ANNUAL REPORT 1983

EL 2540, EL 2981 AND THE AREA
RETAINED UNDER GOLD MINING LEASES

REPORT NO. 2
RECONNAISSANCE SOIL GEOCHEMICAL SURVEY -
RELINQUISHED PART OF EL 2540

SINCE THIS REPORT ONLY DEALS WITH THE RELINQUISHED PART OF THE LICENCE AREA, ZAPOPAN CONSOLIDATED PTY. LTD. HEREBY AGREES THAT IT MAY BE EXAMINED BY ANY PERSON UNDER SECTION 35 OF THE MINING ACT.

ZAPOPAN CONSOLIDATED PTY. LTD.

CR84/2

CONTENTS

1. INTRODUCTION

The Annual Report on exploration work carried out by Zapopan Consolidated Pty. Ltd. and the joint venture partner during the 1983 field season in the area of Exploration Licences and a group of Gold Mining leases around the Zapopan mine is composed of the following four separate reports.

REPORT NO. 1 - RECONNAISSANCE SOIL GEOCHEMICAL SURVEY
- RELINQUISHED PART OF EL 2981

REPORT NO. 2 - RECONNAISSANCE SOIL GEOCHEMICAL SURVEY
- RELINQUISHED PART OF EL 2540

REPORT NO. 3 - EXPLORATION IN RETAINED PART OF EL 2981

REPORT NO. 3 - EXPLORATION IN RETAINED PART OF EL 2540

This report is one of the above four reports and concerns soil geochemical work carried out in the relinquished part of EL 2540.

The work was scheduled and carried out by the writer, the undersigned.

M. Sakurai, DIRECTOR
ZAPOPAN CONSOLIDATED PTY. LTD.

2. RECOMMENDATION

No anomalies were detected in the area. The area should be relinquished.

3. AREA AND TITLE

EL2540 was granted to M. Sakurai on 12th December 1980 and transfer to the Company was approved on 22nd May 1981. It was composed of an area of 19 km^2 or 6 EL blocks in 1983. Half of them are subject to relinqish on 11th December 1983.

4. LOCATION AND ACCESS

The area is situated approximately 130 km due southeast of Darwin or 174 km from Darwin along the Stuart Highway and the Fountain Head Road (Fig. 1). Any sites of the area are accessible during the dry season with a four wheel drive vehicle.

The access routes and distance from Darwin to the area are as follows.

Darwin to Adelaide River - Stuart Highway	114 km
Adelaide River to Fountain Head turnoff - Stuart Highway	48 km
Fountain Head turnoff to Fountain Head - Fountain Head Road	11 km
Fountain Head to the area - track	1 km
TOTAL	174 km

5. GEOLOGICAL SETTING

The area is situated in Pine Creek Geosyncline of the Lower Proterozoic age and lies in the southern outskirts of the Burnside Granite cupola. Any outcrops are very scarce in the area. General geological setting in this locality is described as follows.

The oldest unit is the South Alligator Group. The unit, about 5,000 metres thick, consists of pyritic black shale and siltstone, chert banded siltstone, algal carbonate, banded iron formation, jaspilite and tuff.

The South Alligator Group is intruded by basic sills and dykes (Zamu Dolerite). The Zamu Dolerite is folded together with the sediments.

The South Alligator Group is overlain by the Finniss River Group. The unit, 1,500 to 5,000 metres thick, consists of siltstone, slate and minor aukose, quartzite and schist.

All the formations are intruded by the Carpentarian granites, one of which is the Burnsite Granite. The intrusive granite activity brought about intensive folding in the region.

It appears that most of the report area is covered by the South Alligator Group.

