



GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

OPEN FILE

EXPLORATION LICENCE 2127
FINAL REPORT INCLUDING ANNUAL REPORT
FOR FOURTH YEAR OF TENURE
AUGUST 1983
ON BEHALF OF
URANGESELLSCHAFT AUSTRALIA PTY LTD

BY
P. A. WILSON

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1. INTRODUCTION

1.1. Tenure

Exploration Licence E.L. 2127 was granted to Urangesellschaft Australia Pty Ltd (UGA) on the 21st August, 1979. UGA conducted an exploration programme orientated primarily towards Uranium mineralisation. The licence area was diminished by fifty per cent on August 20th, 1981 which resulted in the retention of 16.6 square kilometres.

Geopeko became the operator of the licence area following a farm-in agreement between UGA and the Peko Wallsend/Anaconda Joint Venture. This is the Annual Report for the 4th year of tenure and has been prepared on behalf of the Licencees by Geopeko.

1.2. Location and Access

E.L. 2127 is located on the 1:100 000 Tipperary Sheet (No 5170) and is 10 kilometres south of the Stuart Highway and immediately ~~east~~^{NORTH} of Plateau Point (figure. 1). Access is by tarmac road as far as the abandoned Fenton airfield and then west along a fence track for 7 kilometres. Consequently access is essentially limited to the dry season.

1.3. Geological Setting

The geology of E.L. 2127 has been described in full by Nicholson and Radford (1982) and the broader regional setting by Walpole et. al (1968) and by Glasson (1980). A northerly plunging anticline consisting of metasediments of the Mt. Partridge and overlying South

Alligator River Group crop out in the licence area. A detailed stratigraphy and simplified geological map of the E.L. are presented in figures 2 and 3 respectively.

1.4. Previous Work

The exploration conducted by UGA has been fully reported by Pearson (1981). Subsequent work by Geopeko has been directed towards locating stratiform gold and base metal deposits in the Koolpin Formation of the South Alligator River Group. This work forms part of a broader regional exploration programme being carried out by the Peko Wallsend - Anaconda Joint Venture.

Nicholson and Radford (1982) have reported the findings of the preliminary exploration of E.L. 2127 which involved geological mapping, stream sediment sampling and rock sampling. Results from the 40 stream sediment samples which were collected were generally disappointing in a regional context. However, anomalous Sn in stream sediments draining Middle Koolpin lithologies was recommended for further investigation.

A gossanous outcrop was located during mapping in the south-western boundary of the licence and chip samples returned analyses which averaged over 5% Pb and 0.5% Zn.

The gossan occurs within a sequence of interbedded carbonaceous mudstones, muscovite phyllites and iron formation assigned to the Koolpin Formation. They are folded into a northerly plunging anticline and the gossan outcrops on the western limb adjacent to, and probably straddling, the E.L. boundary (Nicholson and Radford, 1982).

2. 1983 PROGRAMME

2.1. Introduction

The 1983 exploration programme involved the surveying of a small grid centred on the gossan outcrop. Soil sampling, geological mapping a costeaning programme and magnetometric survey were completed over the gridded area.

As a consequence of the uncertainty in the exact location of the main gossan outcrop with respect to the E.L. boundary Mr. D. Ronan, the holder of the adjacent E.L. 1747 was approached. It was agreed with Mr. Ronan for Geopeko to conduct a small exploration programme and to have first offer on an option agreement dependent upon the findings of the reconnaissance work.

2.2. Geology of Gridded Area

A 500 x 300 metre area was gridded by tape and compass and was centred on the main northerly striking gossan outcrop.

A geological plan of the gridded area is presented in Figure 4. The area is flat-lying and is drained by two north-westerly trending, poorly incised streams. An area of positive relief in the central part of the gridded area reflects the main area of gossan outcrop.

Purple-brown weathering, ferruginous muscovite phyllites outcrop on the eastern part of the grid and are overlain to the west by a 1-2 metre wide unit of siliceous iron formation. The iron formation is composed of saccharoidal quartz, and is extensively stained by hematite and botryoidal manganese oxides. Occasional

patches of 'gossan' occur intermittently along the main outcrop. Coarse skeletal boxworks after galena were noted at two locations and galena and cerrussite observed at 1005N 1000E.

To the west of the iron formation a number of outcrops of iron-stained carbonaceous mudstone occur. These contain 2-5 metre long pods or blows of sugary quartz.

Bedding in the sediments strikes north-south and dips steeply to the east, indicating the anticlinal limb is locally overturned.

2.3. Geochemistry

Two rock chip samples collected across outcrops of the iron formation and carbonaceous mudstone furnished the following results:-

| Sample No. | Location | Results (ppm and % | | | | |
|------------|---------------|--------------------|------|-----|----|-----|
| | | Pb | Zn | Cu | Ag | Ba |
| GS 21301 | 10140N 10020E | 17.9% | 0.6% | 70 | 10 | 560 |
| GS 21302 | 10000N 10000E | 300 | 65 | 110 | 1 | 250 |

99 soil samples were collected using a Jacro 100 power auger mounted on a Toyota Landcruiser. The samples were collected at 25 metre centres along the 100 metre spaced grid lines and along the base line which parallels the 'gossan' outcrop. Sample depth was \pm 1 metre corresponding to C horizon material. An intermediate grid line was put in to give more detailed 50 metre coverage over the area of best outcrop.

Samples were analysed for Cu, Pb, Zn, Ba, Fe and Mn by AAS (perchloric acid digestion). Pb and Zn results are

presented in contoured form in Figures 5 and 6 and detailed assay listings are appended.

Values for Pb fall in the range of 15 ppb - 1.55%. An anomalous area measuring 20 metres x 200 metres occurs in the NE quadrant of the gridded area. Similarly a further Pb soil anomaly occurs on the southern most line and represents the strike extension of the iron formation into E.L. 1747. Zinc values generally support Pb and fall in the range 10 - 2150 ppm.

2.4. Costeans

A 63 metre long costean was excavated by backhoe across the main Pb-Zn anomaly on line 10100N. The costean geology was logged and channel samples collected at 1-2 metre intervals along the northern wall. A section summarising costean geology and geochemical results is presented in Figure. 7.

The depth of soil overburden in the costean varied from between 0.6 and 3 metres depending on the competence of the underlying bedrock. Within the costean the bedding in the metasediments dips consistently to the east at 65° indicating overturning of the western limb of the Plateau Point anticline.

From west-east, the exposed lithologies comprise rustic-brown weathering, muscovite phyllites which are underlain stratigraphically by a 1.5 metres thick carbonaceous mudstone. A 10 centimetre by 5 centimetre nodule of massive galena was observed in this mudstone unit. The mudstone is underlain by a massive siliceous unit composed of 95% sugary quartz with minor mica which corresponds to the iron formation along strike. A 12 metres thick variable sequence of banded purple to brown mudstones and thin phyllites underlies the iron formation.

Between 10032E and 10042E a Fe-Mn rich bed of black mudstone occurs, this conspicuous unit contains approximately 5-10 vol% of sugary quartz bands having a thickness of 2-10 centimetres. This is underlain by a monotonous sequence of well bedded muscovite phyllites.

Geochemical results from the channel sampling are presented graphically in Figure 7. The channel samples were analysed for Cu, Pb, Zn, Ag, Ba, Fe, Mn, Sn and Au. Lead values are distinctly anomalous in the western part of the costean and correspond with the varied lithologies which overlie the iron formation. Best lead values are:-

| | | |
|-----------|----------|------------|
| | 9 metres | @ 2.39% Pb |
| including | 3 metres | @ 4.91% Pb |

There are no supporting Ba, Ag or Au values and Zn is only moderately anomalous.

2.5. Geophysics

Total field magnetic intensities were read along all the grid lines using a Geometrics G816 precision proton magnetometer. No anomalies were detected.

2.6. Stream Geochemistry Follow-Up

A Sn drainage anomaly was investigated to ascertain the likely source of the anomaly. The anomaly occurs in a SE trending channel which drains Middle Koolpin rocks approximately equidistant between the gossan outcrop and anticlinal fold closure (Figure 2). Here Sn values of up to 400 ppm were recorded (Sample No 13714) against a local background of about 10 ppm (Nicholson and Radford, 1982).

