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Prospect 602

CSR LIMITED - ALUMINIUM, MINERALS AND CHEMICALS DIVISION

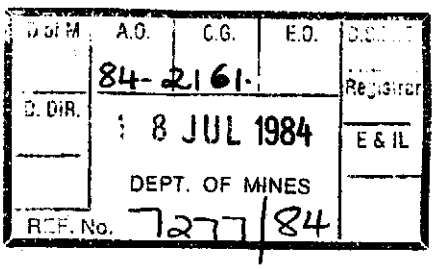
EXPLORATION & DEVELOPMENT GROUP

RENEWAL REPORT - 1984

EXPLORATION LICENCE 15/76

DUNDAS, TASMANIA

EMR 52/84



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KEYWORDS

TASMANIA	EXPLORATION
TIN	MINERALISATION
COPPER	SOIL
LEAD	DRAINAGE
ZINC	DRILL CORE
GOLD	GEOLOGY
SILVER	GEOCHEMISTRY
NICKEL	SAMPLING
EL 15/76	JOINT VENTURE
8SK55-03	ROCK CHIP

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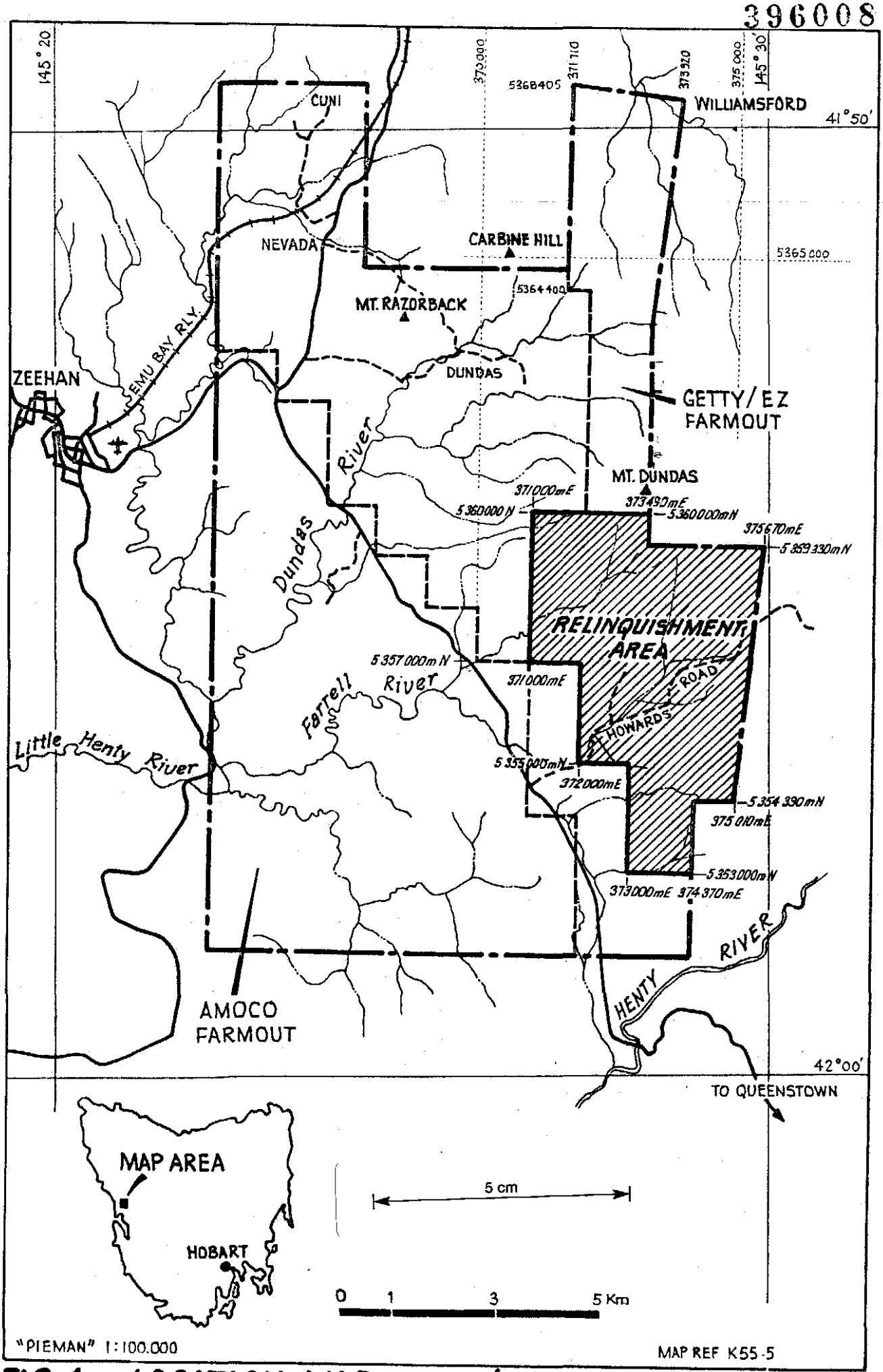

FIG. 1 LOCATION MAP E.L. 15/76 DUNDAS, TASMANIA SHOWING RELINQUISHMENT AREA

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1. INTRODUCTION

Exploration Licence 15/76 (EL 15/76) was granted to CSR Limited on 2nd August, 1976. The Licence originally covered an area of 145 km^2 situated 4 km east of Zeehan on the West Coast of Tasmania (Figure 1). It extends south from Melba Flats and Williamsford to the Henty River and west from Mt. Dundas to the Little Henty River.

This area contains small silver/lead/zinc deposits (Dundas), a small tin orebody (Mt. Razorback), small copper/nickel shows (Cuni/Lead Blocks), small complex lead/antimony-rich sulphides with minor Sn, Ag, Bi, W (Montezuma) and several minor lead/zinc/silver concentrations (Mariposa). There is also potential for silver/lead/zinc mineralisation with tin sulphides in the upper units of the Oonah Formation (Oonah Mine-type), copper/zinc/lead/silver/tin associations in the acid volcanics of the Dundas Group, and Renison-style replacement tin deposits.

Prior to 1976, the area was intensely prospected by many companies and individuals as well as investigated by government researchers. Since 1976, CSR has undertaken exploration to evaluate the Licence. Recently two portions of the Licence were joint ventured to Amoco (west of the Murchison Highway) and EZ/Getty (northeast Montezuma area).

In April 1984, CSR Limited reduced the area of the Licence to 124 km^2 to comply with the Department of Mines revised Exploration Licence conditions. An area of 21.78 km^2 was relinquished from the southeastern corner of the Licence from 2nd August, 1984.

On 2nd August, 1983, the entire Licence was renewed for a further 12 month period. This report summarises the investigations completed during this last period, excluding the relinquished area which is the subject of a separate report.

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2. SUMMARY

Exploration of EL 15/76 by CSR Limited and two groups of joint venture partners - Amoco and EZ/Getty - continued through 1983 and early 1984.

Amoco continued gridding and completing geochemical soil and rock-chip sampling of areas of Gordon Limestone in the southwest of the Licence. More advanced prospects on some grids were costeaned and drilling commenced on mineralised areas at the Bannockburn and Mariposa Grids. Further regional and air photograph interpretive mapping commenced on grass-roots prospects. Exploration on all of the anomalies and new grids will continue during the next period.

EZ/Getty completed grid mapping, costeaning and rock-chip and pit sampling on most of the previously defined anomalies. The drilling of the defined anomalies was undertaken but with generally discouraging results. Potential for a Renison-style deposit still exists at depth. The prospect will be re-evaluated with the investigation of remaining anomalies being completed by pitting during the next period.

CSR continued investigations in the South Nevada Creek area, but have not explained the source of the anomalous tin. All Dighem anomalies have been located and explained with only the Carbine area requiring further investigation. A trace element lithogeochemical study of mineralisation was commenced but the results are difficult to explain with the limited geological information. Detailed mapping of the area has commenced which may help interpretation of the trace element analyses and definition of a deep tin target.

3. GENERAL INFORMATION

EL 15/76 is situated 4 km east of Zeehan in the Land District of Montagu on the west coast of Tasmania. The sealed Murchison Highway diagonally bisects the Licence area (northwest-southeast). A series of unsealed roads, tracks and old tramways give reasonable access to most parts of the Licence.

All but the northeast of the Licence is drained by tributaries of the westerly-flowing Little Henty-Henty River system. The northeast is drained by the headwaters of the Ring River which flows into the westerly-draining Pieman River system. Most of the streams are small and steep; typically "young" streams. On the flat areas of the easily eroded Gordon Limestone (southwest) the streams form swamps.

The vegetation cover in areas of Silurian, Devonian and Ordovician sedimentary rocks is generally buttongrass with local areas of dense ti-tree/sword grass/bowrah scrub. The remainder of the Licence is covered by cool temperate rainforest with patches of dense "horizontal" scrub. Minor areas of open grasslands occur in the cleared zones of Dundas and Cuni.

During 1981, Amoco Minerals Australia Company expressed an interest in obtaining exploration rights to areas of Ordovician Gordon Limestone. A Joint Venture Agreement was signed between CSR and Amoco on 23rd December, 1981 for the portion of EL 15/76 to the southwest of the Murchison Highway (Figure 1). Access to this area is via several old mining and exploration tramways and tracks from the Murchison Highway.

In late 1981-early 1982, the Electrolytic Zinc Company of Australasia and Getty Oil Development Company

Limited approached CSR with a view to joint venture exploration of the Montezuma area of EL 15/76. A Heads of Agreement was signed in early 1982 covering the old Geophoto Montezuma Grid and the CGFA Grid (Figure 1). Access to this area is by three tracks; a Geophoto drill access track to the Montezuma Grid (south); the Northeast Dundas tramway (central); and an extension of the Anglo-American Corporation drill access to EL 15/76 (north).

4. PREVIOUS EXPLORATION

A review of all available previous exploration and prospecting data for the EL 15/76 area is contained in Ellis (1982). A brief resume of these data is included in Macnamara and Ellis (1983) which also details the 1982 exploration. The 1983 exploration is detailed in Ellis (1983).

Since 1982, Amoco have continued to establish grids and complete geochemical drainage, soil and rock-chip sampling and magnetic, gravity and EM surveys and costeaning over areas of Gordon Limestone in the southwest of the Licence. Geophysical and/or geochemical anomalies have been located on the Mariposa (two), Blackjacks (one) and Bannockburn (two) Grids.

After starting work on the Montezuma area in early 1982, EZ/Getty (EZ being operators) recut and extended the CGFA grid. Soil geochemistry, geological mapping and magnetic Dighem and Genie EM surveys defined three major anomalous areas along the Montezuma Fault and one isolated anomaly.

Since 1982, CSR gridded areas of anomalous drainage geochemistry at Howards Road, Cuni and Nevada and followed-up Dighem and isolated drainage anomalies. A new study of trace element analysis attempting to define deep tin deposits was commenced.

5. GEOLOGY

The geology of the area was described by Blissett (1962). Brown (1982) has re-mapped and reviewed the geology of the northern half of the Licence while K. Corbett is re-mapping the southern half (pers. comm.).

A brief summary of the geology of the Licence area is included in Macnamara and Ellis (1983). More detailed geology on individual prospects is referred to in Ellis (1982) and recent geological mapping is shown in Jones (1982a, 1982b, 1982c, 1983), Kary and Jones (1983), Sainty (1982) and Macnamara (1983a, 1983b, 1983c).

