REPORT ON EXAMINATION OF THREE PROSPECTS ON THE WESTERN SHORE, MACQUARIE HARBOUR BETWEEN DOUBLE COVE AND BIRCH'S INLET

LYELL E.Z. EXPLORATIONS

57 – 152

AMG REFERENCE POINTS ADDED

17th March, 7

Report on Examination of Three Prospects on the Western Shore, Macquarie Harbour between Double Cove and Birch's Inlet

Dates of Examination:	April - April, 1957.
Party Leader:	B. Scott.
Personnel Employed:	D. Sampey, G. Abel, R. Abel and P. White.
Man Days in the Field:	20
Location of Camps:	Gravelly Beach and Motor Launch "Nola Too".
Means of Transport and Supply:	Motor Launch "Nola Too".

General Topography of Area:

The coastline consists of a series of rocky headlines interspersed with pebble and sandy beaches.

Geological Findings and Investigations:

The position of the three prospects investigated are marked on the accompanying map P12.

Pelias Cove:

Prospect reported by D. Sampey (Report dated 18th March)

(a) Access

The cove is 2-3 hours journey by boat from Strahan. In reasonable weather a punt can be landed directly onto the beach

at Pelias Cove, however a safe anchorage for launches up to 50-60 feet in length exists in Double Cove only 350 yards west of Pelias Cove.

(b) Geology

The prospect occurs on the beach of Pelias Cove: approximately 125 feet of trenching was carried out in order to determine the extent of the sulphide mineralization. These trenches, and intersections are plotted on plan P13. The trenches were dug to bed-rock level, which was usually 12-18 inches below the beach surface.

The ore zone exposed is 39 feet wide, of this width 20 feet consists of sulphide (predominately pyrite). The sulphide bands are obviously due to a selective replacement of beds within this zone and the strike and dip of the bands conforms to the bedding (350/vertical). In addition the sulphides have a streaky appearance due to darker and lighter bands which again parallel the bedding. In addition to the mineralization on the shore an outcrop on pyrite-veined rock was located at approximately 80 feet off shore as shown on P13.

The country rock is weathered and a definite identifacation is difficult but it consists of a dark green material representing either a weathered tuff or greywacke.

Three samples from outcrop "A" (The original discovery) have been assayed, their average is as follows.

Copper	Lead	Zinc	Silver	Gold	Iron
0.2%	1.5%	0.9%	0.15%	0.006%	42.1%

The silver and gold figures are in ounces/ton.

A chip sample taken from outcrops A, B and C during the recent

investigation assayed:

Copper	Lead	Zinc	Silver	Gold	Iron
0.04%	Trace	1.1%	0.135%	0.010%	38.3%

The four samples assayed reflect the erratic values which can be expected from a weathered copper/pyrites outcrop.

The remainder of the outcrops were too badly weathered to sample.

(c) Summary of Findings

An ore zone 39 feet wide (approximately 50% sulphide averaging 0.12% copper, 0.75% lead, 1.0% zinc and 40.2% Iron.) and at least 15 feet along strike has been located. The outcrop of pyrite veined rock approximately 80 feet from shore could extend this zone to 95 feet along strike.

(d) Further Work

Further work could consist of diamond drilling along strike to the south.

The bush is not too thick and consists of the usual cheesewood and gum tree cover with swampy ground conditions: none of the trees seen were over 24" girth. Although a small boat can be beached at Pelias Cove a better anchorage would be in Double Cove. Double Cove is a safe deep water anchorage for all weather except a north or north-easterly gale, which, however, are usually of a short duration. A track could easily be cut through this open bush from Double to Pelias Cove, even now without a track the latter Cove can be reached in 10-15 minutes walking from Double Cove.

There is a plentiful supply of drinking water in the immediate locality.

(e) Work Recommended

Type of Drill E100

Number and length of holes (see section P15)

Three diamond drill holes, each of 120 feet in length. It is recommended that the first 50 feet of each hole is drilled with AX casing equipment. This is to ensure the extra depth over 100 feet with the EX equipment and a good core recovery in the crumbly, weatherd surface material.

Location of Holes

At 150 feet intervals on an azimuth 187° from the base peg. The collar of the holes would be 19 feet west of the base peg: that is 30 feet from the west boundary of sulphide outcrop "A".

(f) Azimuth of Holes

097°, at right angles to the strike of the ore zone.

(g) Dip

Minus 45 degrees.

(h) Intersection

It is estimated that the holes would intersect the ore zone at minus 29 feet on the west side and minus 68 feet on the east side of the ore zone.

The holes could be initially located by a tape and compass survey.

On the result of these three holes a further drilling programme could be considered.

2. Gravelly Beach

Prospect reported by G. Abel.