An outcrop of quartz muscovite pegmatite was observed some 50 metres upslope from the stream sample point. The pegmatite measured 10 metres by 2 metres in exposure and consisted of milky quartz with coarse muscovite books up to 25 centimetres across forming 5% of the pegmatite. The muscovite flakes being arranged in distinct bands defining a zonation to the pegmatite dyke. Further pegmatites were located along strike and coarse muscovite was developed in the metasediments adjacent to the pegmatite contact.

Five rock chip samples were collected from the pegmatite and adjacent country rocks:-

| <u>Sample No.</u> | <u>Description</u> | <u>Sn Content</u> |
|-------------------|--|-------------------|
| 23003 | Muscovite pegmatite centre of outcrop | x |
| 23004 | Coarse pegmatite large mica books | x |
| 23005 | Muscovite phyllite pegmatite contact | x |
| 23006 | Gossionous sediment pegmatite contact | x |
| 23007 | Pegmatite margin of dyke | x |

All samples returned values below the detection limit of 1 ppm Sn.

3. SUMMARY AND CONCLUSIONS

A limited soil sampling, geological mapping and costeaning programme centred on an outcrop of gossan in the SW boundary of E.L. 2127 has shown Pb mineralisation to be stratiform and associated with a ± 5 metre sequence of interbedded carbonaceous mudstone and siliceous iron formation.

The soil geochemical survey shows the mineralised unit has a strike potential in excess of 500 metres. However there is little evidence in the stream geochemical results and regional rock chip sampling to support the likelihood of an economically significant mineralised body being present. Furthermore the general absence of supporting precious metal values and of significant zinc values effectively downgrades the economic potential of the lead rich zone.

The geochemical results from the Jacro sampling were not reproduced in the costean to the east of the main iron formation outcrop. In fact costean values here fall in the range of ± 300 ppm Pb and ± 1500 ppm Zn. Examination of the deep soil profile above the muscovite phyllites (1.5 - 3 metres) suggests the Jacro did not penetrate true C horizon material but intersected scree downslope from the competent iron formation and carbonaceous mudstone units. This finding casts a degree of doubt on the postulated strike extent and continuity of the Pb mineralisation based on soil geochemistry alone.

Although the geochemical results from the rock chip sampling of the pegmatite outcrop returned Sn values below the limit of detection it is felt this is the most likely primary source of the tin.

4. EXPENDITURE

Expenditure on the tenement during the fourth year of tenure has totalled \$21,293 to the 30th June, 1983. A breakdown of the expenditure is attached as Appendix 3.

5. RECOMMENDATIONS

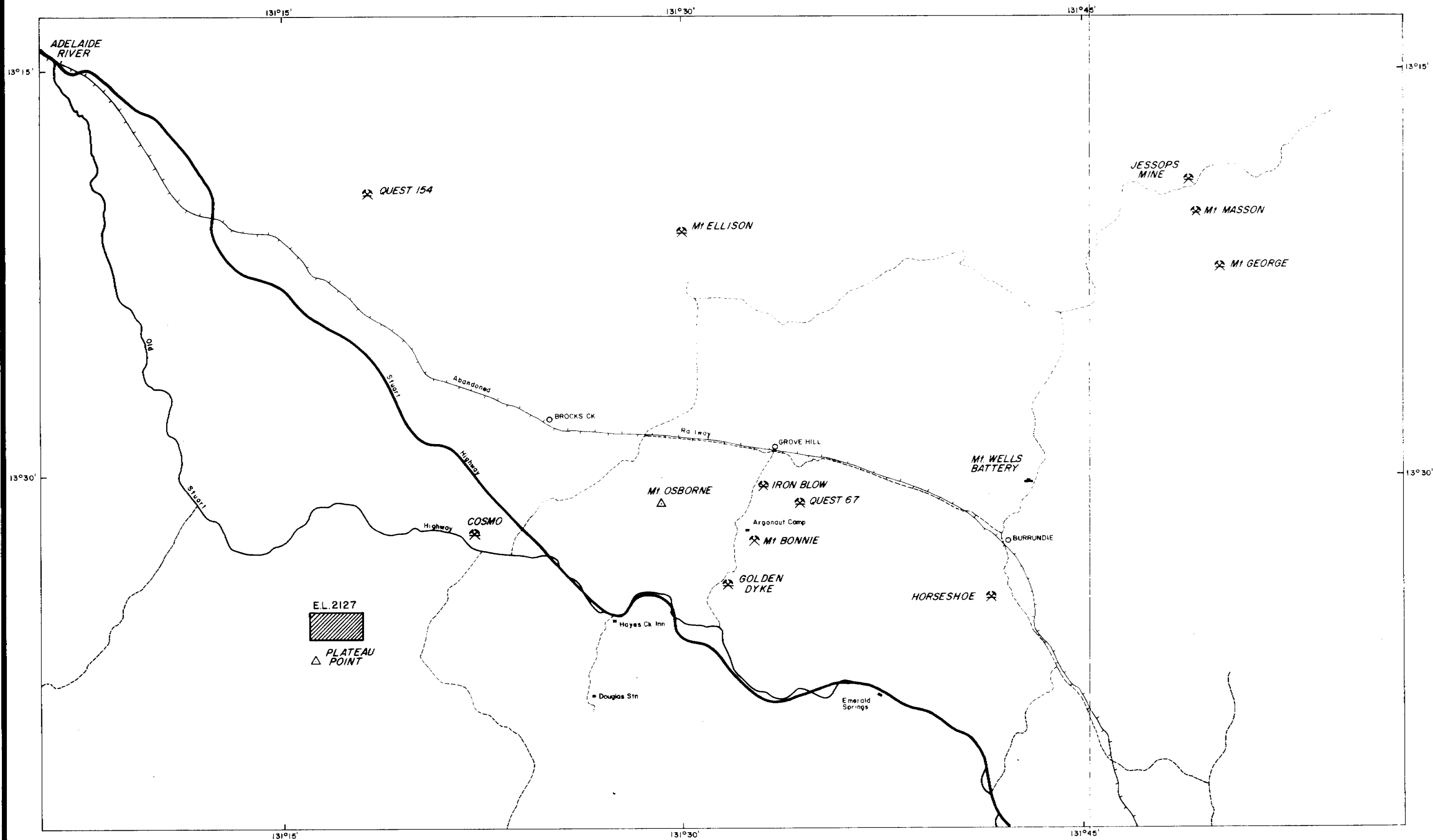
It is recommended that no further work be conducted on E.L. 2127. The results of the 1982 stream sediment sampling and rock chip sampling programmes effectively downgrade the potential of the Plateau Point area for Au and base metal sulphide deposits.

6. REFERENCES

GLASSON. M., (1980) - Annual Report, 1980 E.L. 2127, N.T.