Detailed geological mapping of the northern half of the Licence is being undertaken at present.

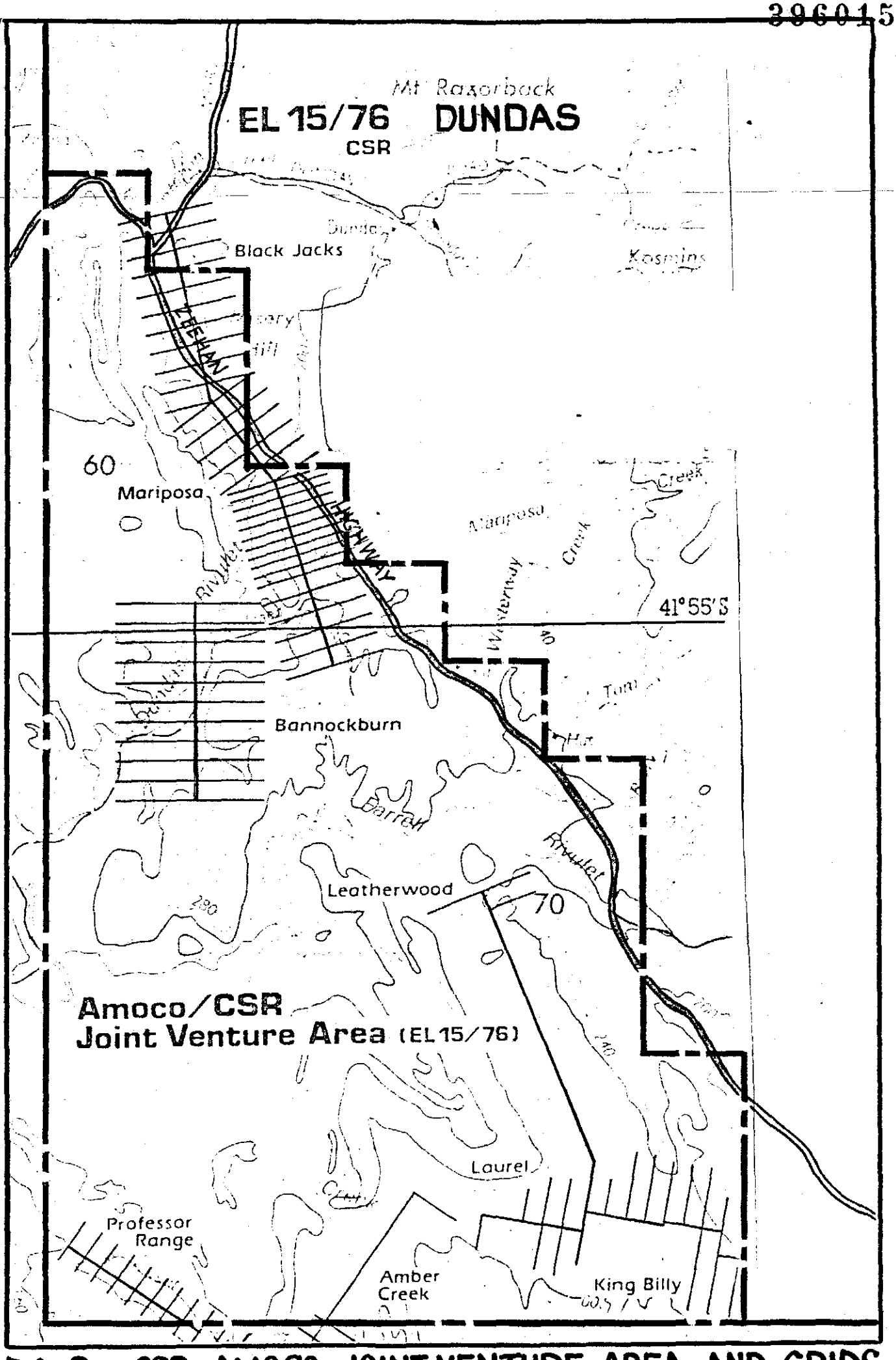

FIG. 2 CSR-AMOCO JOINT VENTURE AREA AND GRIDS

6. AMOCO JOINT VENTURE AREA

Amoco's main exploration target in the 58 km^2 block is the Irish-style lead/zinc/silver deposits in the Ordovician Gordon Limestone.

6.1 Current Exploration

Exploration by Amoco during the reporting period included geological mapping, air photograph interpretive mapping, rock-chip and soil sampling surveys, gridding, costeaning and drilling. Most of this work centred on the Blackjacks, Mariposa, Bannockburn and Professor Range Grids with limited studies on the Farrell and Westerway areas (Figure 2).

Detailed results of this work have been reported by Jones, 1983 (Appendix I) and Kary, 1984 (Appendix II).

6.1.1 Geology

Detailed mapping has been completed on the Mariposa, Blackjacks and Bannockburn prospects. The limestone unit has been severely faulted during deposition by northwest and northeast trending structures. These may have provided mineralising conduits.

Two major zones of Pb-Zn mineralisation occur on the Mariposa prospect, while one mineralised laminated silty dolomite and breccia horizon occurs at the Bannockburn/Sunny Corner area, and one zone of mineralised pyritic laminar limestone has been located at Blackjacks. These mineralised zones are generally close to the stratigraphic top of the limestone unit. The second mineralised zone on the Mariposa Grid is

thought to be in the centre (stratigraphically) of the limestone.

6.1.2 Photogeology

Two attempts at an airphoto geological interpretation of the area were made. Results were similar with the difference being due to different structural interpretations rather than differences in geological units.

This study defined several areas of favourable geology and structure for Irish-type base-metal deposits including:

(i) Professor Range Grid
(ii) Farrell Grid
(iii) Westerway Creek Grid
(iv) Berry Creek area
(v) Leatherwood Grid

6.1.3 Gridding

A structurally anomalous portion of the Professor Range area was gridded at 200 m intervals. An 800 m zone was gridded at 100 m intervals as a result of anomalous soil geochemistry.

The Pyramid Keel structure on the Farrell area was gridded at 200 m intervals.

Reconnaissance lines were pegged in the Westerway Creek area.

6.1.4 Geochemistry

(a) Soils

Soil sampling by bombardier-mounted auger and

hand auger has been completed on the Blackjacks, Mariposa and Bannockburn Grids, while bombardier auger sampling of the Westerway Creek lines and the accessible parts of the Professor Range Grid was completed. Infill lines on the Professor Range Grid were also soil sampled by bombardier auger.

Infill sampling at Blackjacks defined a zone of Pb-Zn anomalies at the top of the Limestone sequence similar to the main Mariposa anomaly. Peak values were 1400 ppm Pb and 1.5% Zn.

Similarly, on the Bannockburn Grid this upper Limestone stratigraphy contained two anomalous Pb/Zn zones. One zone (800 x 100 m) over the old Bannockburn workings had peak values of 4.0% Pb, 2.1% Zn and 27 ppm Ag while the other (400 x 100 m) over the Sunny Corner workings had peak values of 4.8% Pb, 13.0% Zn and 79 ppm Ag.

On the Professor Range Grid a 75 x 800 anomalous zone peaking at 1.3% Pb and 0.73% Zn was located in the upper Gordon Limestone stratigraphy in a similar position to that at the Mariposa, Blackjacks and Bannockburn Grids.

Thick gravels were encountered on the Westerway Grid. No strongly anomalous zones were located with maximum values being only 3100 ppm Zn and 930 ppm Pb.

(b) Rock-chip

Further rock-chip samples were taken from ironstone outcrops, dumps, ferruginous sediments and unaltered sediments from the Blackjacks, Mariposa and Bannockburn areas. Base metal values for most ironstone and dump samples were highly anomalous, peaking at 1100

ppm Zn, 280 ppm Pb and 20 ppm Ag at Blackjacks, 40% Zn, 26.5% Pb, 1.3% Cu and 150 ppm Ag at Mariposa and 4.84% Zn, 38.2% Pb and 232 ppm Ag at Bannockburn.

6.1.5 Costeaning

Areas of anomalous soil geochemistry on the Mariposa, Blackjacks, Bannockburn and Professor Range Grids were trenched. Samples were taken over 2 m intervals along the costeans.

(a) Blackjacks

A further 8 trenches, totalling 762 m, were dug dominantly in the area to the southwest of the highway, near the old workings. A 300 m long zone, varying in width from 6 to 35 m and assaying between 1 and 5.4% Pb+Zn, was delineated.

(b) Mariposa

A further 11 trenches, totalling 712 m, were dug across the eastern faulted Limestone-Dundas Group contact area and along strike from the old workings. Mineralisation near the eastern faulted contact appears continuous over a strike length of 800 m with the best zone being 6 m of 6.2% Pb, 5.5% Zn and 257 ppm Ag on Line 58800N. Generally the zone is about 8 m wide and averages from 1 to 4% Pb+Zn with narrower high-grade zones. Trenching of this eastern zone was not completed due to excessive thicknesses of gravels. Infill trenching of the western mineralisation confirmed the continuity of this zone. Similar values to those already reported were obtained.

(c) Bannockburn

Fifteen trenches, totalling 1124 m, were dug at

the Bannockburn prospects, 7 were completed at the old Bannockburn workings and 8 at the Sunny Corner workings. The 40 m wide Bannockburn zone (southern) extends 400 m along strike and has values of 1 to 4% Pb+Zn peaking at 8% Pb+Zn and 42 ppm Ag. At Sunny Corner the mineralisation parallels bedding around the nose of an anticline and is adjacent to the hanging wall contact of the Limestone with the Crotty Quartzite. The best result from this zone was 22 m of 3.1% Pb, 3.9% Zn and 343 ppm Ag.

(d) Professor Range

Four trenches, totalling 308 m, were dug on 3 lines across the soil geochemical anomaly. A 400 m by 10 m zone of mineralisation was observed in a similar stratigraphic position to the Sunny Corner mineralisation. However, this zone had major dolomitised units stratigraphically below the mineralisation.

6.1.6 Geophysics

The EM 37 and gravity data from the Mariposa area was re-interpreted using fresh rock depths obtained from trenching. No significant changes to the original interpretation were noted.

Test IP lines with 50 and 100 m spacings at the Mariposa Grid showed strong correlation with known geology, particularly with the 50 m spacings. Some correlation with the mineralisation was obtained but this was not definitive.

The Mariposa Grid and parts of the Blackjacks Grid were traversed with a VLF-EM survey. Good correlation of VLF anomalies (Fraser derivatives) and the soil geochemical anomalies were obtained. All grids will now be traversed with VLF-EM.

6.1.7 Drilling

Drilling has commenced on the Mariposa and Bannockburn areas. Holes completed are:

DTM-84-1 on Line 58800N/67250E to 072°T at -52°

0-113.4	m	Limestone with trace galena at 60.4 m and sphalerite at 82.7-82.8 m
113.4	m	Faulted contact?
113.4-126.0	m	Dundas Group sediments
126.0	m	EOH

DTM-84-2 on Line 58950N/66999E to 072°T at -60°

0-50	m	Crotty quartzite
50-186	m	Limestone with galena and sphalerite at 131-151 m and traces at 65-94 m and 170-172 m
186	m	EOH

DTB-84-1 on Line 56900N/65700E to 091°T at -50°

0-65	m	Crotty quartzite
65-101.5	m	Limestone
101.5	m	EOH due to caving - being drilled as DTB-84-1A at 56900N/65699E

6.2 Proposed Exploration

The initial 2000 m drilling programme of the Bannockburn, Blackjacks and Mariposa Grids will be completed. This may be followed by further drilling if encouraging results are obtained.