The Gravelly Beach prospects consists of stream sediment with associated chromite, gold and osmiridium. The stream, which is on the

east side on the Beach, was followed in a southerly direction for approximately 5 miles. At approximately 2 miles from the coast the stream branches and it is the South-east branch which contains the alluvial minerals, the south-west branch being barren.

This stream carried chromite for all of the length traced: small quantities of gold and osmiridium occur in patches and have been extracted from the stream bed but the full course has been prospected for these two metals. No other streams in the area contain comparable quantities of chromite and no concentration of this mineral was noted in Gravelly Beach.

At suitable intervals the stream waters were tested for soluble lead/zinc/copper by the dithizone technique; negative results were obtained in every case.

Samples of this chromite have already been examined by the Mount Lyell Company: extracts from the report by M.L. Wade in the samples dated 1st August 1956 are as follows:

Description:	About 3 lbs. (wet) of black sand, mostly -100 mesh.	
Assay:	Cr_2O_3	39.6%
	SiO_2	29.4
	FeO	15.7
	MgO	7.0
	Al_2O_3	5.1
	MnO	0.7
	CO_2	0.7
	TiO_2	0.5
	Moisture	0.3
	Total	99.0%

The sand consists mostly of chromite and silica with a very little magnetic iron.

Mr. Abel's sample indicates that this ore could most probably be cleaned up fairly easily, with the elimination of SiO_2.

Three types of chrome ore are bought for industrial purposes namely:- 1 Metallurgical Chrome Ore; 11 Refractory Ore; 111 Chemical Ore.

1 Mr. Abel's sample does not fulfill requirements as metallurgical chrome ore because it is not lumpy, and the ratio of chrome to iron (if cleaned of SiO_2) is only 2.5:1 whereas it should be 3:1.

11 The requirements for refractory ore are high alumina and magnesia and low iron content (e.g. about 33% Cr_2O_3, 30% Al_2O_3, 17% MgO and 10% iron). Mr. Abel's ore falls far short of this.

111 For chemical chrome ore the analysis or physical make up is not so important - what matters most is the cost per unit of Cr_2O_3. High grade chrome ores are bought as chemical chrome ore only provided the cost per unit of Cr_2O_3 is consistent with lower grade competitive ores.

Under satisfactory working conditions Mr. Abel's ore could meet the requirements for chemical ore.

ASSAY REPORT

12th June, 1956.

Moisture	MnO	CaO	Al_2O_3	FeO	SiO_2	Cr_2O_3	TiO_2	MgO	CO_2
Corrected assay assuming SiO2 removed.									
0.4	1.0	Tr.	7.3	22.3		56.3	0.7	10.0	1.0

Conclusions

The small tonnages involved and the length over which this

mineral (chromite) is located (approximately 5 miles x 5 yards) make it impracticeable to be worked on a large scale. However, small tonnages could no doubt be extracted by a group of 3-4 men.

A prime point of interest is the source of this chromite. It is suspected that it is derived from a belt of basic intrusions which run NE across the Cape Forell peninisula from Point Hibbs to Asbestos Point. However, the dense bush cover completely masks rock exposures in this zone but the airborne geophysical programme can be expected to locate these basic bodies.

3. Birch's Inlet Prospect (Prospect C on plate P12)

Prospect reported by G. Abel.

The prospect consists of red and yellow coloured clays on the western shore of Birch's Inlet. Trenching proved the clays to be due to weathered Dundas volcanic material.

Conclusion

The prospect does not warrant any further investigation.

B. Scott

Geologist in Charge.

482009

014

6th May, 7

Mr. Gordon Abel,
Ocean Beach Road,
STRAHAN.

Dear Mr. Abel,

I now formally advise you that our Geologist-in-Charge, Dr. B. Scott, has examined and considered the prospects at Birch Inlet and Gravelly Beach brought to our attention by you. I enclose copies of his reports for your information and record and from them you will note that he does not consider either of sufficient importance to warrant any further work by Lyell - E.Z. Explorations.

I thank you for your interest and co-operation in our search for mineral deposits of economic importance and trust you will continue to advise us of any prospects you become aware of.

Yours faithfully,

G. S. Thompson

Manager.

Copy: Dr. B. Scott

Copy of Report dated 17th April, 1957, by Dr. B. Scott

Geologist-in-Charge,

Lyell - E.Z. Explorations.

Gravelly Beach

Prospect reported by G. Abel.

The Gravelly Beach prospects consists of stream sediments with associated chromite, gold and osmiridium. The stream, which is on the east side of the Beach, was followed in a southerly direction for approximately 5 miles. At approximately 2 miles from the coast the stream branches and it is the south-east branch which contains the alluvial minerals, the south-west branch being barren.

This stream carried chromite for all of the length traced: small quantities of gold and osmiridium occur in patches and have been extracted from the stream bed but the full course has been prospected for these two metals. No other streams in the area contain comparable quantities of chromite and no concentration of this mineral was noted in Gravelly Beach.