NICHOLSON, P. and RADFORD, N. (1982) E.L. 2127 Annual
Report for 1982

WALPOLE, B.P., CROHN, P.W. DUNN, P.R. and RANDAL M.A. (1968)
Geology of the Katherine Darwin Region
N.T. Australia B.M.R., Bull. 1982



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0 5 10km

FIG. No. 1

PROJECT

GOLDEN DYKE JOINT VENTURE

AREA

PLATEAU POINT - E.L.2127

DATA

LOCATION PLAN EL2127

SCALE

COMPILED

DATE

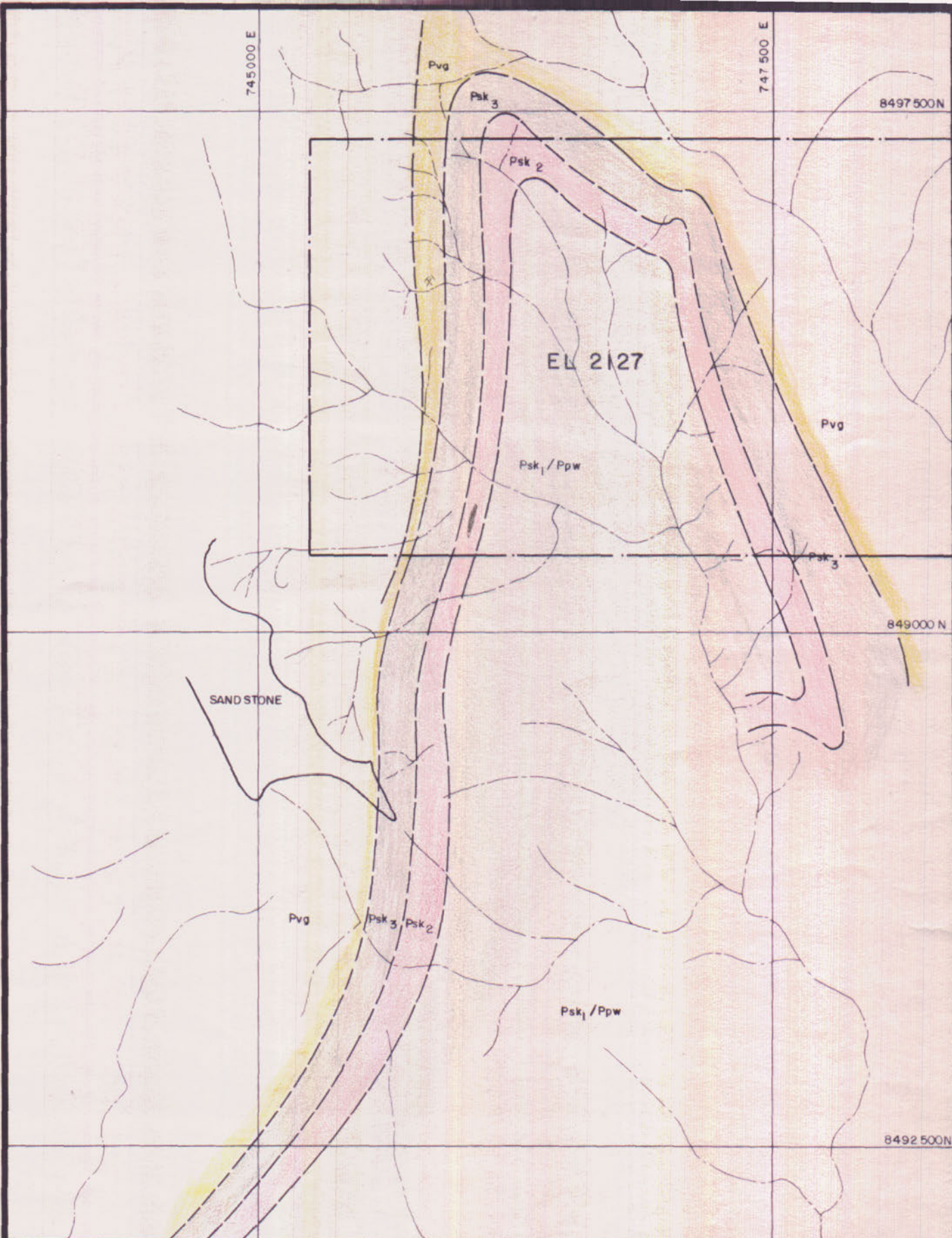
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P.A.W.

JUL., 1983

R.F.



LEGEND

| | |
|------------------|---------------------------------|
| Pvg | GEROWIE TUFF |
| Psk ₃ | KOOLPIN FORMATION UPPER MEMBER |
| Psk ₂ | KOOLPIN FORMATION MIDDLE MEMBER |
| Psk ₁ | KOOLPIN FORMATION LOWER MEMBER |
| Ppw | WILDMAN SILTSTONE |



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DWG No. FIGURE 2

PROJECT

B.I.F. GOLD JV

AREA

PLATEAU POINT

DATA

GEOLOGY

SCALE

1:25000

COMPILED

P.N.

DATE

DEC '82

DRAWN

AF

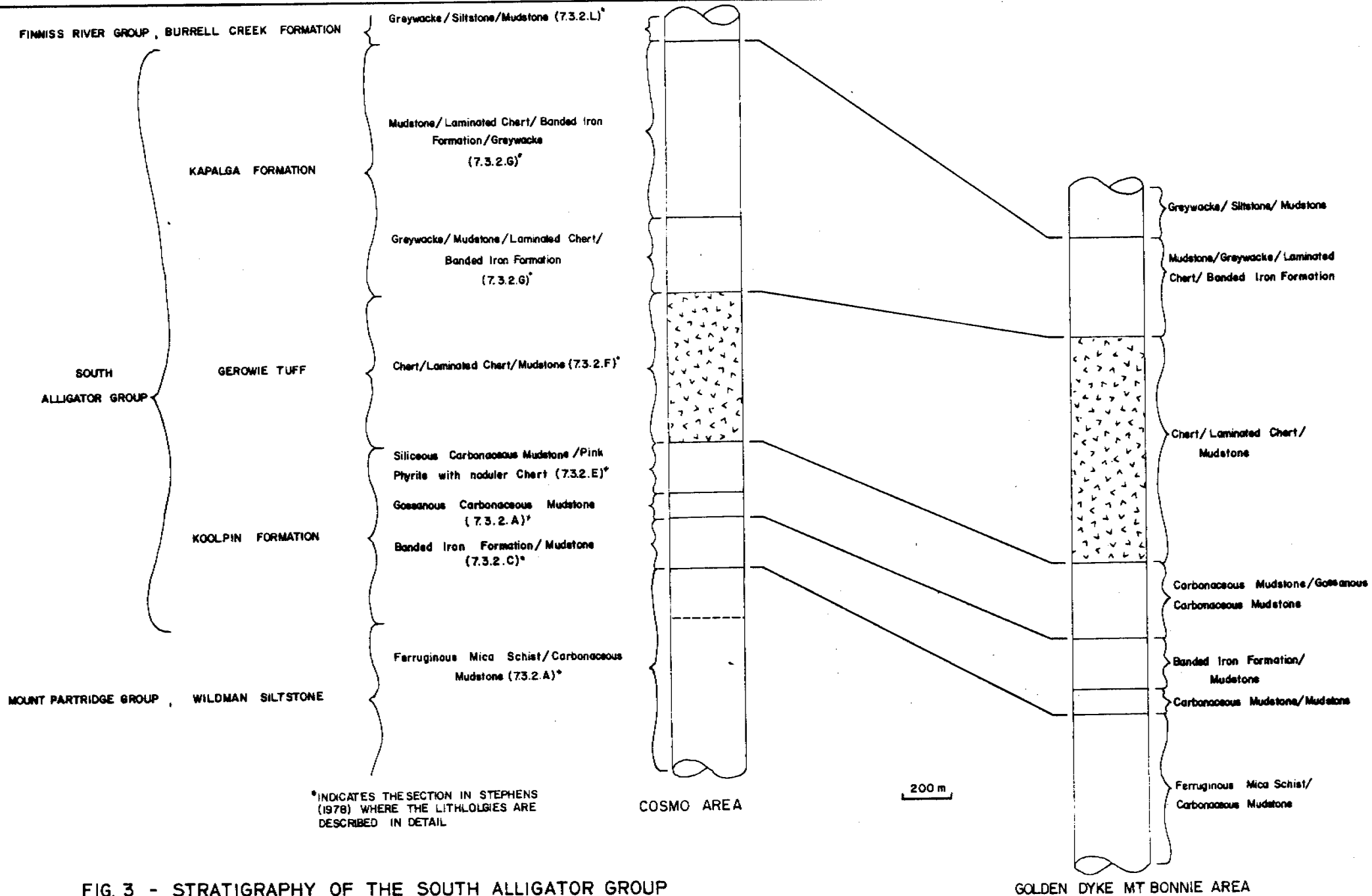
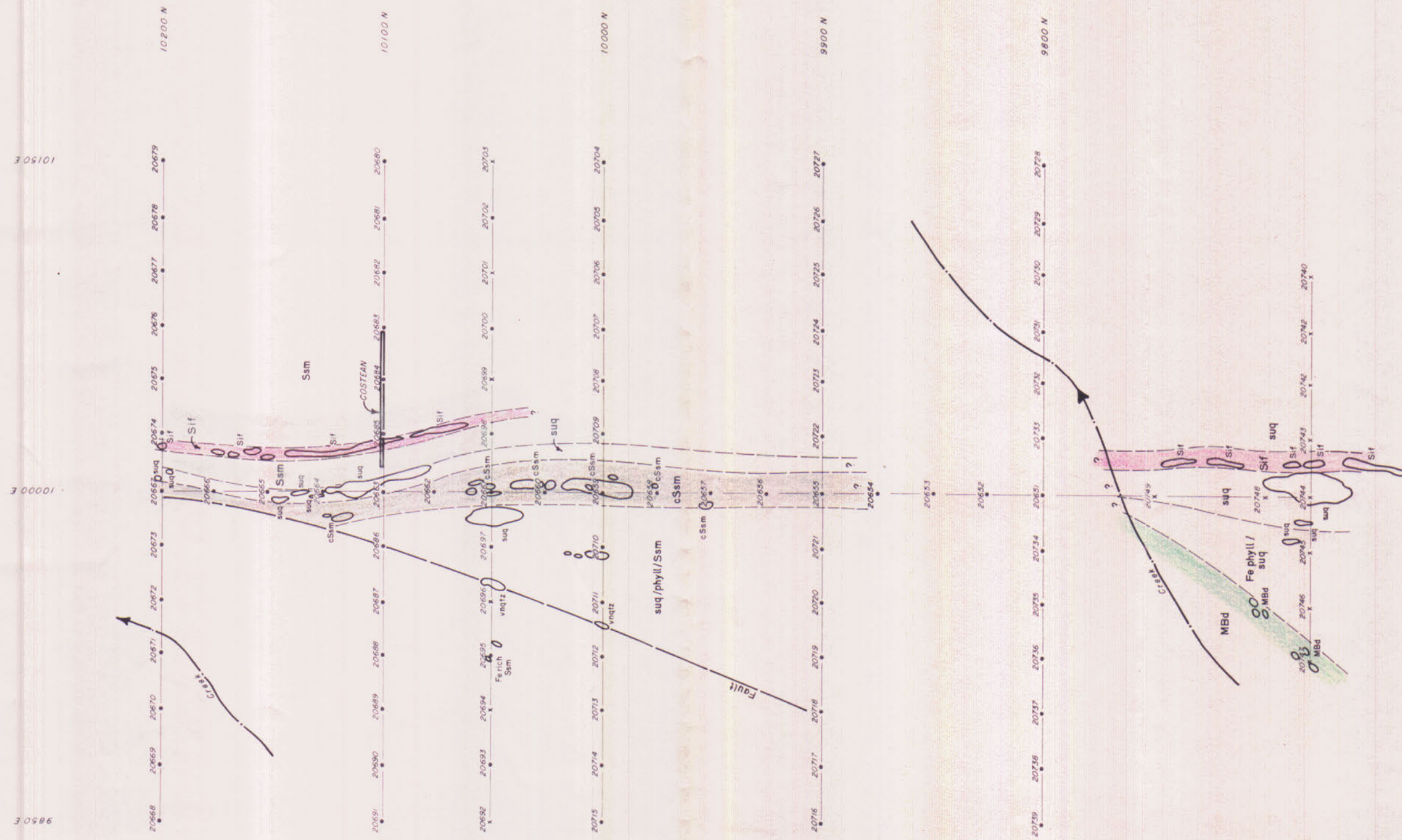