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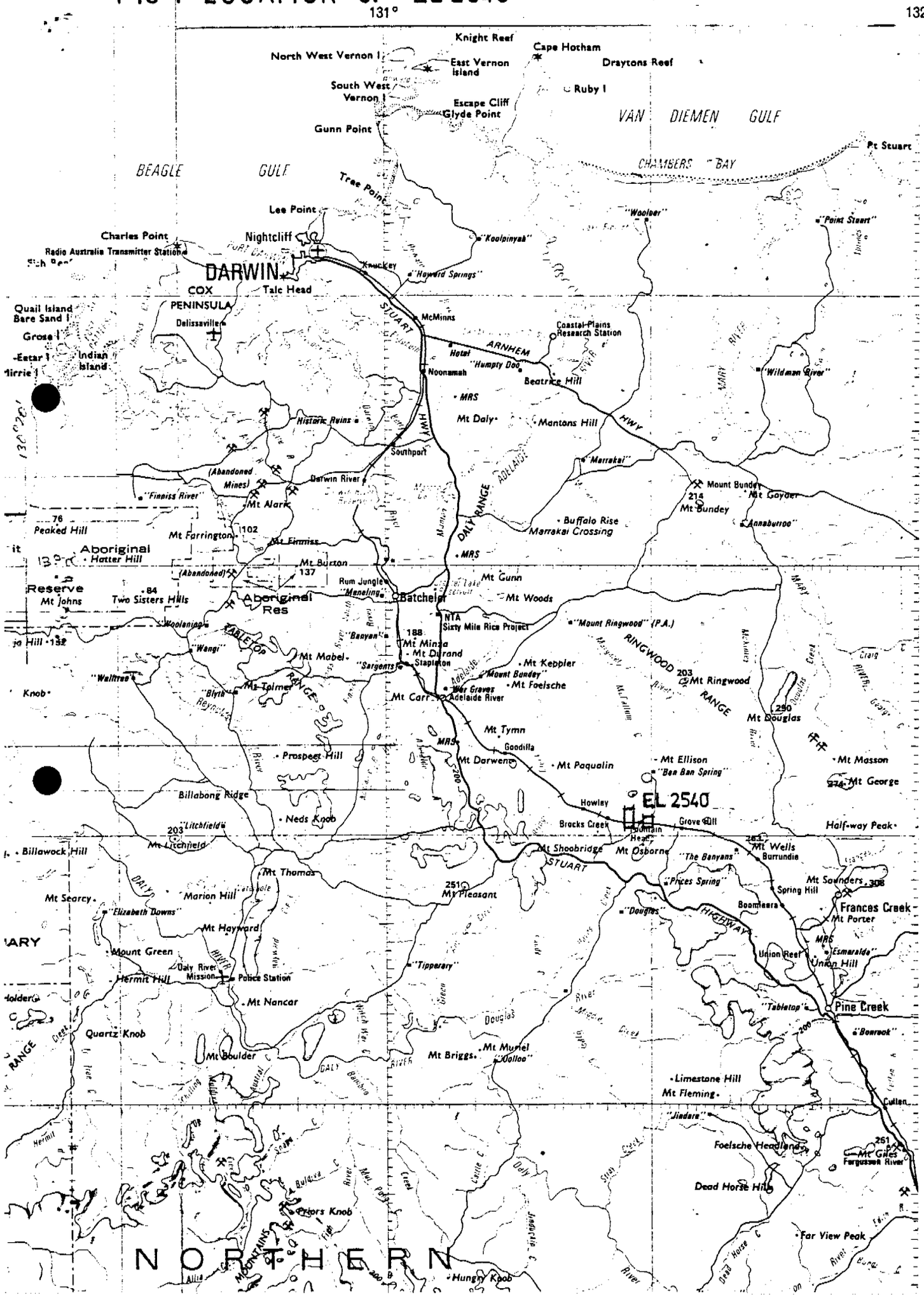
FIG 1 LOCATION OF EL 2540



6. PURPOSE AND MEANS OF APPROACH

Gold deposits have been sought in the area. The Company's work procedure in any area outside a 1 km radius of the New Zapopan shaft is given on the chart (Fig. 2). The first step of the procedure is reconnaissance soil geochemical work using arsenic as pathfinder and represents the work contained in this report.

7. SOIL SAMPLING

Soil samples were collected at 200 metres intervals along two lines. Distance between holes was relied upon vehicles speedmetre.

Holes up to 0.4 metres were prepared by manual means. The general rule was to dig holes to 0.4 metres but, where it was not practicable, the digging was stopped before reaching 0.4 metres. B soil horizon was recognised without exception. Samples were sieved with a 40 mesh screen and were sent to Analabs for spectrographical analysis.

8. ASSAY RESULTS

(a) All the assay results are listed in Table 1.

(b) Certificate of Analysis by Analabs is attached as Appendix 1.

(c) The results are also plotted on the map (Fig. 3).

Arsenic

In addition to 14 samples from the area, 141 samples were collected in the areas of EL's 2478, 2569, 2981 and 3505. The median (M), the mean (X) and the standard deviation (S) of arsenic content in 155 samples are given as follows. The mean and the standard deviation are calculated by two methods. The details of calculation are shown in Appendix 2.