At suitable intervals the stream waters were tested for soluble lead/zinc/copper by the dithizone technique; negative results were obtained in every case.

Samples of this chromite have already been examined by the Mt. Lyell Company: extracts from the report by M. L. Wade on the samples dated 1st August, 1956, are as follows:

Description: About 3 lbs. (wet) of black sand, mostly -100 mesh.

Assay:				
	Cr_2O_3	39.6%	MnO	5.1%
	SiO_2	29.4	CO_2	0.7
	FeO	15.7	TiO_2	0.5
	MgO	7.0	Moisture	0.3
	Al_2O_3		Total	99.0%

The sand consists mostly of chromite and silica with a very little magnetic iron.

Mr. Abel's sample indicates that this could most probably be cleaned up fairly easily, with the elimination of SiO_2.

Three types of chrome ore are bought for industrial purposes namely:- (i) Metallurgical Chrome Ore; (ii) Refractory Ore; (iii) Chemical Ore.

(i) Mr. Abel's sample does not fulfill requirements as metallurgical chrome ore because it is not lumpy, and the ratio of chrome to iron (if cleaned of SiO_2) is only 2.5 : 1 whereas it should be 3 : 1.

(ii) The requirements for refractory ore are high alumina and magnesia and low iron content (e.g. about 33% Cr_2O_3, 30% Al_2O_3, 17% MgO and 10% iron). Mr. Abel's ore falls far short of this.

(iii) For chemical chrome ore the analysis of physical make up is not so important - what matters most is the cost per unit of Cr_2O_3. High grade chrome ores are bought as chemical chrome ore only provided the cost per unit of Cr_2O_3 is consistent with lower grade competitive ores.

Under satisfactory working conditions Mr. Abel's ore could meet the requirements for chemical ore.

ASSAY REPORT

12th June, 1956.

Moisture	MnO	CaO	Al_2O_3	FeO	SiO_2	Cr_2O_3	TiO_2	MgO	CO_2
Corrected assay assuming SiO_2 removed.									
0.4	1.0	Tr.	7.3	22.3		56.3	1.7	10.0	1.0

Conclusions

The small tonnages involved and the length over which this mineral (chromite) is located (approximately 5 miles x 5 yards) make it impracticable to be worked

on a large scale. However, small tonnages could no doubt be extracted by a group of 3-4 men.

A prime point of interest is the source of this chromite. It is suspected that it is derived from a belt of basic intrusions which run NE across the Cape Sorell peninsula from Point Hibbs to Asbestos Point. However, the dense bush cover completely masks rock exposures in this zone but the airborne geophysical programme can be expected to locate these basic bodies.

Brich's Inlet Prospect

Prospect reported by G. Abel.

The prospect consists of red and yellow coloured clays on the western shore of Birch's Inlet. Trenching proved the clays to be due to weathered Dundas volcanic material.

Conclusion

The prospect does not warrant any further investigation.