FIG. 3 - STRATIGRAPHY OF THE SOUTH ALLIGATOR GROUP



LEGEND

- Sample location - pegged tape and compass grid
- x Sample location - flagged pace and compass grid additions



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20 0 20 40 60m

FIG. No. 4

PROJECT

GOLDEN DYKE JOINT VENTURE

AREA

PLATEAU POINT - E.L. 2127

DATA

GEOLOGY

SCALE

1: 2000

COMPILED

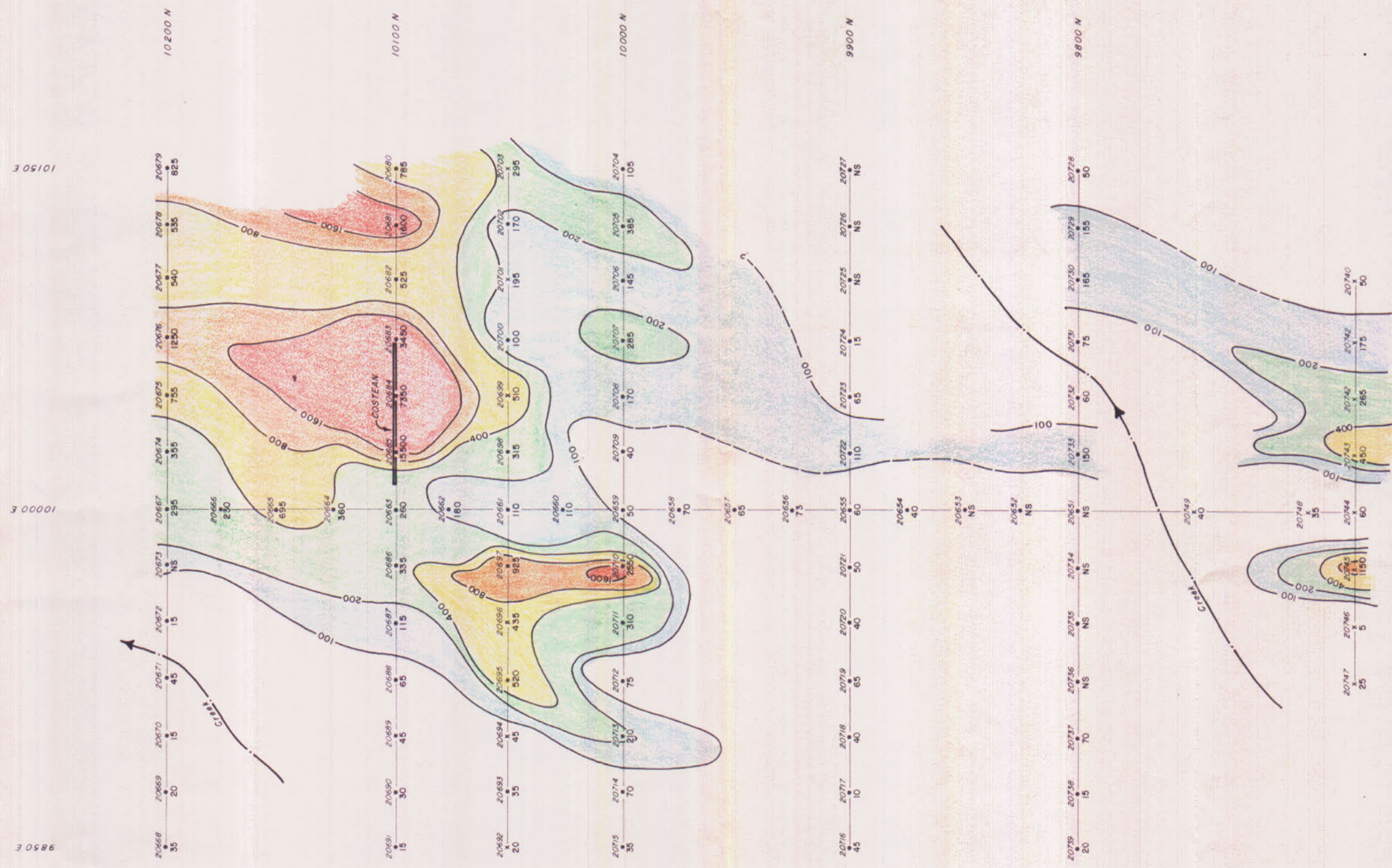
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DATE

JUNE, 1983

DRAWN

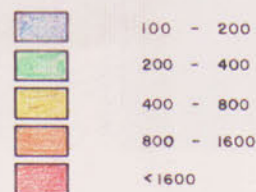
R.F.