M = 3.8 ppm As

Method 1

X = 9.7 ppm As ---------- X1

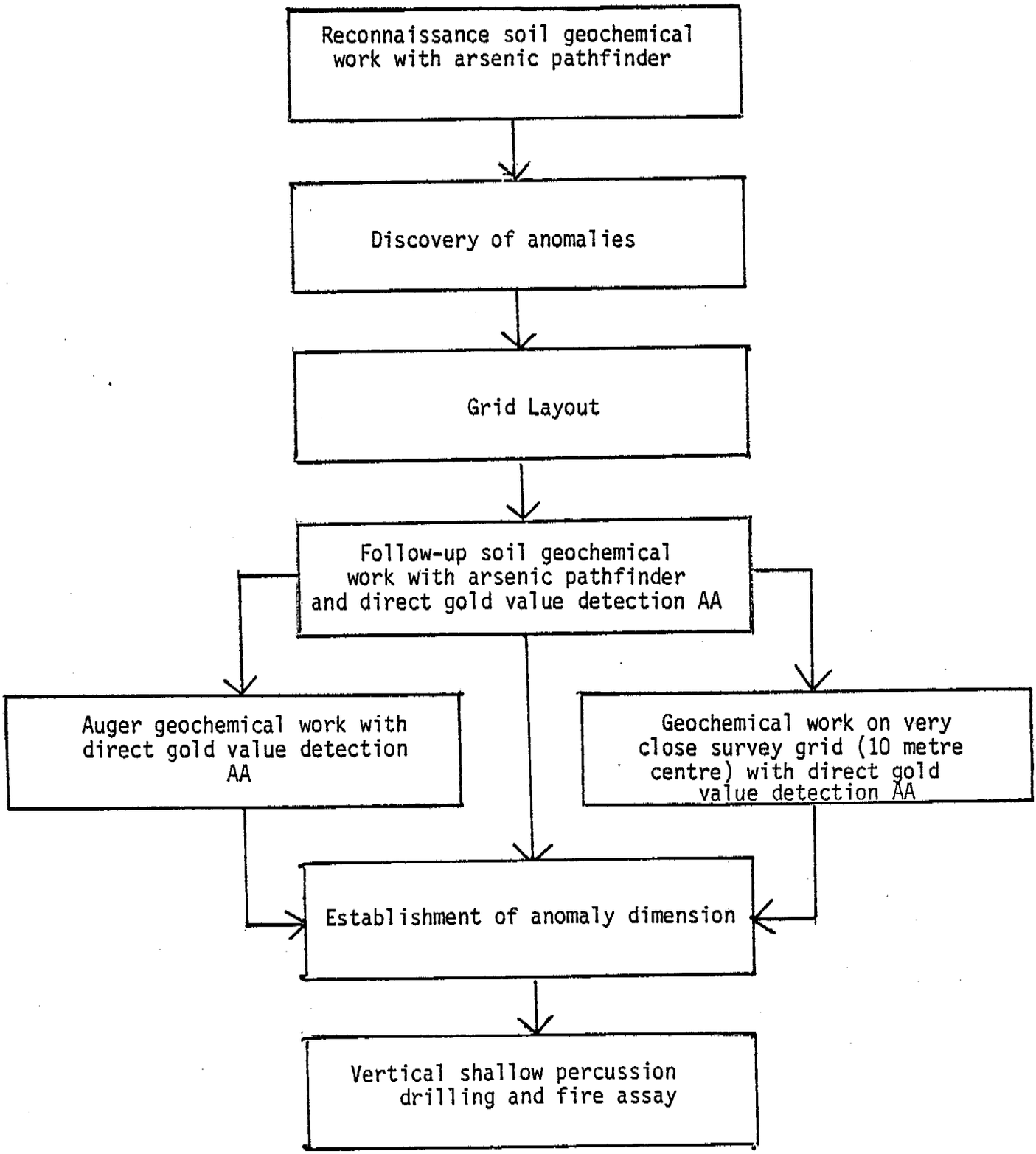
S = 16.8 ppm As --------- S1

Method 2

X = 10.6 ppm As ---------- X2

S = 16.1 ppm As ---------- S2

Fig. 2 OUTSIDE EXPLORATION PROCEDURE

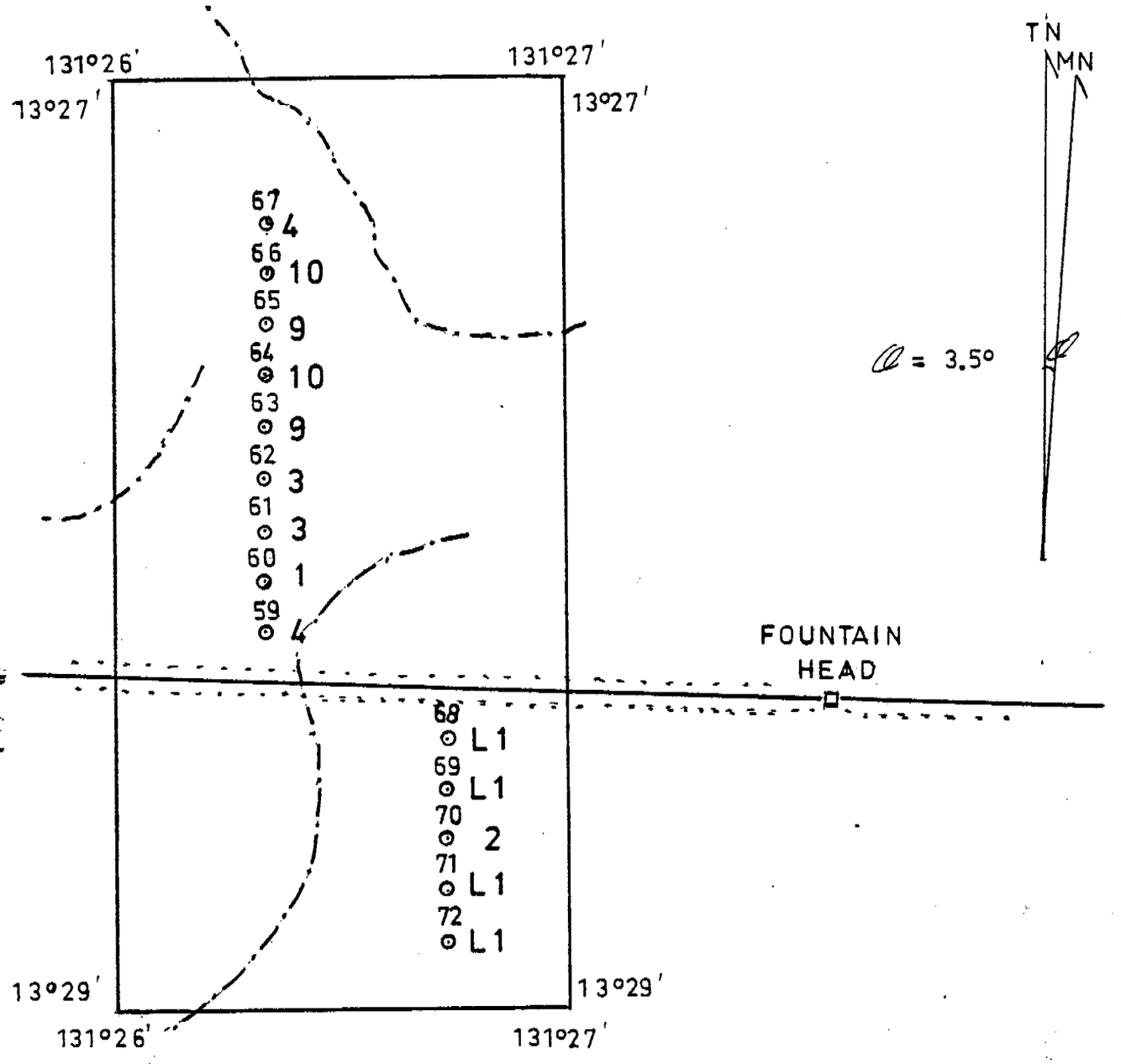


AA: Spectrographical method

Table 1 - Assay Results

Sample No. Z83	As (ppm)	Sampling Depth (m)	Remarks
59	4	0.4	Yellow clay
60	1	0.4	Yellow clay
61	3	0.4	Yellow brown gravel
62	3	0.4	Yellow brown gravel
63	9	0.4	Brown gravel
64	10	0.3	Yellow brown gravel
65	9	0.4	Yellow brown gravel
66	10	0.4	Yellow brown gravel
67	4	0.4	Buff gravel
68	L1	0.4	Yellow brown clay
69	L1	0.4	Buff clay
70	2	0.4	Brown gravel
71	L1	0.4	Yellow brown gravel
72	L1	0.4	Buff clay

FIG 3 GEOCHEMICAL SOIL SURVEY - ARSENIC



67 ---------- SAMPLE NO
4 ---------- As PPM

0 1 (KM) 2 3

SCALE 1:25,000

A mean background value is considered as the median and, therefore, is 3.8 ppm As. A threshold value (T) is taken as the mean plus twice the standard deviation. It is given as follows:-

$$T = \frac{(X1 + 2S1) + (X2 + 2S2)}{2}$$

$$= \frac{(9.7 + 2 \times 16.8) + (10.6 + 2 \times 16.1)}{2}$$

$$= 43$$

A threshold value of 43 ppm As is estimated. No samples in the area fall within the value range greater than the threshold. No anomalous arsenic values are detected in the area.