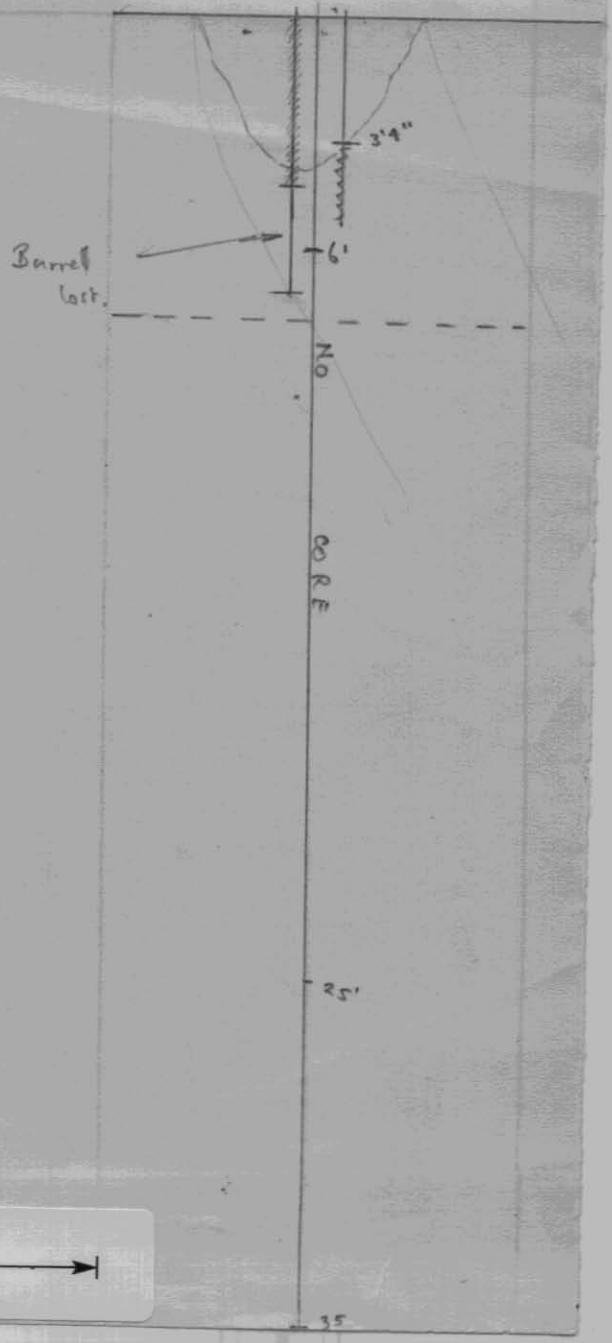
018 482013

S1	@ 34-44 L6	Red M.	$\frac{13}{16}$ lbs
S2	10 - 34 L6	Green wat.	$5\frac{5}{16}$ lbs
S3	L4, L5	Green Mat	$2\frac{7}{16}$ lbs
L3	92	102	$5\frac{5}{8}$ lbs
L3	102	112	$7\frac{7}{8}$ lbs
L3	112	122	$23\frac{1}{16}$ lbs
			$2\frac{5}{16}$ lbs

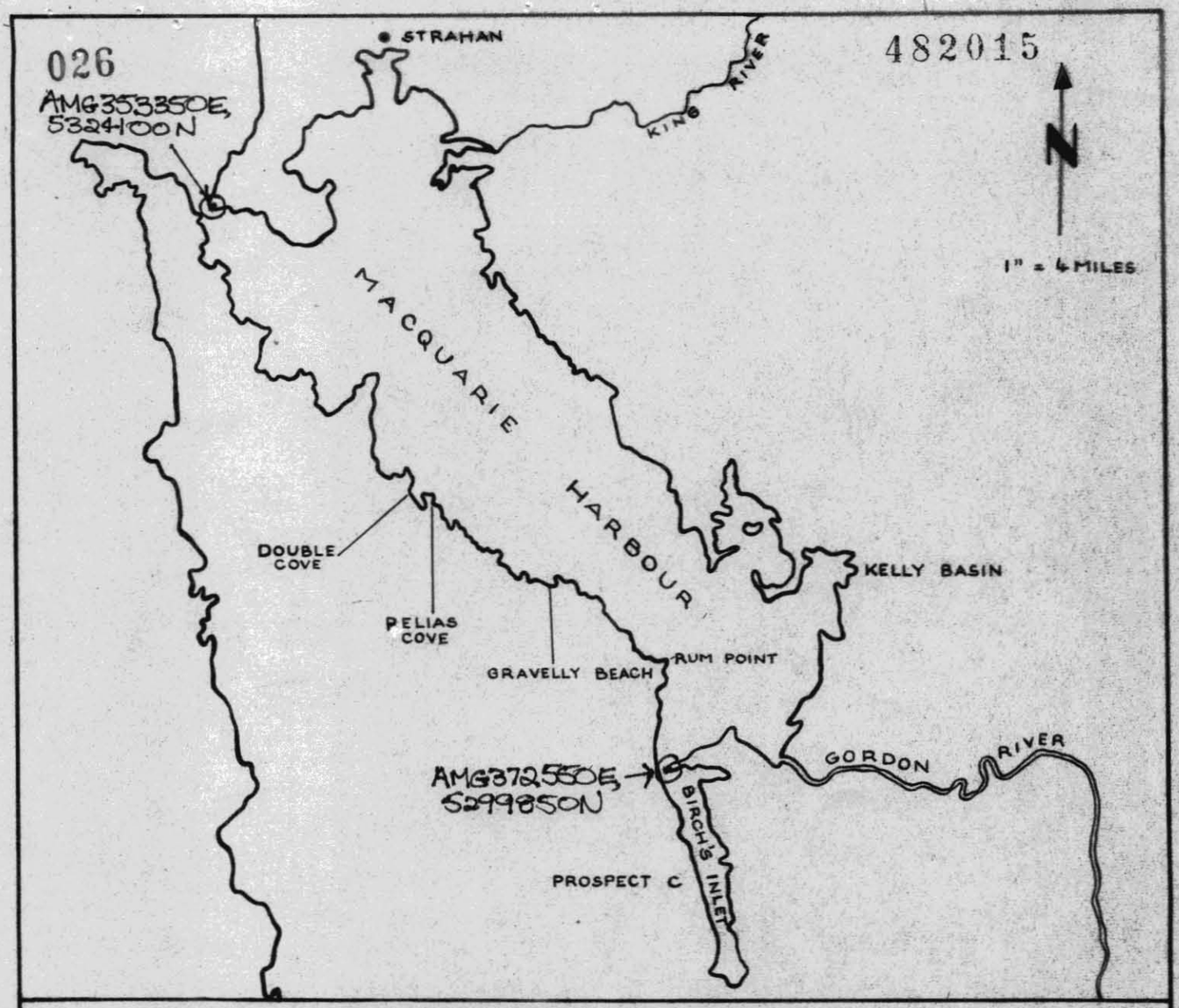
019 1"=5'