Soil sampling and costeaning will be completed at the Professor Range Grid to confirm the mineralisation and determine its strike extent.

Auger soil sampling at the Farrell Grid will be commenced when lower river levels allow bombardier access.

Test soil sampling will be completed on the Mariposa Grid using a Marlow Flow-through Sampling Unit. This unit may be capable of penetrating thick gravel cover (too thick for the Jackro) to obtain a bedrock sample.

All grids will be traversed with VLF-EM. Similarly all airborne EM and Turam anomalies defined by Mitre Geophysics will be traversed with the VLF-EM.

The anomalous stream sediment samples will be further investigated.

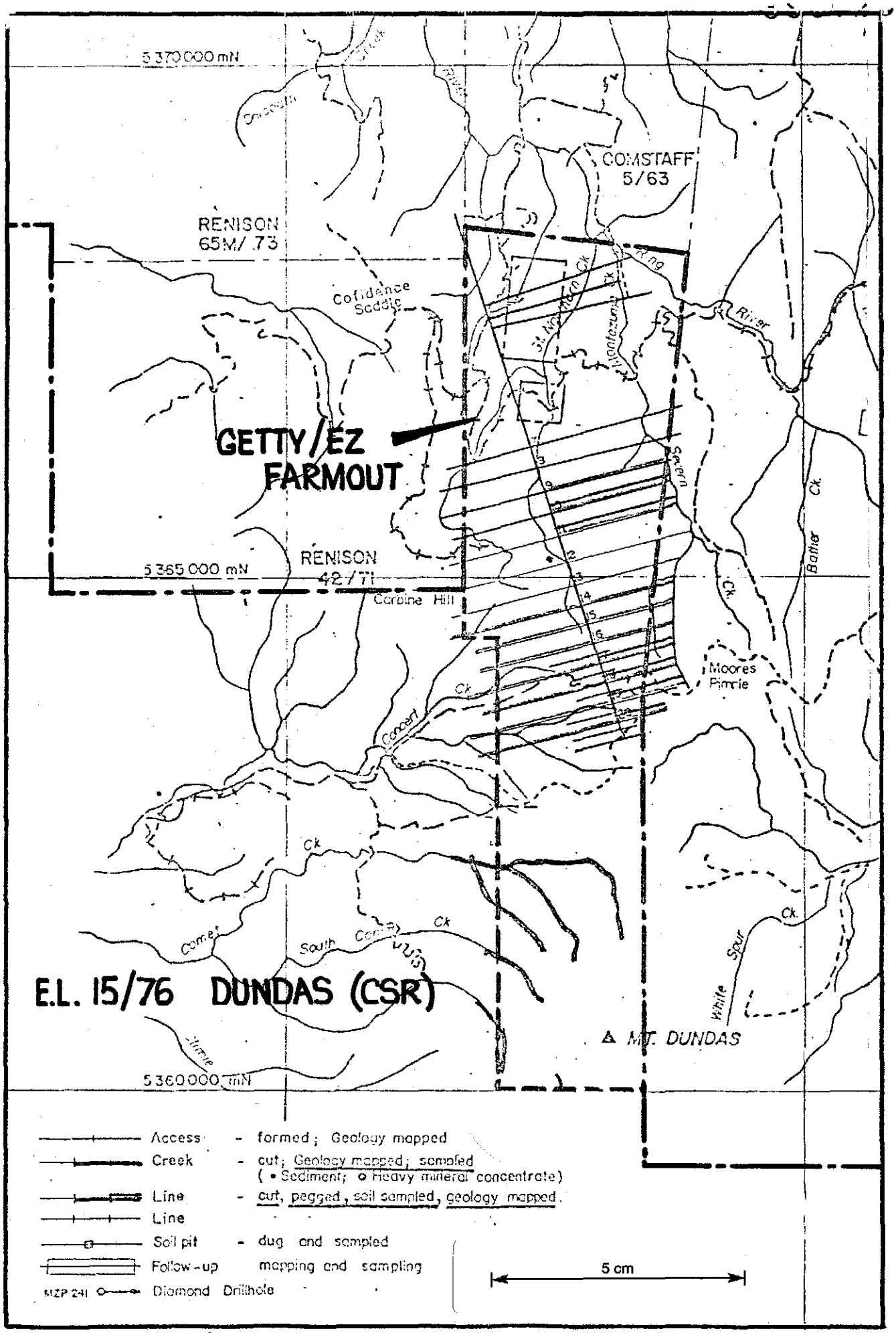

FIG. 3 E.Z./GETTY JOINT VENTURE AREA AND GRIDS

7. EZ/GETTY JOINT VENTURE AREA

EZ/Getty's main exploration target in the 14 km^2 Montezuma area is a Renison-style, carbonate-hosted tin deposit. Lead/zinc or complex sulphide deposits are of minor interest.

7.1 Current Exploration

EZ (operators) continued field work on the old CGFA and Geophoto grids and adjoining areas (Figure 3). This included completion of grid mapping, costeaning, track construction and repair, diamond drilling, track rock-chip sampling and pit sampling.

Detailed results of this work have been reported by Sainty (1983 and 1984), Appendices III and IV. The following is a brief summary.

7.1.1 Geological Mapping

Mapping of all new infill lines was completed by D. Simpson. Results are consistent with the current interpretation.

7.1.2 Costeaning

Two costeans were dug on Line 1A in the north of the area. The costean at 6070 to 6145E was on a strong EM (Dighem and Genie) anomaly with a single elevated (47 ppm) Sn soil value. A weathered black shale unit with Zn to 560 ppm is thought to be the EM anomaly source.

The second costean at 5770 to 5865E was on a series of anomalous soil Sn anomalies (to 289 ppm) and a coincident circular magnetic peak. A

surficial gossanous scree deposit (from the adjacent ML 62M/75 tin scratching) explained the Sn anomaly. The magnetic anomaly is due to underlying ultrabasic rocks located in drilling by Comstaff.

7.1.3 Track Construction

The costeans were accessed by short tracks from the Comstaff drill access on ML 62M/75. An attempt was made to doze an access track to the proposed Line 19 drill holes. This failed due to the steep topography.

Access to the Line 19, 9 and 10 holes was by helicopter. Helicopter pads and drill sites were cut and platforms constructed by Purton Brothers.

7.1.4 Diamond Drilling

Phase I - Two holes (MZP 244 and MZP 245A) were drilled to locate and test the intersection of the Maestries Dolomitic Conglomerate unit and the Montezuma Fault in the Line 18 anomalous area.

MZP 244 at 373027.9E, 5363960.4N (AMG) and RL 628.8 m was drilled at -60° on an azimuth of 240° GN.

0 -139.9 m	Oonah Formation with quartz veining at 38.0-38.75, 42.4-47.25 and 48.0-50.0 m
139.9-194.0 m	Maestries Dolomitic Conglomerate with minor mineralisation at 167.45-171.7 m assaying 0.92% Pb, 0.51% Zn, 76 ppm Sn.
195.0-250.0 m	Concert Schist
250.0 m	EOH

Shearing within the Oonah Formation contained minor mineralisation with highest values being:

6.25- 9.0	m	with 0.27% Sn, 3.53% Zn, 0.36% Pb
19.0 -20.0	m	with 0.29% Sn, 4.88% Pb, 233 ppm Ag
42.5 -42.95	m	with 0.105% Sn, 2.0% As

MZP 245A at 373086.5E, 5364004.0N (AMG) and RL of 635.7 m was drilled at -80° on an azimuth of 240° GN (a re-drill of MZP 245 from the same location).

0 -232.15	m	Oonah Formation with pyrite veins at 60.45-138.0 m and intensely deformed at 72.0-129.8 m, 189.0-201.0 m and 215.4-232.15 m
232.15-367.0	m	Maestries Dolomitic Conglomerate
367.0 -374.0	m	Concert Schist
374.0	m	EOH

Shearing within the Oonah Formation contained minor mineralisation with highest values being:

67.5 - 67.8	m	with 0.3% Sn
90.0 - 93.0	m	with 0.12% Sn
96.0 - 99.0	m	with 0.12% Sn
135.35-135.55	m	with 0.26% Sn, 9.0% As

The Montezuma Fault is thought to be represented by the pyrite-rich zone in MZP 245A and the upslope start of the Sn soil anomaly (not the peak of the soil anomaly) on the surface. Track rock-chip sampling and pit sampling were undertaken prior to Phase II to confirm the coincidence of peak Sn values in bedrock and upslope limit of soil Sn anomalies, and to enable accurate drill targetting.

Phase II - A further hole on Line 19 (MZP 260) was drilled to locate and test the intersection of the Maestries Dolomitic Conglomerate unit and the Montezuma Fault in the Line 18 anomalous area and two holes (MZP

258 and MZP 261) were drilled to test an enhanced area of high soil and bedrock Sn values in the Lines 9, 10 area.

MZP 260 at 4937E on Line 19 was drilled at -70° on an azimuth of 256° GN.

0 -139.9 m	Oonah Formation with minor pyrite at 24-29 m
139.9-149.9 m	Maestries Dolomitic Conglomerate

This suggests the intersection of the Maestries Dolomitic Conglomerate and the Montezuma Fault is at a depth of 450-500 m below surface requiring a hole of 800-850 m to test for a Renison-style replacement deposit.

MZP 258 at 5408E on Line 9 was drilled at -50° on an azimuth of 256° GN and intersected Dundas Group sediments for the entire 272.0 m length. Minor mineralised shears at 162.45 to 171.50 m were thought to represent the Montezuma Fault. Best assays from this zone were:

162.45-165.75 m	with 1130 ppm Sn, 26.9 ppm Ag, 1.17% Zn, 7.11% As
167.41-170.00 m	with 1840 ppm Sn, 4050 ppm Zn

The No. 1 Curtin Davis mineralisation was intersected at 46.5-63.1 m. Best assays were:

49.6-50.6 m	7.50% Pb, 1.95% Zn, 670 ppm Ag, 0.16% Cu
53.2-53.5 m	6.45% Pb, 0.21% Zn, 510 ppm Ag, 0.14% Sb

No other carbonates or mineralisation were noted.

MZP 261 at 5300E on Line 10 was drilled at -50°,

azimuth 256° GN and intersected Dundas Group sediments for the entire 241.0 m length. No other information is available except that minor mineralisation was observed.

7.1.5 Track Rock-chip Sampling

The two access tracks in the Line 18 anomaly area were chip sampled in order to locate the position of the Montezuma Fault and to correlate to the Line 18 soil samples. The fault line is marked by elevated Sn values (to 1190 ppm) over a 21 m wide zone. The position of the elevated Sn values in the rock-chip and drill core samples confirms the 70°E dip of the fault.

7.1.6 Anomaly Pit Sampling

Five areas of EM and/or soil Sn anomalies were pitted to bedrock and then rock-chip sampled. The areas were:

Line 19 at 5235E (Sn anomaly)
Line 14 at 5050E (Sn/EM anomaly)
Line 11 at 5210E (Sn/EM anomaly)
Line 10 at 5230-5245E (Sn/EM anomaly)
Dighem anomaly 4

Rock-chip samples showed no Sn at Line 14 or Dighem 4 anomalies, but showed bedrock Sn sources for the Lines 10, 11, 19 anomalies. The position of the bedrock Sn anomalies was used to locate the Lines 9, 10 and 19 drill holes.

