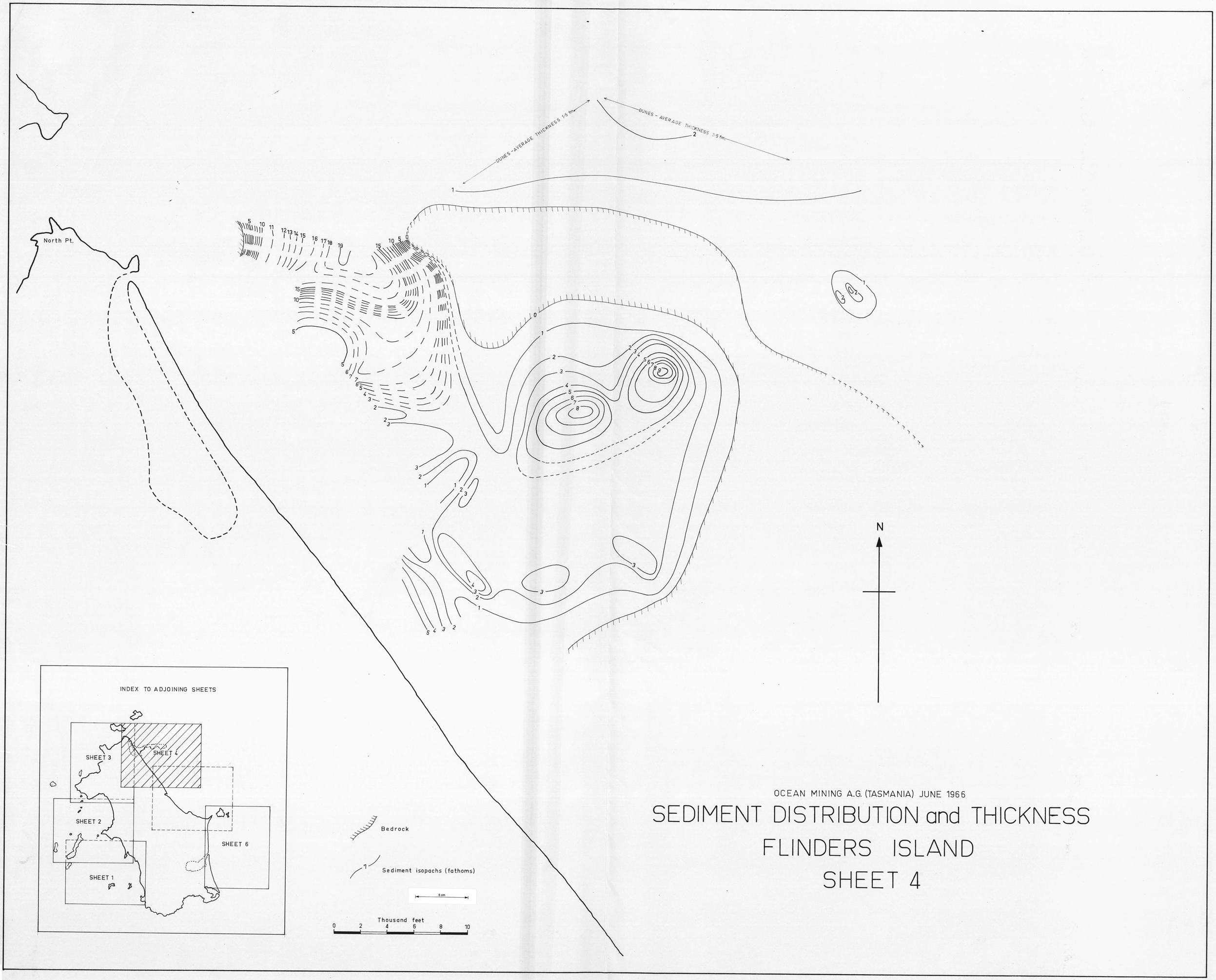
Thousand feet
0 2 4 6 8 10

OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS
FLINDERS ISLAND
SHEET 4

5 cm

AMG REFERENCE POINTS ADDED



OCEAN MINING A.G. (TASMANIA) JUNE 1966

SEDIMENT DISTRIBUTION and THICKNESS
FLINDERS ISLAND
SHEET 4