4.5A.5B

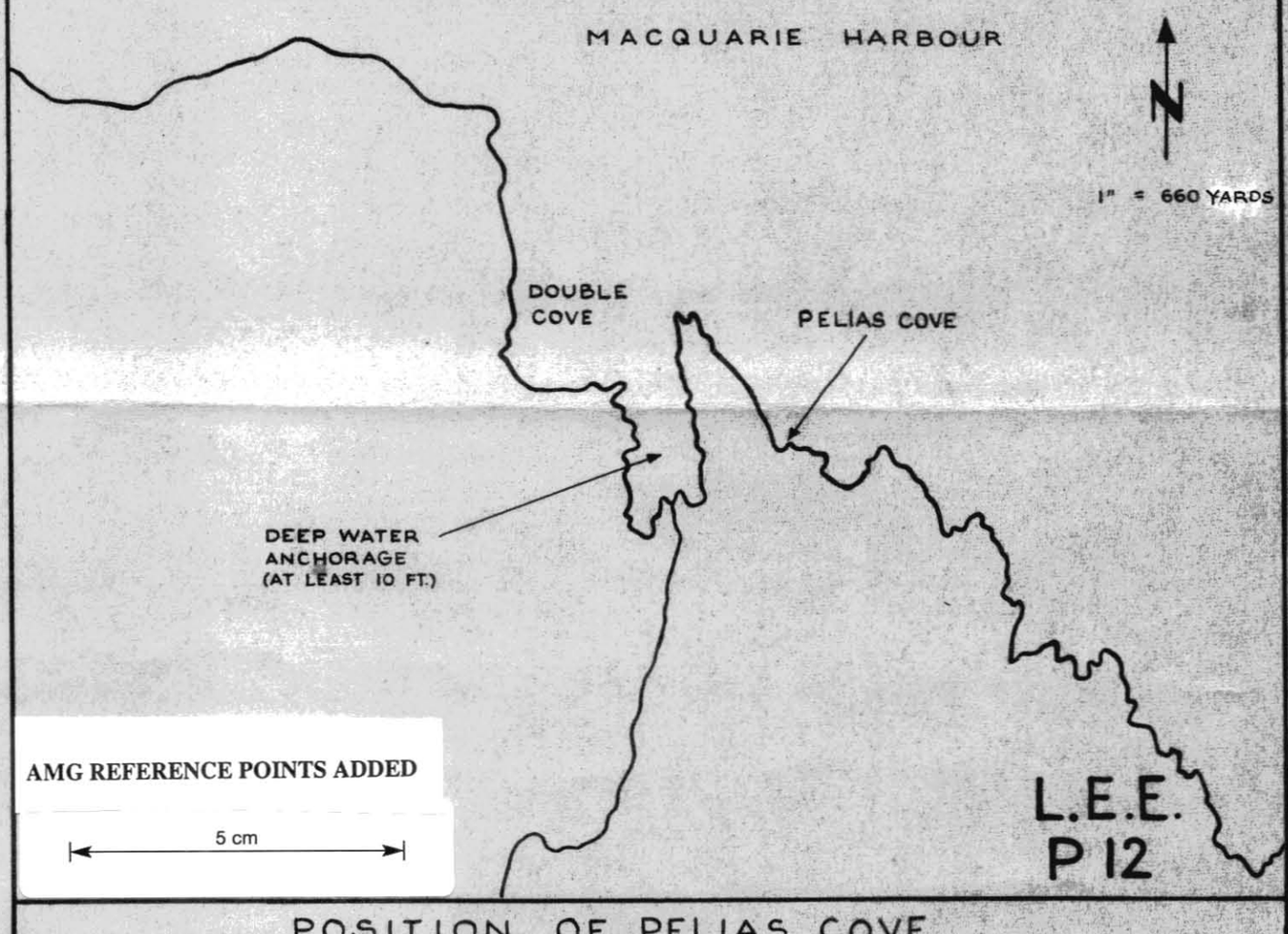
482014



5 cm

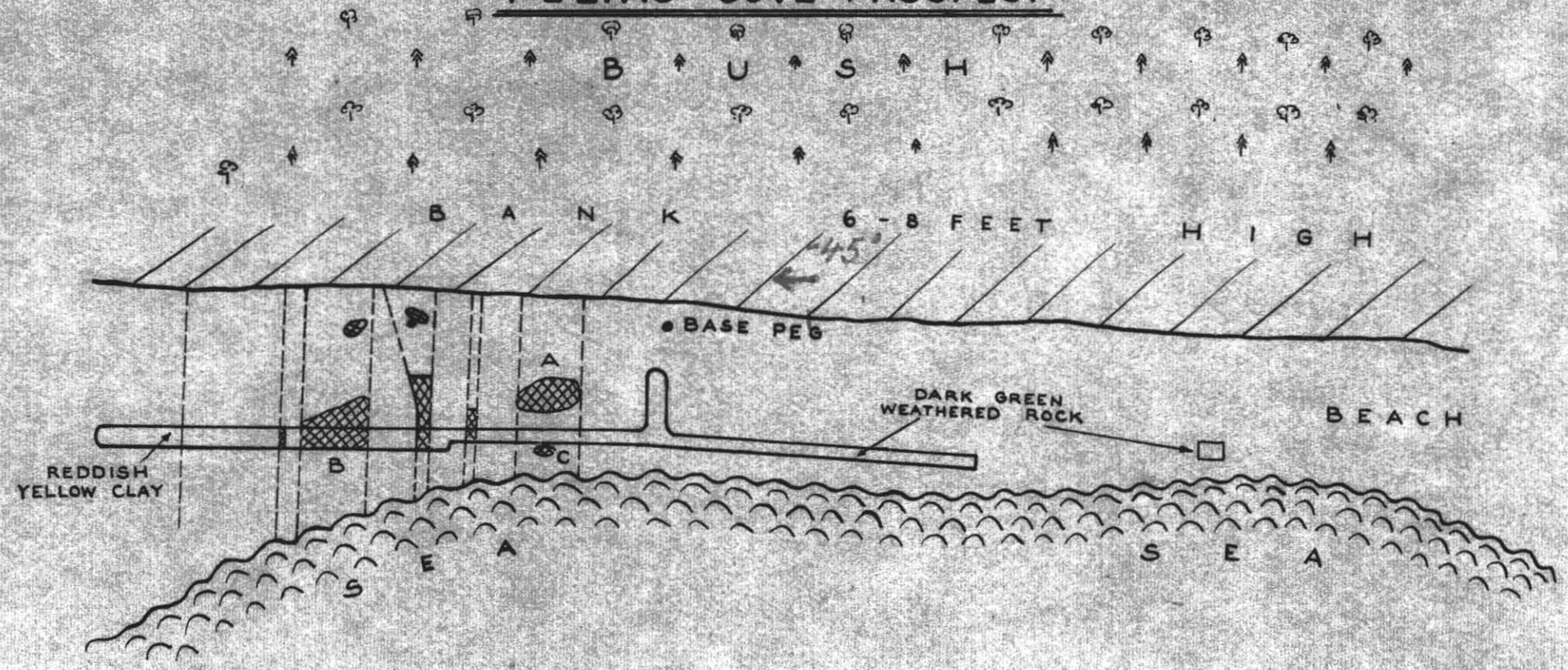


LOCATION OF THE THREE PROSPECTS



POSITION OF PELIAS COVE

PELIAS COVE PROSPECT



KEY

1" = 20 FEET

OBSERVED SULPHIDE

INFERRED PROJECTION