7.2 Proposed Exploration

Logging and sampling of drill holes MZP 260 and MZP 261 has to be completed. Although an 800 m hole has been proposed to test the intersection of the Maestries Dolomitic

Conglomerate and the Montezuma Fault in the Line 18 area, a final decision will be made on completion of the evaluation of MZP 260 and 261.

The airborne magnetic circular feature on Line 14 will be pitted and sampled. This anomaly may be due to mineralisation or possibly to a dolerite/gabbro intrusive.

The geophysical data (air magnetics and Dighem) are to be re-evaluated by CSR.

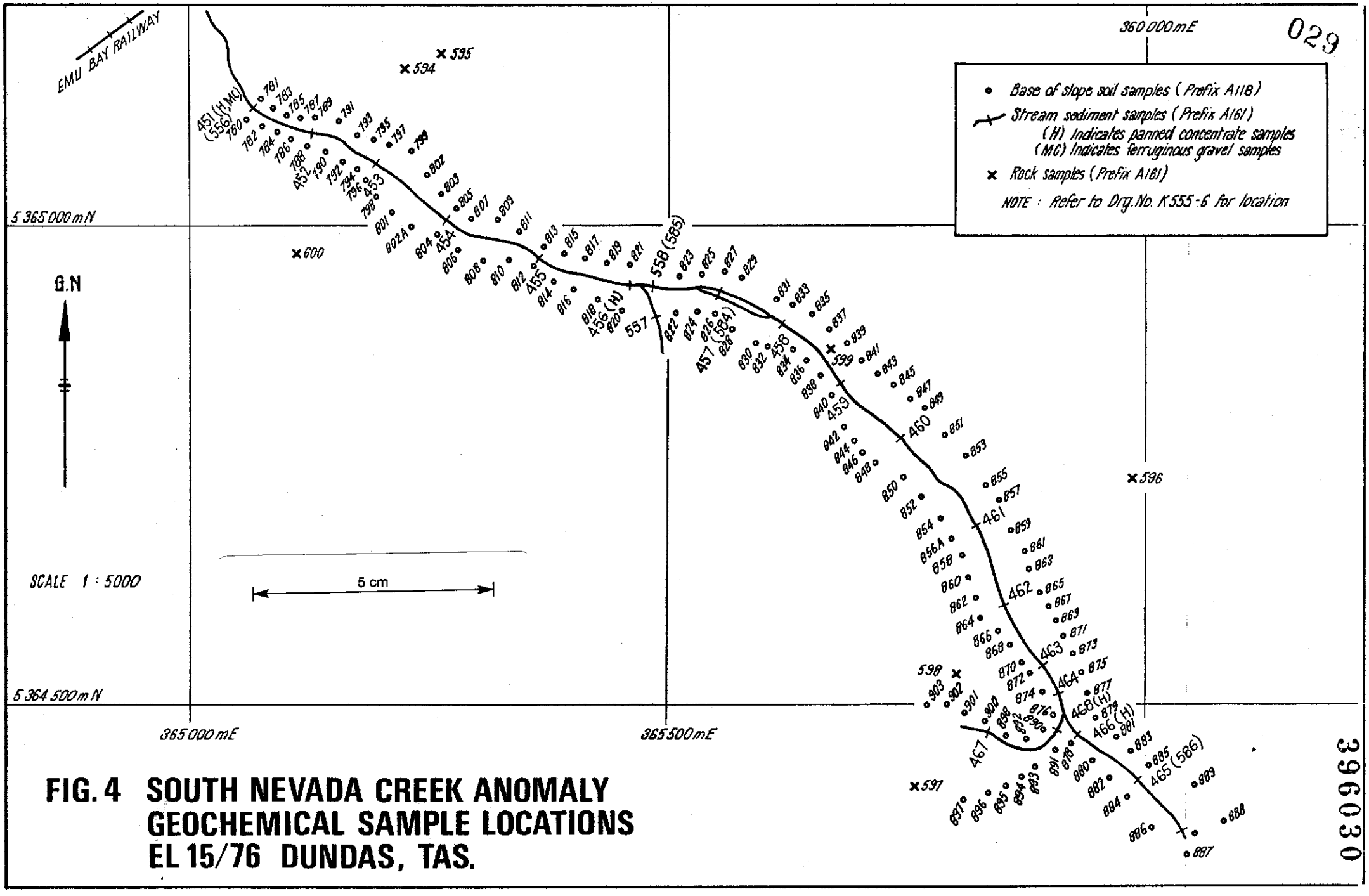

FIG. 4 SOUTH NEVADA CREEK ANOMALY GEOCHEMICAL SAMPLE LOCATIONS EL 15/76 DUNDAS, TAS.

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8. CSR RETAINED AREA

CSR retained the 73 km^2 central strip including the Cuni and Dundas mineral fields. This area is being reduced by 21.78 km^2 in August. As the relinquishment report includes current work in the relinquished area, this report covers CSR's work in the retained 51 km^2.

The exploration target in this area is a Renison-style replacement tin deposit.

8.1 Current Exploration

Exploration continued on the South Nevada Creek Sn anomaly (drainage and soil sampling), the unexplained Dighem anomalies, reprocessing the airborne magnetics and trace element lithogeochemical studies of mineralisation in workings and drill core from the area. Tests were conducted over the Cuni, Carbine and Howards Road areas using a new impedance meter and the VLF-EM resistivity measuring devices.

8.1.1 South Nevada Creek

The Sn anomaly from the Siluro-Devonian sediments of the South Nevada Creek area (Ellis, 1983) was further evaluated by stream sediment sampling at 100 m intervals, panned concentrate sampling at 500 m intervals, base of slope soil sampling at 25 m intervals and random rock-chip sampling (Figure 4).

Stream sediment samples (Table 1) showed anomalous Sn values (to 570 ppm) over the full length of the drainage. Some samples showed high W (to 125 ppm) and Zn (to 160 ppm) values. These values were confirmed by panned concentrate samples

TABLE 1

DRAINAGE SAMPLE ANALYSES FROM SOUTH NEVADA CREEK

(see Figure 4 for sample locations)

Sample No.	Sn	As	W	Cu	Pb	Zn	Ni	Co	Bi	Ag
A161451	28	< 2	15	18	18	55	20	< 4	< 4	< 1
A161452	105	20	50	34	26	85	180	50	12	< 1
A161453	50	< 2	25	14	8	60	18	10	4	< 1
A161454	18	< 2	55	22	12	34	14	4	8	< 1
A161455	180	< 2	30	16	16	34	14	6	8	< 1
A161456	40	< 2	75	20	12	34	16	< 4	4	< 1
A161457	8	< 2	45	10	6	< 2	< 4	< 4	< 4	< 1
A161458	50	< 2	75	12	8	32	6	4	< 4	< 1
A161459	420	< 2	30	22	8	125	24	22	< 4	< 1
A161460	10	< 2	90	16	8	18	6	< 4	< 4	< 1
A161461	570	< 2	35	10	10	90	12	14	< 4	< 1
A161462	16	< 2	80	12	< 4	75	8	12	4	< 1
A161463	10	< 2	30	10	< 4	14	< 4	4	< 4	< 1
A161464	10	< 2	75	8	< 4	4	< 4	< 4	< 4	< 1
A161465	10	< 2	60	8	< 4	< 2	< 4	< 4	10	< 1
A161466	6	< 2	125	8	< 4	< 2	< 4	< 4	10	< 1
A161467	16	< 2	40	6	< 4	< 2	< 4	< 4	< 4	< 1
A161468	48	< 2	75	10	< 4	160	28	28	< 4	< 1
A161556	60	8	30	16	28	85	55	16	< 4	< 1
A161557	14	< 2	110	8	< 4	< 2	< 4	< 4	6	< 1
A161558	22	< 2	30	8	< 4	12	< 4	< 4	< 4	< 1
A161584	10	< 2	40	10	10	6	6	< 4	< 4	< 1
A161585	20	< 2	95	12	10	16	6	6	6	< 1
A161586	8	< 2	75	22	6	4	< 4	< 4	6	< 1
A161451H	460	< 2	60	<2	6	130	14	26	< 4	< 1
A161456H	55	< 2	25	<2	< 4	28	10	8	< 4	< 1
A161466H	22	< 2	70	<2	< 4	< 2	< 4	< 4	< 4	< 1
A161468H	155	< 2	25	24	< 4	120	16	20	< 4	< 1
A161556H	1750	2	65	18	12	700	100	110	< 4	< 1
A161558H	290	< 2	25	<2	6	65	14	16	6	< 1
A161451MC	100	<40	1100	40	100	300	600	800	<80	<10

with up to 1750 ppm Sn, up to 70 ppm W, up to 700 ppm Zn and no other anomalous elements. A ferruginous gravel sample showed similar anomalies with 100 ppm Sn, 1100 ppm W, 300 ppm Zn, 600 ppm Ni and 800 ppm Co.

The rock-chip sampling (Table 2) of outcrop within the drainage basin and on the adjacent ridges failed to show a source for the anomalous drainage geochemistry (samples A161594-A161600).

TABLE 2
SOUTH NEVADA CREEK ROCK-CHIP ANALYSES
(see Figure 4 for sample locations)

Sample No.	Sn	As	W	Cu	Pb	Zn	Ni	Co	Bi	Ag
A161594	10	<2	<10	12	<4	<2	<4	<4	8	<1
A161595	8	7	15	2	6	<2	6	<4	<4	<1
A161596	10	<2	<10	2	6	<2	<4	<4	6	<1
A161597	8	10	20	10	12	38	22	6	<4	<1
A161598	6	<2	<10	<2	<4	<2	<4	<4	<4	<1
A161599	8	<2	75	70	6	<2	<4	<4	8	<1
A161600	10	<2	<10	16	12	4	6	<4	<4	<1

Similarly, the base of slope soil samples along both banks of the stream failed to locate any source for the anomalous tin in the stream (Appendix V). The rock-chip and soil sampling failed to locate any possible source for the anomalous tin within the succession of Siluro-Devonian sediments adjacent to, or in, the South Nevada Creek valley. The faults mapped as traversing the sequence were not the tin source as none of the soil samples showed any anomalous tin values in the areas of the faults.