LEGEND:

- Sample location - pegged tape and compass grid
- x Sample location - flagged pace and compass grid additions

GEOCHEMICAL CONTOURS - LEAD (values in ppm)



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FIG.No. 5

PROJECT

GOLDEN DYKE JOINT VENTURE

AREA

PLATEAU POINT - E.L. 2127

DATA

SOIL SAMPLE GEOCHEMICAL RESULTS
LEAD

SCALE

1:2000

COMPILED

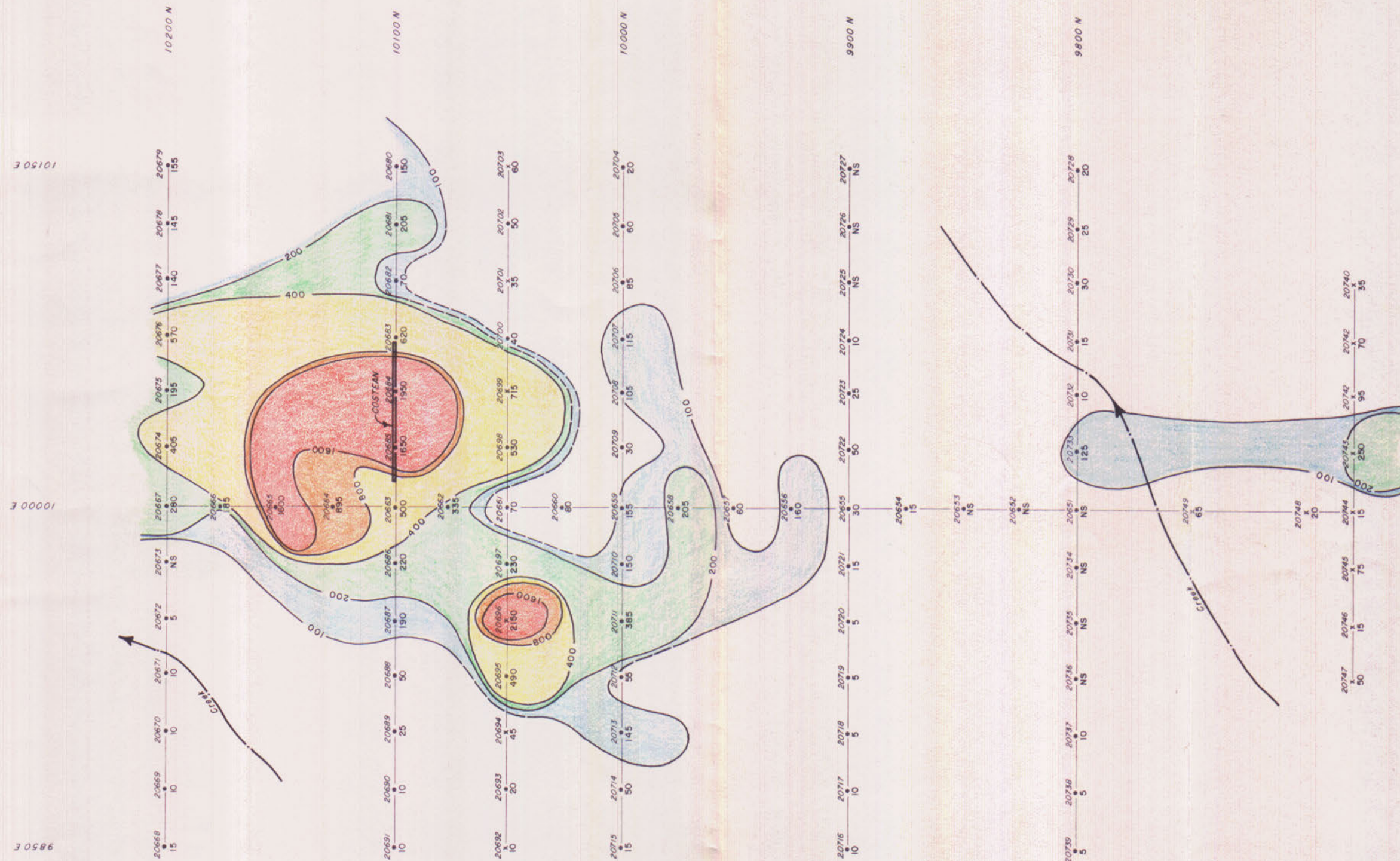
PAW

DATE

JUNE, 1983

DRAWN

R.F.



LEGEND

- Sample location - pegged tape and compass grid
- x Sample location - flagged pace and compass grid additions

GEOCHEMICAL CONTOURS - ZINC (values in ppm)



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20 0 20 40 60m

FIG. No. 6

PROJECT

GOLDEN DYKE JOINT VENTURE

AREA

PLATEAU POINT - E.L. 2127

DATA

SOIL SAMPLE GEOCHEMICAL RESULTS
ZINC

SCALE

1 : 2000

COMPILED

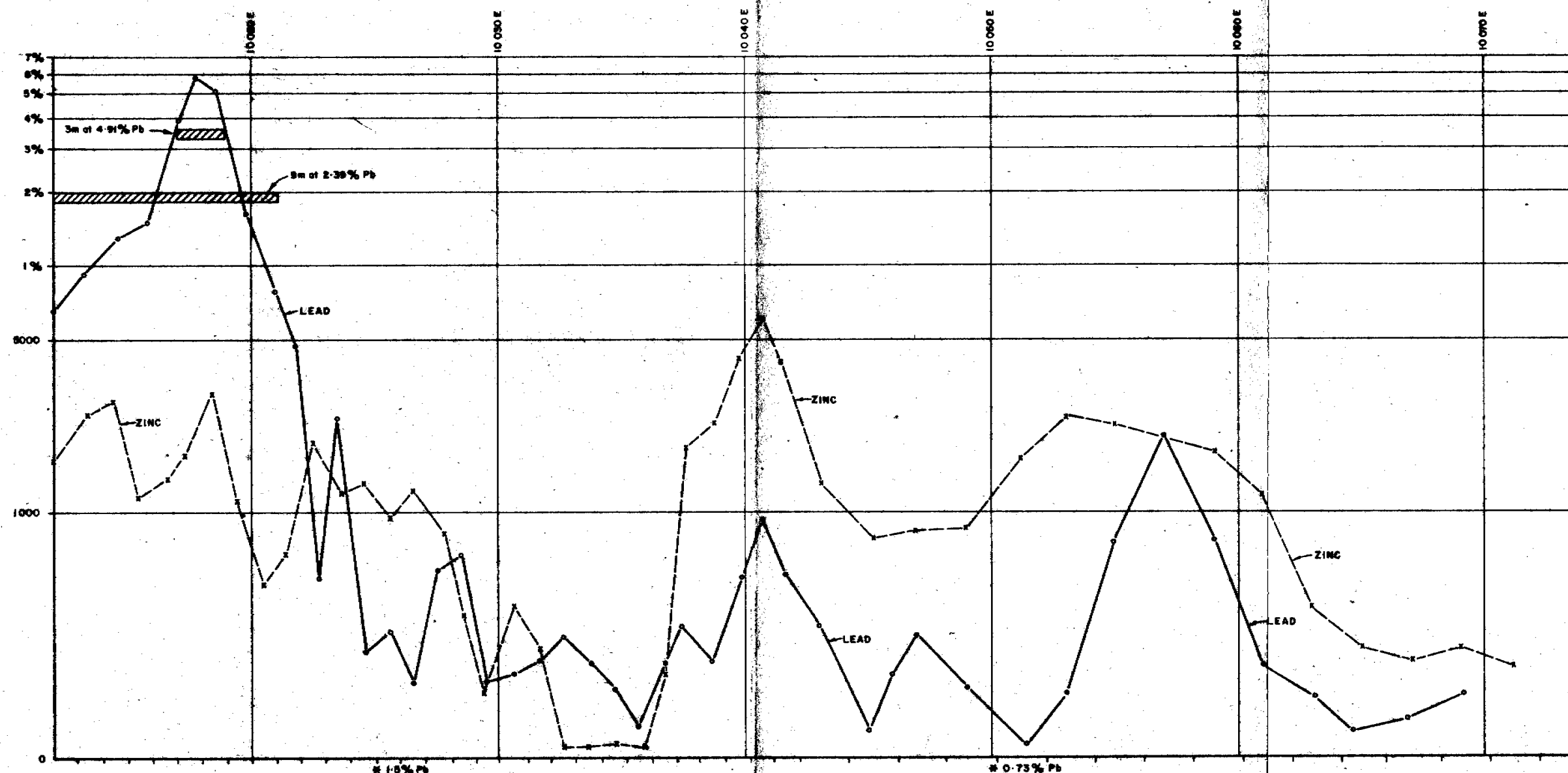
PAW

DATE

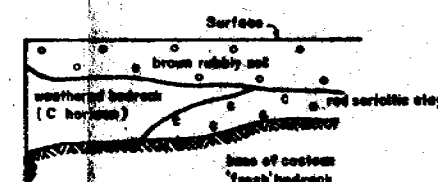
JUNE, 1983

DRAWN

R.F.