5 cm

WATER 5 FEET DEEP

N

L.E.E.
P13

021

482016

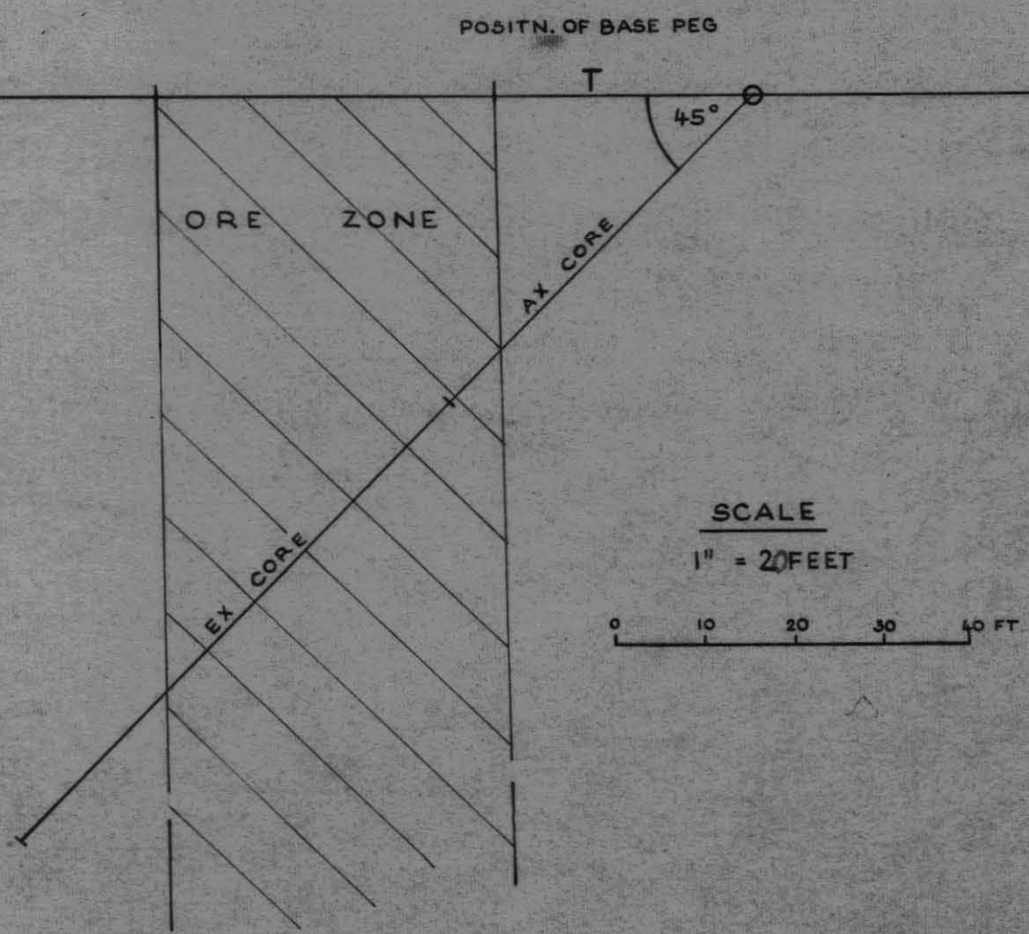
022

482017

PROPOSED DIAMOND DRILLING PELIAS COVE
EAST-WEST SECTION
LOOKING SOUTH

EAST

WEST



5 cm

L.E.E.
P15

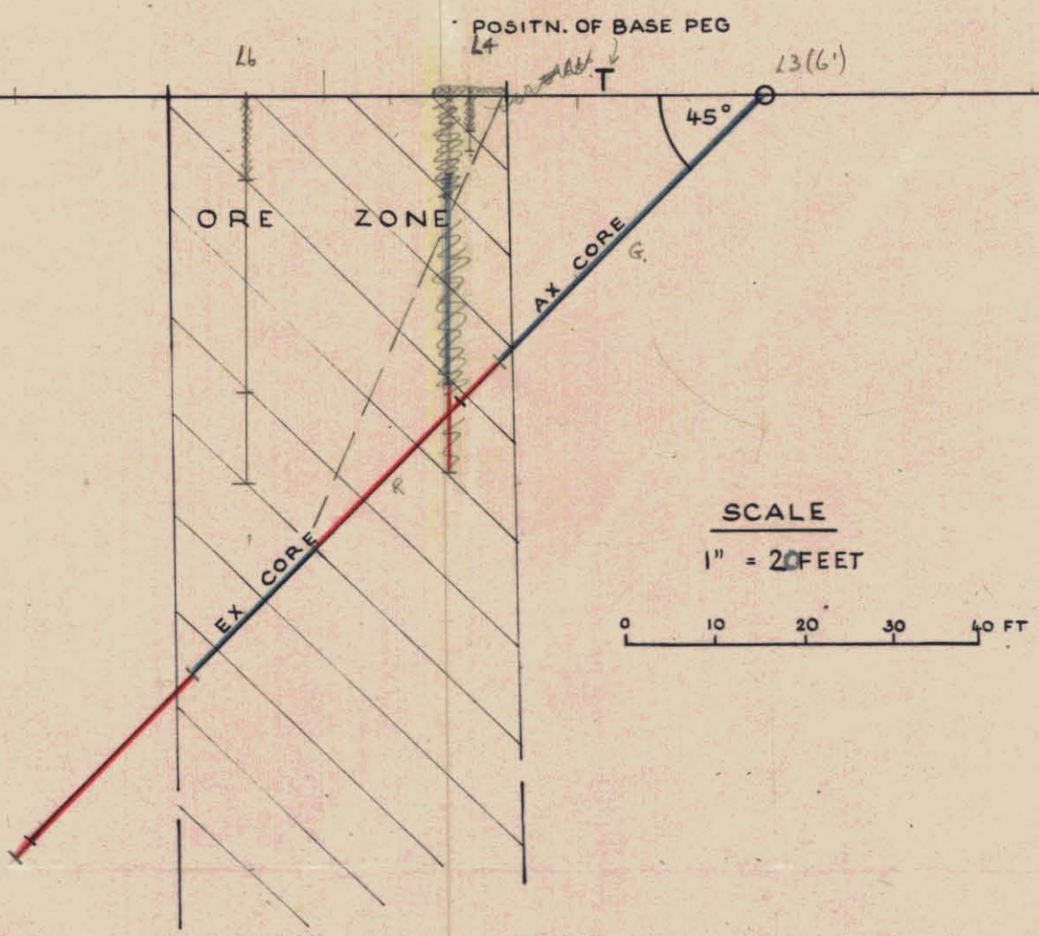