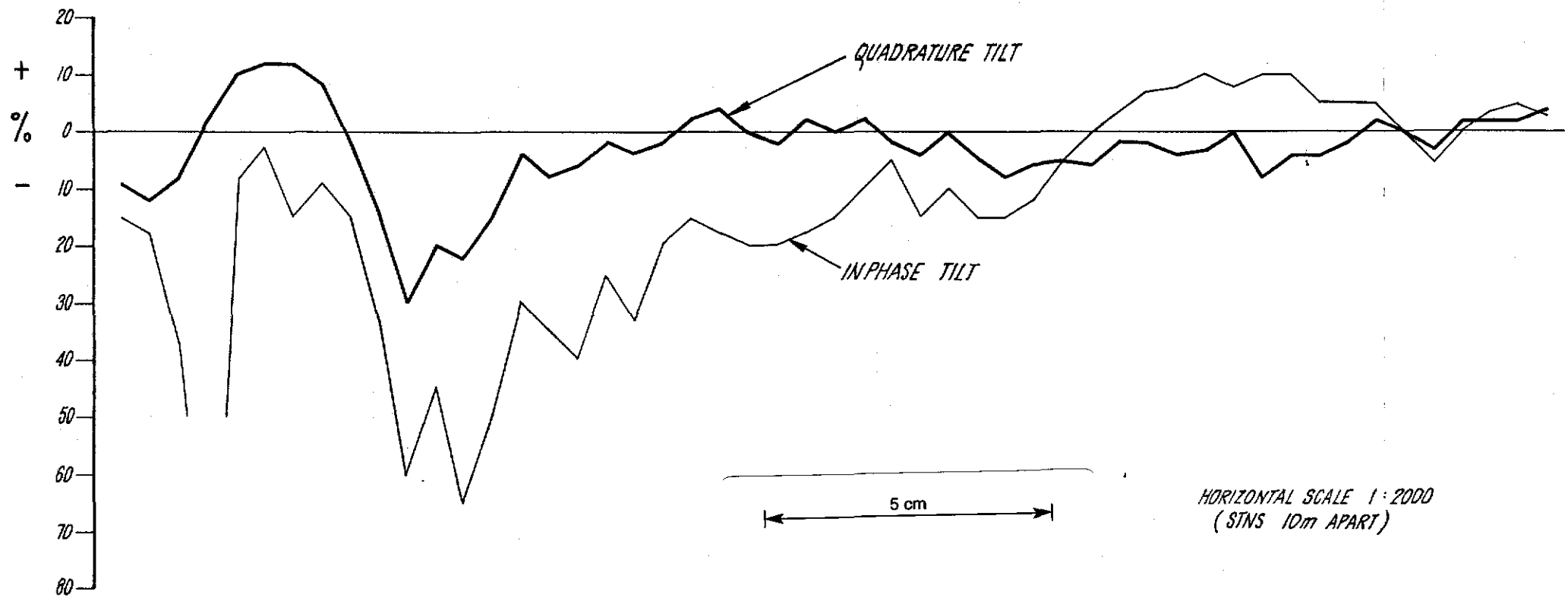

FIG. 5. VLF-EM TRAVERSE OF DIGHEM ANOMALY 27C
(HASLETTS GRAVEL PIT) EL15/76 DUNDAS TAS.

STN 1 STN 10 STN 20 STN 30 STN 40 STN 50

Although there are known tin occurrences to the northeast (Grand Prize) and west (Queen Hill area) the South Nevada Creek is separated from these by at least one steep high ridge which would act as a barrier to any fluvioglacial transportation of the tin. Also anomalous tin is not found in the valleys to the south or west.

Panned concentrate samples are being optically examined in an attempt to determine the likely tin source and the distance transported.

8.1.2 Dighem Anomalies

All the unexplained 1982 Dighem anomalies have been traversed using ground VLF-EM.

Dighem Anomaly 27C in the old Hassletts Gravel Pit area (Figure 5) showed no significant VLF-EM anomalies. The area does contain several pieces of old machinery and metal pipes which may have caused the Dighem anomaly.

Dighem Anomaly 23B-24BX-26C was traversed in two locations, in the south where it crosses the Dundas Riverlet (Figure 6) and in the north, to the west of the Razorback Mine (Figure 7). During the ground location of this anomaly a shear zone was observed within the serpentinite. However, this was neither mineralised (Ellis, 1983) nor gave a significant VLF-EM response in the southern traverse (Figure 6). The northern traverse (through thick horizontal scrub) did show an anomalous VLF-EM response in the mapped position of the shear (Figure 7). The Dighem anomaly probably represents the shear zone which may be water-logged in parts.

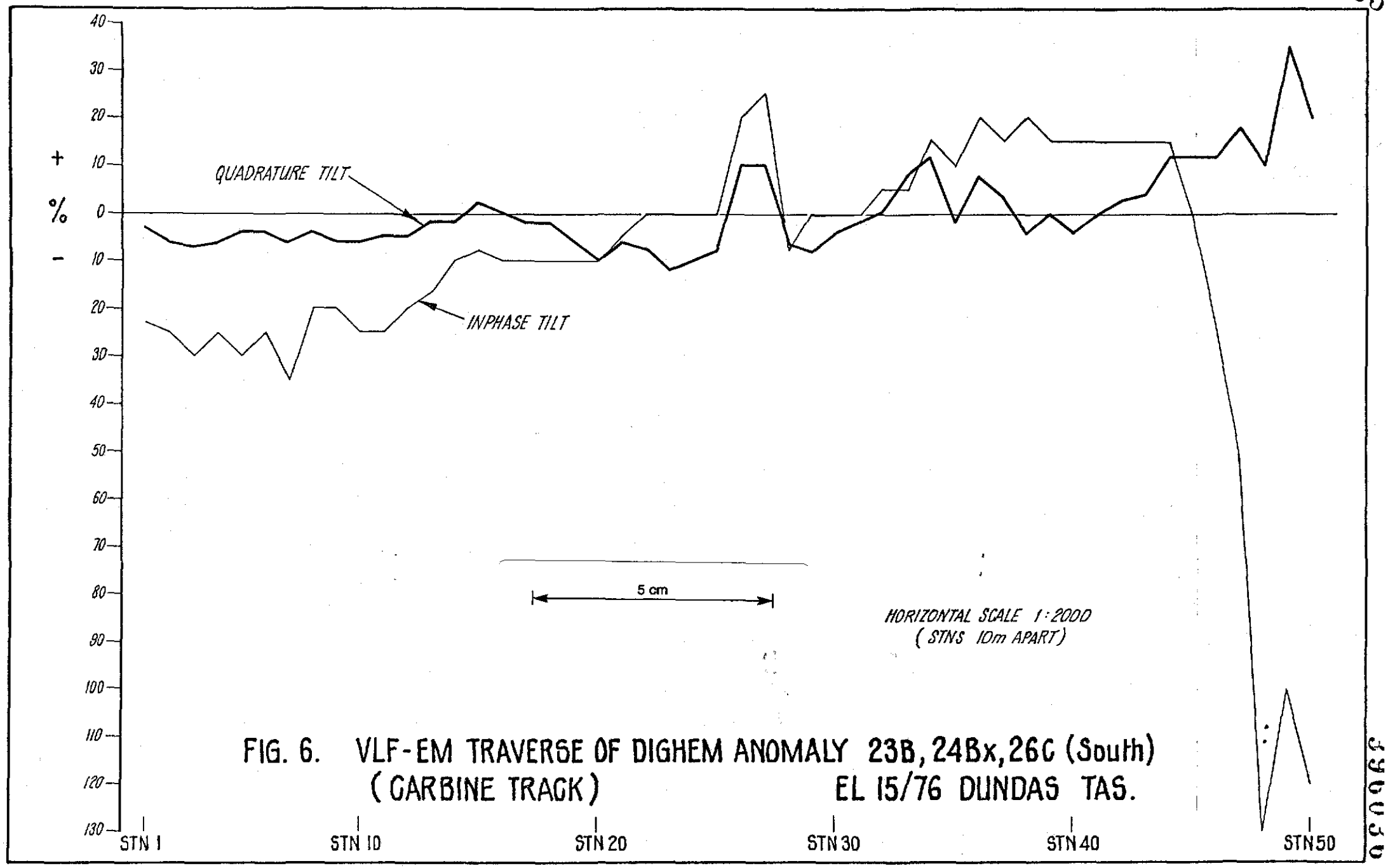

FIG. 6. VLF-EM TRAVERSE OF DIGHEM ANOMALY 23B, 24Bx, 26C (South)
(CARBINE TRACK) EL 15/76 DUNDAS TAS.

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Dighem Anomaly 26A-27A-28AX on the Dundas Access Track (Figure 8) showed no significant responses. As this is an area of no outcrop, the anomaly has not been ground located or explained. There are power lines and fences in the area.

Dighem Anomaly 19C-20AX is coincident with a Geophoto VLF-EM anomaly on the Carbine Grid. The CSR VLF-EM traverse (Figure 8) showed a significant sharp response, representing a near surface conductor. The traverse suggested the source of the conductor may be a Cu-Pb-Zn mineralised shear between the Cambrian and Precambrian rocks. This mineralisation was worked at the Carbine Mine located at the point where the VLF-EM readings became erratic. The mineralisation is near surface and gives a very spikey EM response.

Rock and mineralisation samples from the Carbine Mine (Table 3) showed anomalous As (to 1850 ppm), Pb (to 1300 ppm) and Zn (to 6300 ppm). The mineralisation is associated with carbonates in a shear zone in a series of siltstones, shales and sandstones of Cambrian and Precambrian age.

8.1.3 Trace Element Study

Evaluation of past investigations of the Dundas area showed a vast quantity of surface geochemical and/or geophysical data had repeatedly defined the same mineralised zones. These had been drilled on several occasions. No further exploration was warranted. However, the drill core and old quarries and mines provided an opportunity to obtain fresh rock samples. Trace element analysis and evaluation of these mineralised rock sections may provide a means of defining high points or "hot spots" in the underlying granitic basement and thus likely positions for a tin orebody.

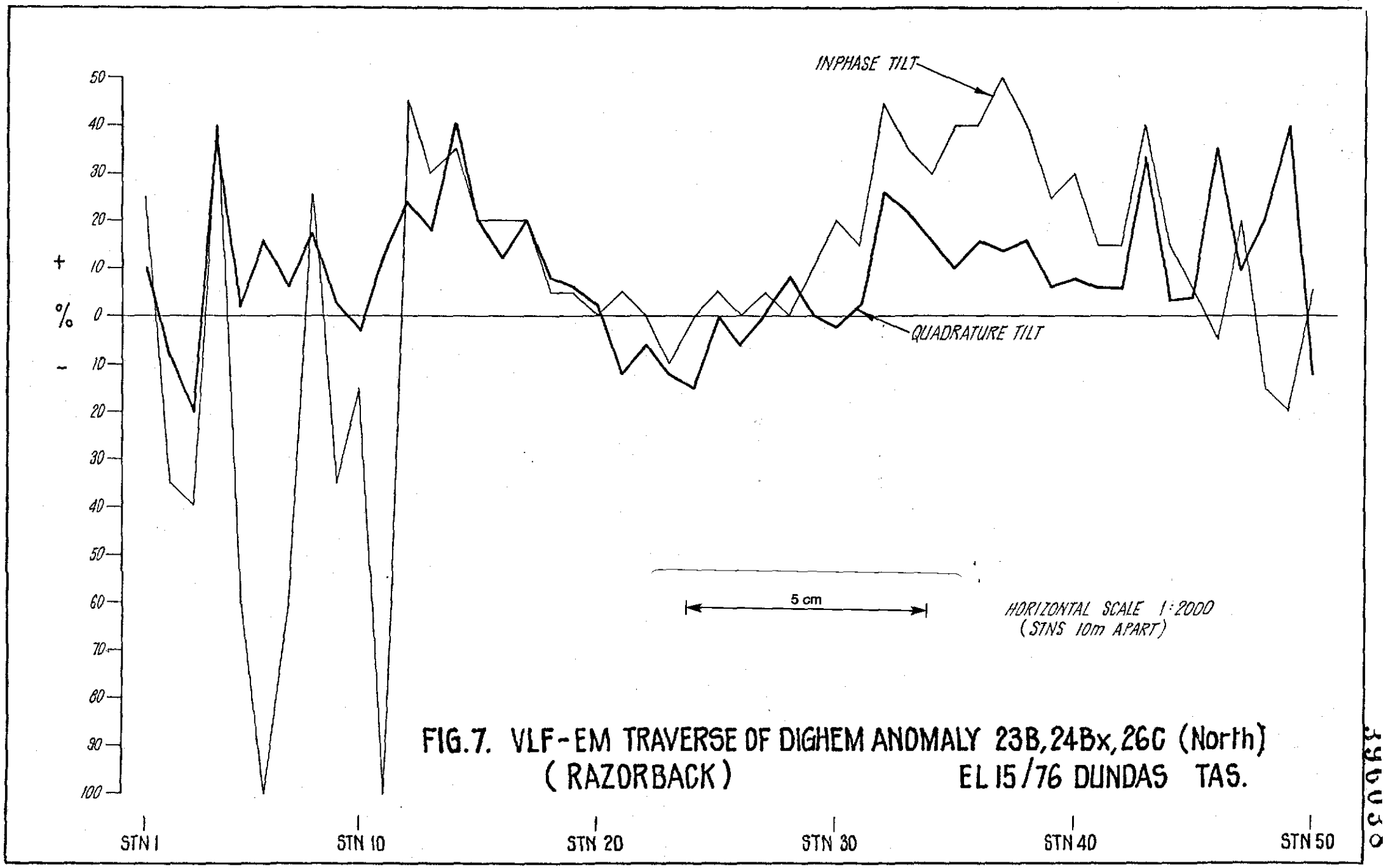

FIG.7. VLF-EM TRAVERSE OF DIGHEM ANOMALY 23B, 24Bx, 26C (North)
(RAZORBACK) EL 15/76 DUNDAS TAS.