9. CONCLUSION

The reconnaissance soil geochemical work was carried out in the area. Arsenic was used as pathfinder of gold mineralisation. No arsenic anomalies were located in the area. The area should be relinquished on 11th December 1983.

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

APP 1

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
Z	247.0 14 0739	14.12.83		1 OF 1

TUBE No.	SAMPLE No.	As
1	83-59	4
2	83-60	1
3	83-61	3
4	83-62	3
5	83-63	9
6	83-64	10
7	83-65	9
8	83-66	10
9	83-67	4
10	83-68	x
11	83-69	x
12	83-70	2
13	83-71	x
14	83-72	x
15		
16		
17		
18		
19		
20		
21		
22		
23	DETECTION	1
24	DIGESTION	101
25	METHOD	1,14

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

APPENDIX 2 - CALCULATION - MEDIAN, MEAN AND STANDARD DEVIATION

Frequency, cumulative frequency and cumulative proportion distribution of arsenic contents in 155 samples are given in the Table APP 1. The median reads as 3.8 ppm on the table.

The variance is calculated in the Table APP 2 (Method 1) and APP 3 (Method 2).

Method 1

From the Table APP 2

$\Sigma fx = 1{,}507.9$ X: Mean

$\Sigma fx^2 = 58{,}626.19$ S: Standard deviation

$$X = \frac{fx}{n} = \frac{1{,}507.9}{155} = 9.7$$

$$S^2 = \frac{\Sigma fx - \frac{(\Sigma fx)^2}{n}}{n} = \frac{58.626.19 - \frac{(1{,}507.9)^2}{155}}{155} = 283.59$$

$$S = 16.8$$

Method 2

From the Table APP 3

$\Sigma fx = 1{,}647.5$ X: Mean

$\Sigma fx^2 = 57{,}708.75$ S: Standard deviation

$$X = \frac{\Sigma fx}{n} = \frac{1{,}647.5}{155} = 10.6$$

$$S = \frac{\Sigma fx - \frac{(\Sigma fx)^2}{n}}{n} = \frac{57{,}708.75 - \frac{(1{,}647.5)^2}{155}}{155} = 259.3$$

$$S = 16.1$$

TABLE APP 1 FREQUENCIES, CUMULATIVE FREQUENCIES AND CUMULATIVE PROPORTIONS FOR ARSENIC CONTENTS IN 141 SAMPLES

As content ppm	Frequency (f)	Cumulative frequency (cf)	Cumulative proportion % (cp)
<1	19	19	12.2
1	15	34	21.9
2	24	58	37.4
3	13	71	45.8
4	8	79	51.0
5	6	85	54.8
6	6	91	58.7
7	4	95	61.3
8	9	104	67.1
9	8	112	72.3
10	6	118	76.1
11	3	121	78.1
12	4	125	80.6
13	4	129	83.2
14	2	131	84.5
15	3	134	86.5
16	1	135	87.1
18	1	136	87.7
19	1	137	88.4
20	1	138	89.0
21	1	139	89.7
22	1	140	90.3
23	1	141	91.0
24	2	143	92.3
25	1	144	92.9
30	3	147	94.8
40	1	148	95.5
45	1	149	96.1
50	1	150	96.8
52	1	151	97.4
74	1	152	98.1
85	1	153	98.7
100	1	154	99.4
120	1	155	100

TABLE APP 2 CALCULATION OF THE VARIANCE FROM THE FREQUENCY DISTRIBUTION OF ARSENIC CONTENTS IN 155 SAMPLES (METHOD 1)

As content ppm (x)	Frequency (f)	(fx)	(fx^2)
<1 (0.1)	19	1.9	0.19
1	15	15	15
2	24	48	96
3	13	39	117
4	8	32	128
5	6	30	150
6	6	36	216
7	4	28	196
8	9	72	576
9	8	72	648
10	6	60	600
11	3	33	363
12	4	48	576
13	4	52	676
14	2	28	392
15	3	45	675
16	1	16	256
18	1	18	324
19	1	19	361
20	1	20	400
21	1	21	441
22	1	22	484
23	1	23	529
24	2	48	1152
25	1	25	625
30	3	90	2700
40	1	40	1600
45	1	45	2025
50	1	50	2500
52	1	52	2704
74	1	74	5476
85	1	85	7225
100	1	100	10000
120	1	120	14400
		1,507.9	58,626.19