Geological profile diagram showing sample depths (0 to 4 inches) and sample numbers (20003 to 20094). The profile is divided into several units with different patterns: musc. phyllite (diagonal lines), silty sand (stippled), sandstone (horizontal lines), black shale (solid black), and Fe-Mn rich black sand (dotted). Labels indicate 'Fe-Mn rich black sand 5-6% Mn, 12-14% Fe' and 'mg-fg musc. phyllite well bedded'.



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PROFILE ALONG COSTEAN LINE 10100N

DRAWN
R.F.

APPENDIX I

Soil Geochemistry Results

Appendix 1.

ANALABS

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SOILS PLAT PT.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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| | | | | 88.8 14 390 | | | 19.5.83 | | 31256 | | 1 OF 5 | |
|----------|------------|------|------|-------------|------|------|---------|------|-------|--|--------|--|
| TUBE No. | SAMPLE No. | Mn | Fe% | Cu | Zn | Hg | Ba | Pb | | | | |
| 1 | 20654 | 45 | 1.15 | 20 | 15 | x | 210 | 40 | | | | |
| 2 | 20655 | 70 | 1.05 | 20 | 30 | 0.5 | 170 | 60 | | | | |
| 3 | 20656 | 805 | 3.75 | 100 | 160 | 1.0 | 380 | 730 | | | | |
| 4 | 20657 | 30 | 5.35 | 100 | 60 | x | 220 | 65 | | | | |
| 5 | 20658 | 90 | 6.45 | 150 | 205 | 0.5 | 250 | 70 | | | | |
| 6 | 20659 | 80 | 12.0 | 165 | 155 | 0.5 | 490 | 50 | | | | |
| 7 | 20660 | 65 | 9.45 | 95 | 80 | x | 370 | 110 | | | | |
| 8 | 20661 | 90 | 8.80 | 260 | 70 | 0.5 | 390 | 110 | | | | |
| 9 | 20662 | 670 | 6.00 | 135 | 335 | x | 430 | 180 | | | | |
| 10 | 20663 | 470 | 7.10 | 100 | 500 | 0.5 | 670 | 260 | | | | |
| 11 | 20664 | 2250 | 8.35 | 275 | 395 | 0.5 | 610 | 360 | | | | |
| 12 | 20665 | 2250 | 9.15 | 90 | 1500 | 1.0 | 700 | 635 | | | | |
| 13 | 20666 | 105 | 4.75 | 70 | 135 | x | 280 | 230 | | | | |
| 14 | 20667 | 960 | 4.15 | 35 | 280 | 0.5 | 360 | 295 | | | | |
| 15 | 20668 | 65 | 3.45 | 15 | 15 | x | 210 | 35 | | | | |
| 16 | 20669 | 40 | 1.10 | 10 | 10 | 0.5 | 160 | 20 | | | | |
| 17 | 20670 | 50 | 1.10 | 15 | 10 | x | 230 | 15 | | | | |
| 18 | 20671 | 75 | 1.85 | 15 | 10 | x | 200 | 45 | | | | |
| 19 | 20672 | 15 | 0.20 | 5 | 5 | x | 60 | 15 | | | | |
| 20 | 20674 | 4350 | 9.65 | 45 | 405 | 0.55 | 500 | 355 | | | | |
| 21 | 20675 | 9200 | 9.25 | 195 | 195 | 0.5 | 450 | 755 | | | | |
| 22 | 20676 | 5900 | 7.50 | 100 | 570 | 0.5 | 430 | 1250 | | | | |
| 23 | 20677 | 2450 | 3.55 | 50 | 140 | 0.5 | 390 | 540 | | | | |
| 24 | 20678 | 530 | 4.95 | 75 | 145 | x | 330 | 535 | | | | |
| 25 | 20679 | 4100 | 10.5 | 95 | 155 | x | 450 | 825 | | | | |

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*B. Don*

ANALABS

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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|----------|------------|-------|------|-------------|------|-----|---------|--------|-------|--|--------|--|
| TUBE No. | SAMPLE No. | Mn | Fe% | Cu | Zn | Pb | Ba | Pb | | | | |
| 1 | 20680 | 3300 | 9.75 | 120 | 150 | x | 580 | 785 | | | | |
| 2 | 20681 | 4750 | 9.60 | 135 | 205 | x | 410 | 1600 | | | | |
| 3 | 20682 | 840 | 7.15 | 225 | 70 | x | 290 | 525 | | | | |
| 4 | 20683 | 8550 | 9.85 | 110 | 620 | 0.5 | 320 | 3450 | | | | |
| 5 | 20684 | 1.25% | 14.0 | 85 | 1950 | x | 400 | 7350 | | | | |
| 6 | 20685 | 1.00% | 12.5 | 95 | 1650 | 0.5 | 390 | 1.82%* | | | | |
| 7 | 20686 | 165 | 3.90 | 105 | 220 | 0.5 | 160 | 335 | | | | |
| 8 | 20687 | 65 | 1.45 | 20 | 190 | x | 180 | 115 | | | | |
| 9 | 20688 | 235 | 2.35 | 25 | 50 | x | 270 | 65 | | | | |
| 10 | 20689 | 50 | 0.75 | 10 | 75 | 0.5 | 150 | 45 | | | | |
| 11 | 20690 | 40 | 1.10 | 15 | 10 | 0.5 | 70 | 30 | | | | |
| 12 | 20691 | 30 | 0.80 | 10 | 10 | 0.5 | 110 | 15 | | | | |
| 13 | 20692 | 55 | 1.10 | 15 | 10 | x | 160 | 20 | | | | |
| 14 | 20693 | 950 | 3.50 | 25 | 20 | x | 250 | 35 | | | | |
| 15 | 20694 | 205 | 2.70 | 20 | 45 | x | 100 | 45 | | | | |
| 16 | 20695 | 410 | 3.85 | 55 | 490 | x | 280 | 520 | | | | |
| 17 | 20696 | 930 | 3.70 | 45 | 2150 | 1.0 | 550 | 435 | | | | |
| 18 | 20697 | 40 | 2.65 | 125 | 230 | x | 290 | 925 | | | | |
| 19 | 20698 | 3250 | 10.0 | 130 | 530 | 1.0 | 770 | 315 | | | | |
| 20 | 20699 | 1.05% | 10.5 | 140 | 715 | x | 770 | 510 | | | | |
| 21 | 20700 | 800 | 5.50 | 110 | 40 | x | 590 | 100 | | | | |
| 22 | 20701 | 1550 | 8.00 | 160 | 35 | x | 630 | 1995 | | | | |
| 23 | 20702 | 905 | 4.70 | 90 | 50 | 0.5 | 570 | 170 | | | | |
| 24 | 20703 | 2100 | 7.00 | 115 | 60 | x | 520 | 395 | | | | |
| 25 | 20704 | 380 | 5.10 | 50 | 70 | x | 590 | 105 | | | | |