Rock-chip samples from the mineralised intervals of all available drill core (most held by Mines Department) and from mineralised outcrop in old mines and quarries were collected and analysed for Sb, Sn, As, Mo, W, Li, Be, Cu, Pb, Zn, Bi, Ag, Au, F (Appendix VI). The sample location, surrounding lithology and recorded rock unit, the degree of oxidation and the major sulphide content were also recorded for each sample (Appendix VII).

Simple and multivariate statistics were applied to the total sample population and to groups of samples, (e.g. categorised according to lithology and associated mineralisation, etc.) but without success.

Discussions within CSR and with consultants led to the conclusion that the large number of primary rock sources and mineralising phases led to large trace element over-printing. The detailed geology of the area sampled has to be understood in order to determine this overprinting and to enable use to be made of the trace element data. A Ph.D study of the area will include detailed geological mapping of the Dundas area (contract mapping funded by CSR). The mapping will be completed in late 1984 at which stage the trace element analyses will be re-evaluated.

8.1.4 Airborne Magnetics Reprocessing

Pitt Research and CSR have attempted to reprocess and re-contour the Geoex airborne magnetic data along 250 m spaced lines. Problems with levelling and location of flight lines and discrepancies between the Mines Department 500 m spaced line positions and the CSR 250 m spaced line positions meant that for an accurate plot of the magnetic data the original track film would need to be examined exhaustively and re-plotted. This

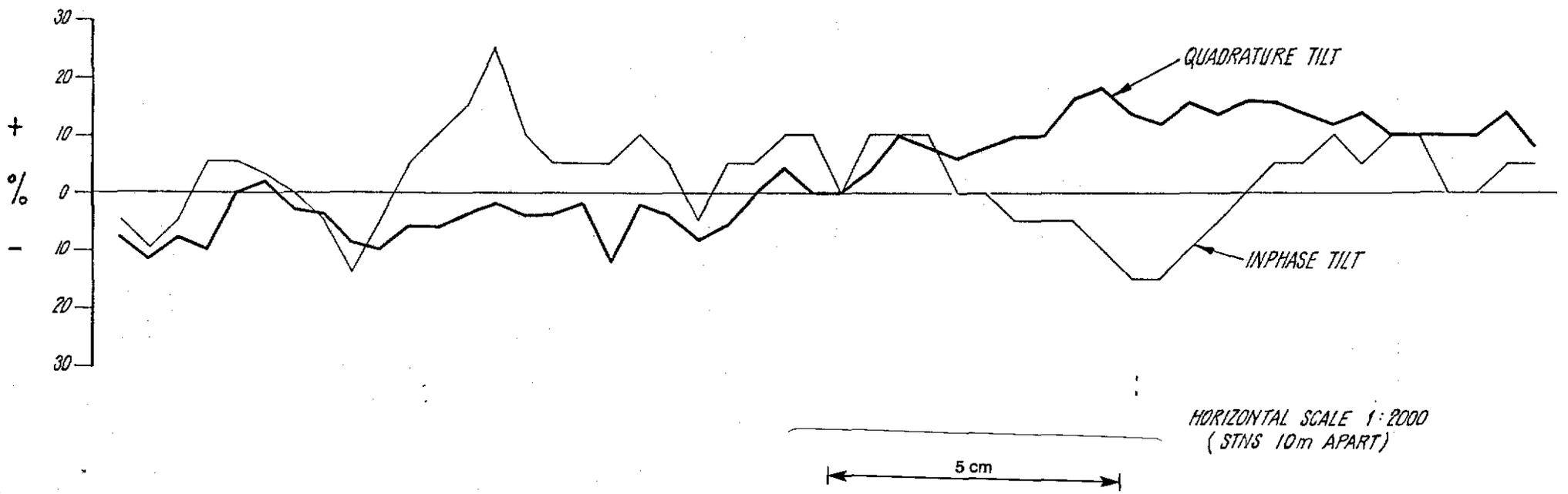

FIG. 8. VLF-EM TRAVERSE OF DIGHEM ANOMALY 26A, 27A, 28Ax
(DUNDAS ACCESS ROAD) EL 15/76 DUNDAS TAS.

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was not considered warranted as Dighem magnetic data are available.

Problems with the Geoex data were discussed with Dr. R. Richardson.

8.1.5 VLF Surface Impedance Measurements

Dr. D.V. Thiel from the Radio Science Unit at the Griffith University traversed some lines on the Cuni, Carbine and Howards Road grids with a Geonics VLF-EM16R resistivity meter and a new TSIM resistivity measuring device. These traverses were designed to calibrate the TSIM using the VLF-EM16R, to evaluate its performance as a prospecting tool, to determine effects of orientation and to check the influence of ground conductivity on the input impedance of a thin wire antenna. Traverses were along lines previously covered by CSR with other geochemical and/or geophysical techniques.

On the Cuni grid the resistivity measurements located areas of anomalous soil geochemistry and sub-surface mineralised veins, while in the Carbine area the measurements located the vein mineralisation of the old Carbine Mine (see Figure 9).

Results of the trials are included in a report by Thiel (1983) included as Appendix VIII. CSR's geo-physical comments are included as Appendix IX.

Further work is required on the Carbine anomaly in the light of the TSIM implication of significant deep mineralisation. Lines will be surveyed to the north and south of the current line.

The TSIM work over the Cuni, Carbine and Howards Road area has shown potential for surveys in other

TABLE 3

ROCK GEOCHEMISTRY CARBINE MINE VLF-EM ANOMALY

(see DRG No. K555-6 for sample locations)

Sample No.	Sn	As	W	Cu	Pb	Zn	Ni	Co	Bi	Ag	
A161601	10	5	<10	80	18	22	32	<4	<4	<1	)
A161602	12	6	30	42	12	32	42	6	<4	<1	)
A161603	12	8	<10	55	12	46	60	8	<4	<1	) Mine wall rocks
A161604	10	6	30	36	8	28	38	6	4	<1	)
A161605	12	22	10	100	18	70	70	8	4	<1	)
A161606	<4	400	<10	30	95	6300	360	16	12	<1	)
A161607	<4	990	<10	32	220	600	680	26	<4	<1	)
A161608	10	1250	10	50	1300	4500	42	16	55	9	) Mineralised dump
A161609	6	1850	40	32	960	360	65	24	38	5	) material
A161610	18	22	25	22	26	420	110	16	<4	<1	)

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areas, particularly on the Amoco J.V. ground. In this area such a survey may help delineate zones of more continuous and deeper mineralisation rather than surficial concentrations.

8.1.6 Gordon Limestone Investigations

A small gossan outcrop was located on the eastern contact of the Gordon Limestone with the Dundas Group sediments on the north bank of the Farrell Rivulet (DRG No. K555-7). Four samples from this outcrop showed very few anomalous values. Apart from one As anomaly (230 ppm) the gossan only contained anomalous Zn (300 ppm) and Ni (to 140 ppm).

Sample No.	Location on Gossan	Sn	As	W	Cu	Pb	Zn	Ni	Co	Bi	Ag
A118800	Top	4	230	10	12	50	190	120	30	<4	<1
A118800A	SW	<4	24	25	10	16	160	95	26	<4	<1
A118899	NW	<4	30	20	10	26	90	85	16	<4	<1
A118899A	NE	12	55	20	8	36	300	140	22	<4	<1

This gossan appears to be related to Fe scavenging on a faulted contact rather than to primary Pb-Zn mineralisation.

8.2 Quality Control

(a) Duplicates

During the analyses of the 31 drainage and 7 rock samples from the South Nevada Creek area (Section 8.1.1), the rock samples from the Carbine Mine (Section 8.1.2) and the 22