023

482018

PROPOSED DIAMOND DRILLING PELIAS COVE
EAST-WEST SECTION
LOOKING SOUTH

EAST

WEST



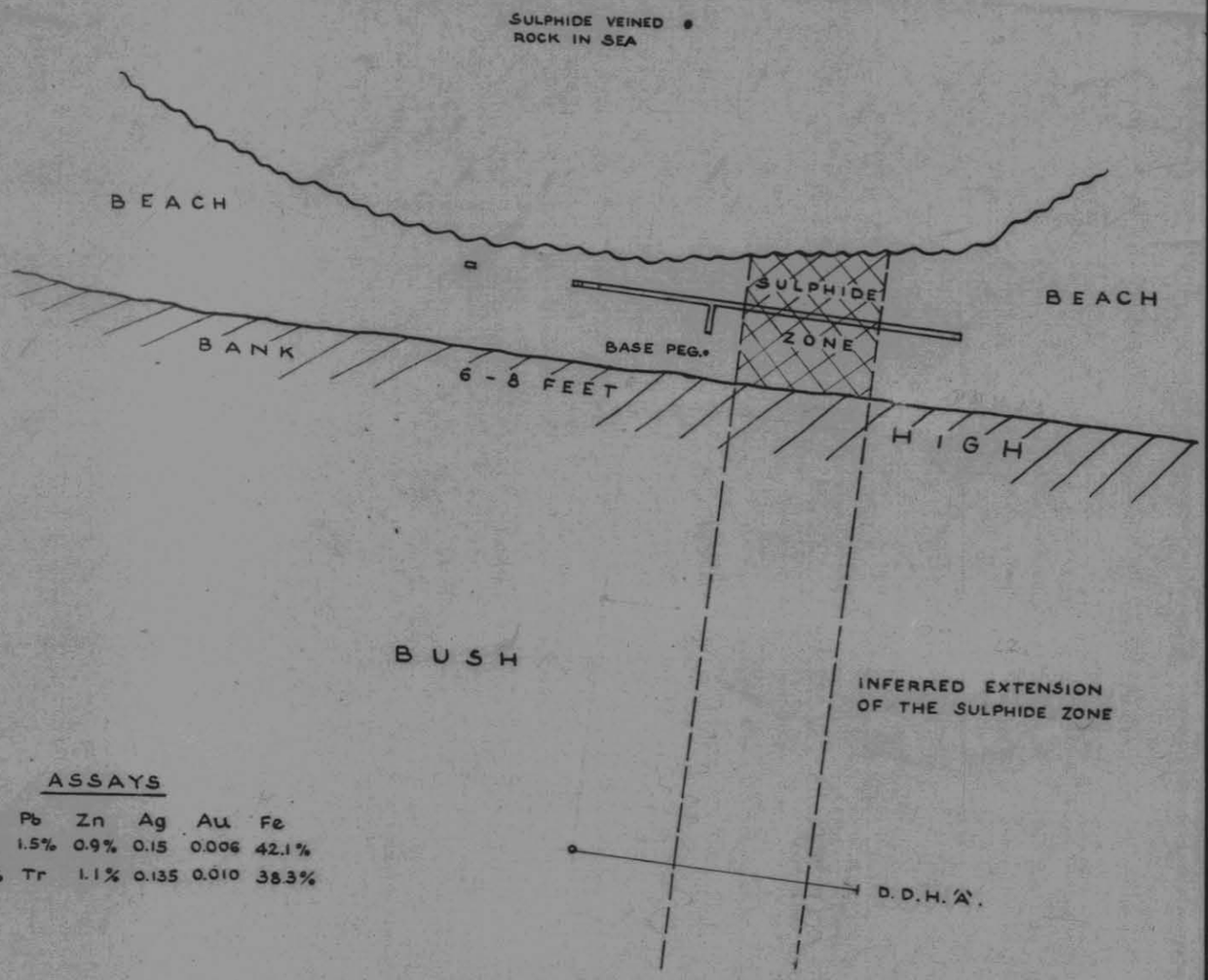
5 cm

L.E.E.
P 15

025

482019

PELIAS COVE PROSPECT
PROPOSED DRILLING



ASSAYS

Cu	Pb	Zn	Ag	Au	Fe
0.2%	1.5%	0.9%	0.15	0.006	42.1%
0.04%	Tr	1.1%	0.135	0.010	38.3%

GOLD AND SILVER IN OZS/TON →

BY WIDTH, THE SULPHIDE ZONE ON THE BEACH IS 50% SULPHIDE

BUSH

D. D. H. 'B'

BUSH

N

1" = 50 FEET

D. D. H. 'C'

5 cm

L.E.E.
P 16