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

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ANALABS

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ANALYTICAL DATA

SAMPLE PREFIX

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19.5.83

31256

3 OF 5

| TUBE No. | SAMPLE No. | Mn | Fe% | Cu | Zn | Ag | Ba | Pb | | |
|----------|------------|------|------|-----|-----|-----|-----|------|--|--|
| 1 | 20705 | 2800 | 6.15 | 115 | 60 | x | 600 | 385 | | |
| 2 | 20706 | 1450 | 4.95 | 65 | 35 | x | 490 | 145 | | |
| 3 | 20707 | 8000 | 11.0 | 100 | 115 | 0.5 | 940 | 225 | | |
| 4 | 20708 | 5650 | 11.0 | 100 | 105 | x | 520 | 110 | | |
| 5 | 20709 | 400 | 8.55 | 90 | 30 | x | 590 | 40 | | |
| 6 | 20710 | 50 | 3.15 | 175 | 150 | x | 80 | 2550 | | |
| 7 | 20711 | 400 | 2.10 | 45 | 385 | x | 470 | 310 | | |
| 8 | 20712 | 65 | 3.05 | 25 | 55 | x | 330 | 75 | | |
| 9 | 20713 | 530 | 6.25 | 65 | 145 | x | 530 | 210 | | |
| 10 | 20714 | 100 | 2.35 | 25 | 50 | x | 300 | 70 | | |
| 11 | 20715 | 115 | 1.45 | 20 | 15 | x | 250 | 35 | | |
| 12 | 20716 | 250 | 2.15 | 20 | 10 | x | 220 | 45 | | |
| 13 | 20717 | 65 | 0.79 | 15 | 10 | x | 220 | 10 | | |
| 14 | 20718 | 180 | 4.90 | 20 | 5 | x | 250 | 40 | | |
| 15 | 20719 | 540 | 2.20 | 15 | 5 | x | 120 | 65 | | |
| 16 | 20720 | 190 | 2.10 | 30 | 5 | x | 250 | 40 | | |
| 17 | 20721 | 145 | 3.55 | 20 | 15 | 0.5 | 340 | 50 | | |
| 18 | 20722 | 125 | 1.20 | 20 | 50 | x | 260 | 110 | | |
| 19 | 20723 | 65 | 1.15 | 20 | 25 | x | 220 | 65 | | |
| 20 | 20724 | 40 | 0.79 | 15 | 10 | x | 190 | 15 | | |
| 21 | 20728 | 4300 | 3.50 | 70 | 50 | x | 540 | 50 | | |
| 22 | 20729 | 4200 | 6.65 | 100 | 55 | x | 670 | 155 | | |
| 23 | 20730 | 5000 | 6.60 | 85 | 30 | x | 510 | 165 | | |
| 24 | 20731 | 4450 | 5.00 | 60 | 15 | x | 360 | 75 | | |
| 25 | 20732 | 3000 | 3.80 | 30 | 10 | x | 240 | 60 | | |

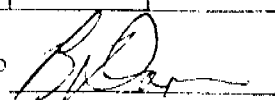
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

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PAGE

| | | | 83.8 14 390 | | | 19.5.83 | | 31256 | | 4 OF 5 | |
|----------|------------|-------|-------------|-----|------|---------|-----|--------|--|--------|--|
| TUBE No. | SAMPLE No. | Mn | Fe% | Cu | Zn | Hg | Ba | Pb | | | |
| 1 | 20733 | 4700 | 4.15 | 45 | 125 | 0.5 | 320 | 150 | | | |
| 2 | 20737 | 710 | 5.95 | 30 | 10 | x | 230 | 70 | | | |
| 3 | 20738 | 195 | 2.00 | 15 | 5 | x | 130 | 15 | | | |
| 4 | 20739 | 335 | 1.50 | 15 | 5 | x | 140 | 20 | | | |
| 5 | 20740 | 680 | 4.60 | 50 | 35 | x | 640 | 50 | | | |
| 6 | 20741 | 8450 | 6.00 | 70 | 70 | x | 390 | 175 | | | |
| 7 | 20742 | 1.75% | 9.45 | 80 | 95 | x | 510 | 265 | | | |
| 8 | 20743 | 680 | 8.95 | 70 | 250 | x | 380 | 450 | | | |
| 9 | 20744 | 50 | 2.76 | 75 | 15 | 0.5 | 310 | 60 | | | |
| 10 | 20745 | 550 | 7.35 | 100 | 70 | x | 450 | 1150 | | | |
| 11 | 20746 | 155 | 8.35 | 40 | 15 | 0.5 | x | 5 | | | |
| 12 | 20747 | 455 | 6.35 | 110 | 50 | x | 300 | 25 | | | |
| 13 | 20748 | 80 | 8.20 | 165 | 20 | x | 370 | 35 | | | |
| 14 | 20749 | 165 | 4.65 | 140 | 65 | 0.5 | 390 | 40 | | | |
| 15 | 21301 | 5500 | 23.0 | 70 | 5350 | 10.0 | 560 | 17.9%* | | | |
| 16 | 21302 | 125 | 23.5 | 110 | 65 | 1.0 | 250 | 300 | | | |
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| 18 | | | | | | | | | | | |
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Results in ppm unless otherwise specified

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X = element concentration is below detection limit

— = element not determined

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| | | | | | | | | | | | |
|----------|----------------------------|------|-------------|-----|-----|---------|-----|-------|--|--------|--|
| | | | 83.8 14 390 | | | 19.5.83 | | 31256 | | 5 OF 5 | |
| TUBE No. | SAMPLE No. | Mn | Fe% | Cu | Zn | Ag | Ba | Pb | | | |
| 1 | R 20654 | 45 | 1.15 | 15 | 20 | x | 180 | 35 | | | |
| 2 | R 20674 | 4250 | 9.75 | 45 | 395 | x | 470 | 345 | | | |
| 3 | R 20695 | 415 | 4.05 | 55 | 500 | x | 260 | 515 | | | |
| 4 | R 20714 | 95 | 2.40 | 25 | 45 | x | 350 | 65 | | | |
| 5 | R 20738 | 600 | 6.05 | 70 | 70 | x | 400 | 170 | | | |
| 6 | | | | | | | | | | | |
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| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |
| 21 | | | | | | | | | | | |
| 22 | * - Analysed by Method 601 | | | | | | | | | | |
| 23 | DETECTION | 5 | | 5 | 5 | 0.5 | 10 | 5 | | | |
| 24 | DIGESTION | 101 | 101 | 101 | 101 | 101 | | 101 | | | |
| 25 | METHOD | 101 | 101 | 101 | 101 | 101 | 120 | 101 | | | |

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

19.5.83

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[Signature] 1

5% 804% PH

APPENDIX 2

Costean Geochemical Results

Appendix 2

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Costains

Nathan Point.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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CLIENT ORDER No.