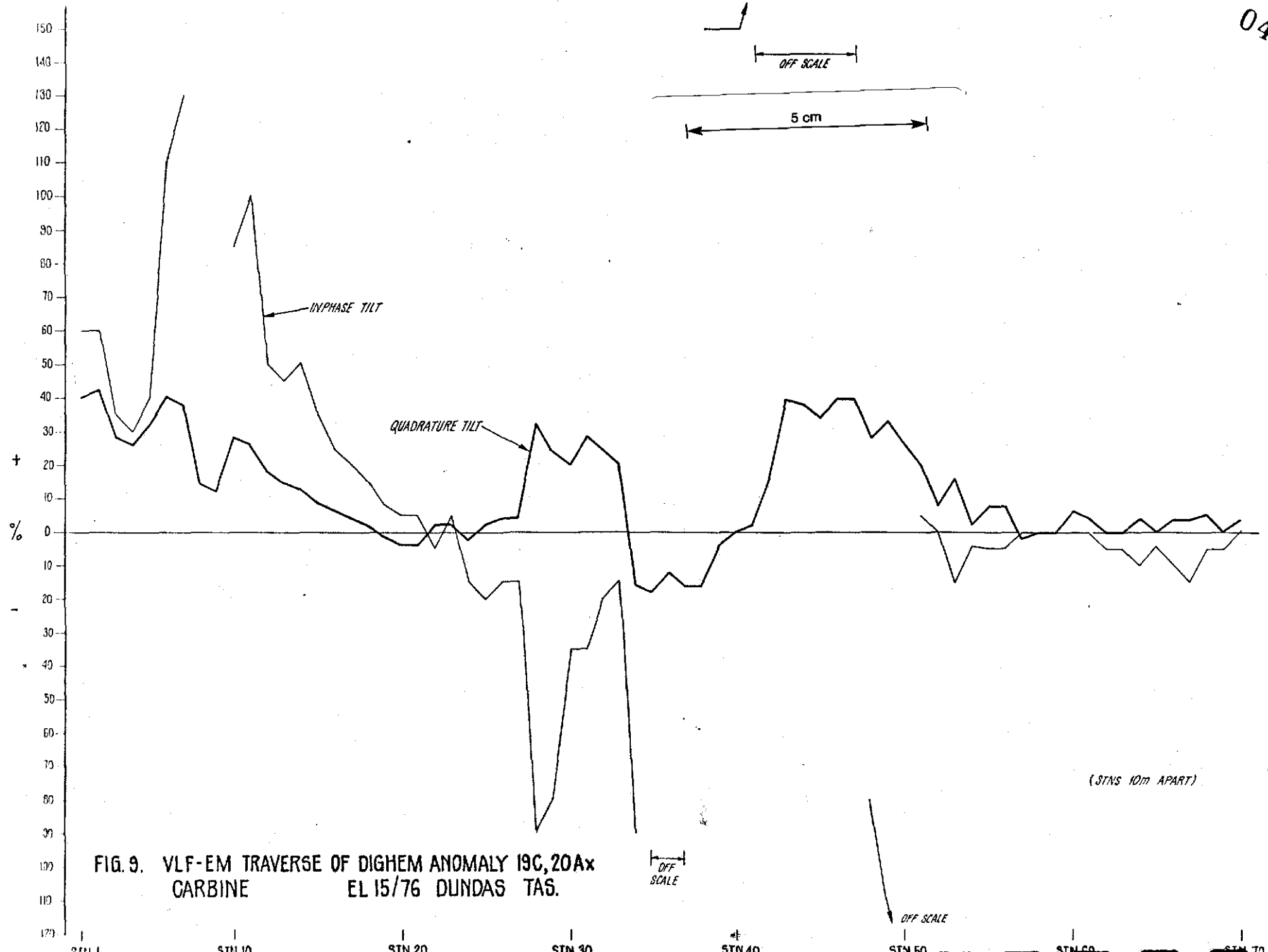

FIG. 9. VLF-EM TRAVERSE OF DIGHEM ANOMALY 19C, 20Ax
CARBINE EL 15/76 DUNDAS TAS.

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soil samples from the Dundas Howards Road area (see Relinquishment Report) a total of 6 duplicate pairs of samples were analysed. Generally there was very good agreement between the duplicates.

Duplicate No.	Sample	Sn	As	W	Cu	Pb	Zn	Ni	Co	Bi	Ag	Au
1	A161457	8	<2	45	10	6	<2	<4	<4	<4	<1	
	A161584	10	<2	40	10	10	6	6	<4	<4	<1	
2	A161465	10	<2	60	8	<4	<2	<4	<4	10	<1	
	A161586	8	<2	75	22	6	4	<4	<4	6	<1	
3	A161558	22	<2	30	8	<4	12	<4	<4	<4	<1	
	A161585	20	<2	95	12	10	16	6	6	6	<1	
4	A161571	8	2	10	14	10	75	70	8	6	<1	
	A161582	6	<2	10	14	10	75	70	8	<4	<1	<0.005
5	A161575	10	<2	20	18	32	30	10	<4	4	<1	<0.005
	A161583	8	<2	55	20	36	32	8	4	<4	<1	<0.005
6	A161577	4	6	10	30	28	44	12	6	<4	<1	<0.005
	A161581	<4	7	15	38	26	55	20	6	20	<1	<0.005

Two tungsten analyses (duplicates 3 and 5) and one bismuth analysis (duplicate 6) showed some discrepancies.

(b) Standards

During the analysis of the above samples a set of 6 standard samples were also analysed. A further set of 13 standard samples were analysed with the group of 134 soil samples from the South Nevada Creek area (Section 8.1.1), 11 soil samples from Howards Road (see Relinquishment Report) and 4 rock samples from the Gordon Limestone gossan (Section 8.1.6) while a set of 23 standard samples were analysed with the 438 drill core rock-chip samples from the Dundas trace element samples (Section 8.1.3). Generally there was very good agreement with the quoted values (Table 4), but there were some erratic Pb and Zn results in some analyses.

All samples were analysed for Sn, As and W by XRF-1; Cu, Pb, Zn and Bi by AAS-1 and Ag by AAS-3. Some samples were analysed for Mo and Sb by XRF-1; Co and Ni by AAS-1; Li and Be by AAS-6; Au by AAS-5A and for fire assay and F by SIE-3.

8.3 Proposed Exploration

The results of the optical examination of the panned concentrate samples from the South Nevada Creek will determine future activity. If the concentrates contain only rounded cassiterite with no other calc-silicate (skarn) minerals, then it is probable that the anomalous tin is from fluvioglacial reworking and no further work would be required. Otherwise the valley will be gridded and traversed with geophysics in an attempt to define the source of the tin.

not all Sn/As occurs in skarns - in fact most doesn't!

A detailed geological map of the Dundas area will be produced. This will be utilised to evaluate the trace element geochemistry of the drill core mineralisation already sampled and analysed. This evaluation will also include further sampling of all unaltered primary rock sources in an attempt to determine background and overprinting trace element effects for each major rock group.

The trace element evaluation may define topographic highs or "hot spots" in the underlying granitic basement of the area. If these hot spots are in areas of carbonate horizons (defined from the mapping or past drilling) then deep drill holes at Renison-style replacement deposit potential areas may be proposed.

Further work on the Carbine area is required. This will entail gridding to the north and south of the current line and traversing with VLF-EM16, VLF-EM16R/TSIM and magnetics. The Geophoto drilling will be re-evaluated in the light of this work.

TABLE 4 - ANALYSES OF STANDARDS

Standard No.	Sample	Sn	As	W	Cu	Pb	Zn	Ni	Co	Bi	Ag	Au	Sb	Mo	Li	Be	F %
1H	Quoted	<10	11	53	72	14	35	58	6	12	<1	0.057					
	A161611 x	10	8	65	80	14	34	50	6	10	<1	0.10					
	A118903A o	6	10	45	55	20	22	38	<4	<4	<1	<0.005/0.045*					
	A118912A o	< 4	10	50	65	18	24	44	<4	<4	<1	<0.005/0.055*					
	A118902A +	6	12	40	85	16	36	-	-	14	1	0.05	10	190	30	<1	0.15
	A118919A +	< 4	9	45	75	44	46	-	-	10	<1	<0.05	14	190	20	<1	0.11
	A119280 +	8	12	50	80	110	135	-	-	12	1	<0.05	16	190	<10	<1	0.1
5	Quoted	-	14	-	107	13	112	-	-	28	-						
	A161612 x	20	10	45	110	26	130	48	8	28	<1						
	A118780A o	8	10	50	110	10	135	48	6	22	<1						
	A118801A o	6	12	45	95	8	130	46	6	26	<1						
	A118857A o	< 4	12	30	100	8	130	46	6	26	<1						
	A161766A +	6	12	55	110	200	180	-	-	30	1	0.05	10	16	30	<1	0.09
	A119020 +	4	12	40	110	55	330	-	-	26	<1	<0.05	4	16	20	<1	0.09
	A119349 +	10	12	60	130	18	140	-	-	30	<1	<0.05	6	16	<10	<1	0.0
6	Quoted		7		185	15	100			29							
	A118891A o	12	8	90	170	14	100	42	8	26	<1						
9	Quoted	21.4															
	A161615 x	28	< 2	70	8	4	< 2	<4	<4	8	<1						
	A118826A o	22	< 2	10	< 4	< 4	< 2	4	<4	<4	<1						
	A118892A o	12	< 2	<10	2	< 4	< 2	<2	<4	<4	<1						
	A118644A +	24	65	15	12	120	34	-	-	<4	<1	<0.05	100	6	<10	<1	0.01
	A119100 +	20	12	<10	10	44	70			<4	2	<0.05	12	6	<10	<1	0.01
	A119391 +	24	2	55	20	8	34			<4	<1	<0.05	< 4	6	<10	<1	0.0
8	Quoted		76.5										7.67				
	A118609A +	< 4	85	<10	20	38	55	-	-	<4	1	<0.05	4	30	20	<1	0.04
	A119060 +	< 4	80	35	16	200	240			<4	2	<0.05	< 4	26	10	<1	0.04
	A119371 +	< 4	105	<10	14	22	60			<4	<1	<0.05	10	26	<10	<1	0.0
10	Quoted	36.8															
	A118803A o	40	2	<10	4	< 4	4	6	<4	<4	<1						

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Standard No.	Sample	Sn	As	W	Cu	Pb	Zn	Ni	Co	Bi	Ag	Au	Sb	Mo	Li	Be	F %
11	Quoted	138															
	A161618 x	140	3	20	26	8	20	<4	<4	22	<1						
	A118687A+	130	< 2	10	14	22	55			<4	<1	<0.05	4	<4	10	<1	0.02
	A119150 +	140	< 2	<10	18	42	85			<4	1	<0.05	6	4	-	-	0.02
	A119355 +	135	< 2	40	14	10	16			<4	<1	<0.05	6	4	<10	<1	0.0
12	Quoted	68															
	A161621 x	75	< 2	60	2	10	<2	<4	<4	<4	<1						
	A118705A+	60	2	<10	12	65	110			<4	<1	<0.05	<4	<4	<10	<1	0.02
	A119190 +	75	< 2	<10	14	48	140			<4	<1	<0.05	<4	6	<10	<1	0.09
	A119512 +	65	< 2	55	4	121	20			<4	<1	<0.05	6	20	20	<1	0.0
12A	Quoted	294															
	A118781A o	280	< 2	20	12	18	18	6	<4	<4	<1						
	A118825A o	280	3	40	10	16	18	6	<4	<4	<1						
13	Quoted	505															
	A161624 x	510	< 2	30	10	8	<2	<4	<4	<4	<1						
	A118782A o	460	4	<10	4	< 4	<2	<4	<4	<4	<1						
	A118855A o	460	4	<10	2	< 4	<2	4	<4	<4	<1						
	A118748A+	510	10	15	12	120	310			<4	<1	<0.05	<4	<4	<10	<1	<0.01
	A119240 +	510	< 2	<10	8	70	200			<4	<1	<0.05	4	4	<10	<1	0.0
19	Quoted		47.8										14.4				
	A161737A+	<4	44	20	38	26	60			<4	<1	<0.05	16	20	10	<1	0.03
	A118971A+	4	48	10	40	130	60			<4	<1	<0.05	34	18	<10	<1	0.03
	A119330 +	6	120	<10	38	55	120			<4	4	<0.05	50	16	20	<1	0.03

x South Nevada Creek drainage and rock, Carbine Mine rock, Howards Road soil (22)

o South Nevada Creek soil, Howards Road soil (11), Gordon Limestone

\+ Drill core rock chip

* Au by fire assay

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9. REFERENCES

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PDE/SGL

June 1984

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APPENDIX I

AMOCO MINERALS - PROGRESS REPORT

JULY TO DECEMBER 1983

JOINT VENTURE AREA - PART EL 15/76 DUNDAS

See accompanying report

JONES, P.A., 1983 : PROGRESS REPORT,

JULY TO DECEMBER, 1983

AMOCO-CSR JOINT VENTURE, PART E.L. 15/76, DUNDAS, TASMANIA

UNPUBLISHED AMOCO MINERALS REPORT

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APPENDIX II

AMOCO MINERALS - PROGRESS REPORT

JANUARY TO JUNE 1984

JOINT VENTURE AREA - PART EL 15/76 DUNDAS

See accompanying report

KARY, G.L., 1984 : PROGRESS REPORT,

JANUARY TO JUNE, 1984

AMOCO-CSR JOINT VENTURE, PART E.L. 15/76, DUNDAS, TASMANIA

UNPUBLISHED AMOCO MINERALS REPORT

TCR 84-2162

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APPENDIX III

ELECTROLYTIC ZINC CO. A'ASIA - MONTEZUMA JOINT VENTURE,

PART EL 15/76 - PROGRESS REPORT

4TH MAY TO 4TH NOVEMBER, 1983

See accompanying report

SAINTY, R.A., 1983 : MONTEZUMA J.V., PART E.L. 15/76

REPORT ON EXPLORATION ACTIVITY

4TH MAY TO 4TH NOVEMBER, 1983

EZ CO. A'SIA LTD. REPORT NO. 172 (UNPUBLISHED)