PAGE

| | | | | 83.8 14 393 | | | 25.5.83 | | 32172 | | 1 OF 3 | |
|----------|------------|------------|------|-------------|------|-----|---------|-----|-------|------|--------|--|
| TUBE No. | SAMPLE No. | Mn | Fe% | Cu | Zn | Ag | Sn | Ba | Au | Pb | | |
| 1 | 20851 | 1.75% | 10.5 | 90 | 1250 | 0.5 | 15 | 390 | 0.008 | 200 | | |
| 2 | 20852 | 5600 | 8.95 | 150 | 820 | x | 4 | 600 | 0.024 | 580 | | |
| 3 | 20853 | 2.15% | 13.0 | 115 | 395 | x | 3 | 450 | x | 680 | | |
| 4 | 20854 | 5750 | 10.5 | 60 | 150 | 0.5 | 6 | 430 | x | 205 | | |
| 5 | 20855 | 1.15% | 10.5 | 65 | 415 | x | 10 | 430 | x | 225 | | |
| 6 | 20856 | 1.85% | 12.0 | 75 | 275 | x | 3 | 470 | x | 250 | | |
| 7 | 20857 | 2.80% | 11.5 | 90 | 110 | 0.5 | x | 430 | x | 310 | | |
| 8 | 20858 | 2.20% | 9.05 | 95 | 160 | x | 4 | 360 | x | 240 | | |
| 9 | 20859 | 2.85% | 11.0 | 80 | 100 | 0.5 | 3 | 330 | x | 160 | | |
| 10 | 20860 | 3.55% | 11.5 | 100 | 105 | x | 7 | 460 | x | 130 | | |
| 11 | 20861 | 3.00% | 11.5 | 105 | 735 | x | 6 | 480 | x | 245 | | |
| 12 | 20862 | 3.25% | 13.0 | 85 | 1950 | x | 30 | 540 | x | 355 | | |
| 13 | 20863 | Zn 5.00% | 13.0 | 90 | 2650 | x | 25 | 450 | x | 255 | | |
| 14 | 20864 | (5A) 2.80% | 12.0 | 50 | 4400 | x | 20 | 640 | x | 530 | | |
| 15 | 20865 | 1.35% | 11.0 | 75 | 6050 | 0.5 | 15 | 630 | x | 960 | | |
| 16 | 20866 | 1.85% | 10.5 | 40 | 4200 | x | 50 | 550 | 0.008 | 565 | | |
| 17 | 20867 | 2500 | 4.70 | 30 | 1300 | x | 6 | 370 | - | 350 | | |
| 18 | 20868 | 1450 | 3.30 | 25 | 750 | x | 6 | 290 | - | 130 | | |
| 19 | 20869 | 3050 | 5.60 | 25 | 870 | 0.5 | 5 | 280 | - | 325 | | |
| 20 | 20870 | 1350 | 4.60 | 50 | 850 | 0.5 | 4 | 380 | - | 195 | | |
| 21 | 20871 | 3300 | 4.90 | 120 | 1700 | 0.5 | 9 | 440 | - | 130 | | |
| 22 | 20872 | 3700 | 5.60 | 115 | 2500 | 0.5 | 6 | 290 | - | 185 | | |
| 23 | 20873 | 3350 | 7.65 | 75 | 2300 | x | 5 | 460 | - | 740 | | |
| 24 | 20874 | 7850 | 10.5 | 60 | 2000 | 0.5 | 5 | 390 | - | 2000 | | |
| 25 | 20875 | 5650 | 6.80 | 50 | 1700 | x | 5 | 550 | - | 775 | | |

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| | | | 83.8 14 393 | | | 25.5.83 | | 32172 | | 2 OF 3 | |
|----------|------------|-------|-------------|-----|------|---------|----|-------|-------|--------|--|
| TUBE No. | SAMPLE No. | Mn | Fe% | Cu | Zn | Ag | Sn | Ba | Ru | Pb | |
| 1 | 20876 | 1650 | 4.50 | 70 | 1200 | x | 5 | 400 | - | 245 | |
| 2 | 20877 | 1600 | 3.95 | 105 | 450 | x | 8 | 420 | - | 170 | |
| 3 | 20878 | 1800 | 4.55 | 120 | 275 | x | 5 | 450 | - | 135 | |
| 4 | 20879 | 5100 | 6.15 | 150 | 230 | 0.5 | 10 | 450 | - | 145 | |
| 5 | 20880 | 2100 | 6.05 | 175 | 290 | 0.5 | 8 | 480 | - | 180 | |
| 6 | 20881 | 2300 | 6.00 | 160 | 200 | 0.5 | 9 | 470 | - | 100 | |
| 7 | 20883 | 480 | 3.90 | 70 | 1650 | 0.5 | 8 | 450 | 0.008 | 0.65% | |
| 8 | 20884 | 700 | 4.60 | 75 | 2400 | 0.5 | 6 | 440 | x | 0.93% | |
| 9 | 20885 | 795 | 5.75 | 115 | 2800 | 0.5 | 7 | 470 | x | 1.30% | |
| 10 | 20886 | 1200 | 2.95 | 65 | 1150 | 0.5 | 9 | 500 | x | 1.48% | |
| 11 | 20887 | 2100 | 4.25 | 95 | 1350 | 1.5 | 15 | 350 | x | 3.20% | |
| 12 | 20888 | 6050 | 8.25 | 180 | 1700 | 0.5 | 10 | 440 | x | 5.78% | |
| 13 | 20889 | 2400 | 10.5 | 95 | 3000 | 0.5 | 6 | 200 | x | 5.05% | |
| 14 | 20890 | 8100 | 6.55 | 130 | 1100 | 0.5 | 4 | 330 | x | 1.64% | |
| 15 | 20891 | 260 | 10.5 | 95 | 505 | 0.5 | 10 | 280 | x | 0.79% | |
| 16 | 20892 | 1600 | 10.5 | 85 | 675 | x | 9 | 450 | x | 4450 | |
| 17 | 20893 | 4900 | 10.5 | 50 | 1950 | x | 8 | 520 | x | 540 | |
| 18 | 20894 | 1.30% | 10.5 | 75 | 1200 | x | 7 | 260 | x | 2450 | |
| 19 | 20895 | 2.85% | 11.5 | 60 | 1300 | x | x | 350 | x | 275 | |
| 20 | 20896 | 1.70% | 9.70 | 60 | 935 | x | 9 | 320 | x | 325 | |
| 21 | | | | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure
 X = element concentration is below detection limit
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| | | | 83.8 14 393 | | | 25.5.83 | | 32172 | | 3 OF 3 | |
|----------|-------------------------------------|-------|-------------|-----|------|---------|-----|-------|-------|--------|--|
| TUBE No. | SAMPLE No. | Mn | Fe% | Cu | Zn | Ag | Sn | Ba | Au | Pb | |
| 1 | R 20851 | 1.75% | 10.5 | 85 | 1150 | x | - | 360 | 0.008 | 195 | |
| 2 | R 20870 | 1400 | 4.45 | 50 | 860 | x | - | 400 | - | 185 | |
| 3 | R 20892 | 1600 | 10.5 | 80 | 645 | 0.5 | - | 420 | x | 4400 | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
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| 11 | | | | | | | | | | | |
| 12 | SAMPLES 20883 - 20891 - Pb ANALYSED | | | | | | | | | | |
| 13 | BY METHOD 601 | | | | | | | | | | |
| 14 | | | | | | | | | | | |
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| 21 | | | | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | DETECTION | 5 | | 5 | 5 | 0.5 | 3 | 10 | 0.008 | 5 | |
| 24 | DIGESTION | 101 | 101 | 101 | 101 | 101 | | | | 101 | |
| 25 | METHOD | 101 | 101 | 101 | 101 | 101 | 402 | 120 | 303 | 101 | |

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure
 X = element concentration is below detection limit
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APPENDIX 3

Expenditure Breakdown

| Major Activity | Staff Salaries | Staff Wages | Consultants/ Contractors' Fees | Vehicles | Travel Other | Accom. | Field Accom. | Field Equip. | Office Equip. | Other | Sub-Totals |
|----------------|----------------|-------------|--------------------------------|----------|--------------|--------|--------------|--------------|---------------|-------|------------|
| Geology | 5975 | 478 | 217 | | 49 | | | | | | |
| Geochemistry | 170 | 212 | 2271 | | | | | | | | |
| Geophysics | | | | | | | | | | | |
| Access | | | 474 | | | | | 127 | | | |
| Gridding | | | 600 | 21 | | 10 | | 1363 | | | |
| Drilling: | | | | | | | | | | | |
| - diamond | | | | | | | | | | | |
| - other | | | | | | | | | | | |
| Drafting | 1405 | | | | | | | | | | |
| Metallurgy | | | | | | | | | | | |
| Engineering | | | | | | | | | | | |
| Environmental | | | | | | | | | | | |
| Other | | | | | | | | | 175 | 147 | |
| SUBTOTALS | 7550 | 690 | 3562 | 21 | 49 | 10 | | 1490 | 175 | 147 | |

| | |
|------------------------|-------|
| TOTAL | 13694 |
| LOCAL OFFICE OVERHEADS | 3232 |
| HEAD OFFICE OVERHEADS | 4367 |
| GRAND TOTAL | 21293 |