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APPENDIX IV

ELECTROLYTIC ZINC CO. A'ASIA - MONTEZUMA JOINT VENTURE,

PART EL 15/76 - PROGRESS REPORT

5TH NOVEMBER, 1983 TO 29TH MAY, 1984

See accompanying report

SAINTY, R.A., 1984 : MONTEZUMA J.V., PART E.L. 15/76

REPORT ON EXPLORATION ACTIVITY

5TH NOVEMBER, 1983 TO 29TH MAY, 1984

UNPUBLISHED EZ CO A'ASIA LTD. REPORT NO. T180

TCR 84-2163

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APPENDIX V

SOUTH NEVADA CREEK ANOMALY - GEOCHEMISTRY - EL 15/76

DUNDAS

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COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES

Dundas

396056

Head Office and Central Laboratory
305 SOUTH ROAD,
MILE END SOUTH
STH. AUST. 5031
TEL.: (08) 43 5722
TELEX: AA89323

NATA REGISTERED No. 1526

OUR REF.: COM 840070

YOUR REF.: Order No. 30724

Mr. P. Ellis,
CSR Limited,
Minerals Division,
35 East Derwent Highway,
LINDISFARNE TAS 7015.

3.2.84

Dear Peter,

RE: JOB COM 840070

Enclosed are the assays for the samples delivered to our laboratory on the 18th January 1984.

Yours sincerely,
COMLABS PTY LTD

per :

c.c.: SYDNEY

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

	SAMPLE	Sn	As	W	
A16145 LEM	A 118780 -20+80#	4	<2	35	
	A 118780A	8	10	50	6X5
Right	A 118781 -20+80#	6	<2	40	
	A 118781A	280	<2	20	6X12A
L	A 118782 -20+80#	6	<2	40	
	A 118782A	460	4	<10	6X13
R	A 118783 -20+80#	10	<2	35	
L	A 118784 -20+80#	4	<2	25	
R	A 118785 -20+80#	6	<2	40	
L	A 118786 -20+80#	4	2	30	
R	A 118787 -20+80#	4	<2	40	
A16152 L	A 118788 -20+80#	4	2	70	
R	A 118789 -20+80#	6	<2	40	
L	A 118790 -20+80#	4	<2	50	
R	A 118791 -20+80#	8	<2	35	
L	A 118792 -20+80#	6	2	45	
R	A 118793 -20+80#	4	<2	20	
L	A 118794 -20+80#	4	<2	65	
R	A 118795 -20+80#	6	<2	25	
A16153 L	A 118796 -20+80#	6	<2	60	
R	A 118797 -20+80#	8	<2	40	
L	A 118798 -20+80#	4	<2	65	
R	A 118799 -20+80#	6	<2	30	
	A 118801 -20+80#	<4	<2	55	
	A 118801A	6	12	45	6x5

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

SAMPLE	Sn	As	W	
A 118802 -20+80#	8	<2	35	
A 118802A	4	<2	<10	
A 118803 -20+80#	4	<2	60	
A 118803A	40	2	<10	6x 10
A 118804 -20+80#	8	<2	35	A161454
A 118805 -20+80#	<4	<2	45	A161454
A 118806 -20+80#	6	9	40	
A 118807 -20+80#	6	<2	80	
A 118808 -20+80#	6	3	25	
A 118809 -20+80#	6	<2	70	
A 118810 -20+80#	8	<2	20	
A 118811 -20+80#	10	<2	55	
A 118812 -20+80#	4	<2	40	A161455
A 118813 -20+80#	6	<2	75	A161455
A 118814 -20+80#	4	2	30	
A 118815 -20+80#	4	<2	65	
A 118816 -20+80#	8	<2	15	
A 118817 -20+80#	8	3	70	
A 118818 -20+80#	10	<2	15	
A 118819 -20+80#	4	<2	55	
A 118820 -20+80#	10	<2	15	A161456
A 118821 -20+80#	6	<2	65	A161456
A 118822 -20+80#	8	<2	<10	
A 118823 -20+80#	4	<2	70	
A 118824 -20+80#	4	<2	<10	

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

	SAMPLE	Sn	As	W	
L	A 118825 -20+80#	<4	<2	65	
	A 118825A	280	3	40	GXBA
L	A 118826 -20+80#	6	<2	<10	
	A 118826A	22	<2	10	GXA
L	A 118827 -20+80#	8	3	50	
L	A 118828 -20+80#	<4	<2	15	
L	A 118829 -20+80#	8	<2	70	
L	A 118830 -20+80#	4	<2	10	
L	A 118831 -20+80#	<4	10	50	
L	A 118832 -20+80#	4	<2	<10	
L	A 118833 -20+80#	4	28	10	
L	A 118834 -20+80#	10	3	10	
L	A 118835 -20+80#	LNR	LNR	LNR	
L	A 118836 -20+80#	<4	<2	65	
L	A 118837 -20+80#	4	<2	20	
L	A 118838 -20+80#	6	2	35	
L	A 118839 -20+80#	6	3	15	
L	A 118840 -20+80#	8	<2	250	
L	A 118841 -20+80#	6	<2	45	
L	A 118842 -20+80#	4	<2	80	
L	A 118843 -20+80#	4	2	190	
L	A 118844 -20+80#	6	<2	100	
L	A 118845 -20+80#	<4	<2	15	
L	A 118846 -20+80#	8	3	155	
L	A 118847 -20+80#	12	2	85	

A161457

A161458

A161459

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

	SAMPLE	Sn	As	W	
A16460	A 118848 -20+80#	4	<2	65	
	A 118849 -20+80#	10	<2	<10	
	A 118850 -20+80#	4	<2	60	
	A 118851 -20+80#	6	<2	20	
	A 118852 -20+80#	8	<2	55	
	A 118853 -20+80#	4	<2	10	
	A 118854 -20+80#	4	3	70	
	A 118855 -20+80#	4	2	10	
	A 118855A	460	4	<10	6 x 13
	A 118856 -20+80#	4	<2	75	
	A 118856A	8	<2	20	
	A 118857 -20+80#	8	<2	<10	
	A 118857A	<4	12	30	6 x 5
	A 118858 -20+80#	<4	2	50	
	A 118859 -20+80#	<4	2	<10	
	A 118860 -20+80#	4	2	25	
	A 118861 -20+80#	<4	<2	<10	
	A 118862 -20+80#	6	<2	20	
	A 118863 -20+80#	4	<2	15	
A16461	A 118864 -20+80#	4	<2	30	
	A 118865 -20+80#	<4	<2	<10	
	A 118866 -20+80#	8	<2	45	
	A 118867 -20+80#	4	<2	<10	
	A 118868 -20+80#	8	<2	<10	
	A 118869 -20+80#	4	<2	50	

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

SAMPLE	Sn	As	W	
A 118870 -20+80#	4	<2	40	
A 118871 -20+80#	6	<2	<10	
A 118872 -20+80#	4	<2	45	
A 118873 -20+80#	8	<2	10	
A 118874 -20+80#	8	<2	35	
A 118875 -20+80#	<4	<2	45	
A 118876 -20+80#	<4	<2	45	
A 118877 -20+80#	4	<2	40	
A 118878 -20+80#	6	<2	40	
A 118879 -20+80#	6	<2	50	
A 118880 -20+80#	4	<2	35	
A 118881 -20+80#	4	<2	40	
A 118882 -20+80#	10	<2	45	
A 118883 -20+80#	<4	<2	50	
A 118884 -20+80#	6	<2	45	
A 118885 -20+80#	8	<2	35	
A 118886 -20+80#	8	<2	35	
A 118887 -20+80#	6	3	35	
A 118888 -20+80#	6	2	50	
A 118889 -20+80#	6	<2	50	
A 118890 -20+80#	<4	<2	50	
A 118891 -20+80#	8	<2	35	
A 118891A	12	8	90	6 x 6
A 118892 -20+80#	12	<2	70	
A 118892A	12	<2	<10	6 x 9

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

SAMPLE	Sn	As	W	
A 118893 -20+80#	4	<2	40	
A 118894 -20+80#	6	2	60	
A 118895 -20+80#	<4	<2	35	
A 118896 -20+80#	4	5	55	
A 118897 -20+80#	4	<2	50	
A 118898 -20+80#	4	<2	65	
A 118900 -20+80#	6	<2	40	
A 118901 -20+80#	6	5	45	
A 118902 -20+80#	4	<2	<10	
A 118903 -20+80#	<4	<2	45	
A 118903A	6	10	45	6 x 1H
A 118912A	<4	10	50	6X1H
A 118800 -20+80#	4	230	10	
A 118800A	<4	24	25	
A 118899 -20+80#	<4	30	20	
A 118899A	12	55	20	

Method of Analysis : XRF1

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi	Ag	
A 118780 -80#	20	48	70	6	<4	<4	<1	
A 118780A	110	10	135	48	6	22	<1	GX5
A 118781 -80#	16	155	44	-10	<4	<4	<1	
A 118781A	12	18	18	6	<4	<4	<1	GX12A
A 118782 -80#	10	10	26	4	<4	<4	<1	
A 118782A	4	<4	<2	<4	<4	<4	<1	GX13
A 118783 -80#	22	55	95	6	<4	<4	<1	
A 118784 -80#	24	80	100	6	<4	<4	<1	
A 118785 -80#	20	50	110	6	<4	<4	<1	
A 118786 -80#	22	12	34	4	<4	<4	<1	
A 118787 -80#	12	14	18	6	<4	<4	<1	
A 118788 -80#	26	32	55	6	<4	<4	<1	
A 118789 -80#	10	30	42	6	<4	<4	<1	
A 118790 -80#	6	6	8	6	<4	<4	<1	
A 118791 -80#	18	38	42	6	<4	<4	<1	
A 118792 -80#	14	6	24	4	<4	<4	<1	
A 118793 -80#	4	4	12	<4	<4	<4	<1	
A 118794 -80#	10	<4	10	4	<4	<4	<1	
A 118795 -80#	12	16	22	4	<4	<4	<1	
A 118796 -80#	18	18	36	6	<4	<4	<1	
A 118797 -80#	14	22	30	6	<4	<4	<1	
A 118798 -80#	12	4	22	6	<4	<4	<1	
A 118799 -80#	16	80	95	6	<4	<4	<1	
A 118801 -80#	12	10	20	6	<4	<4	<1	
A 118801A	95	8	130	46	6	26	<1	GX5

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi	Ag
A 118802 -80#	4	32	42	6	<4	<4	<1
A 118802A	8	8	12	6	<4	<4	<1
A 118803 -80#	8	4	18	6	<4	<4	<1
A 118803A	4	<4	4	6	<4	<4	<1
A 118804 -80#	18	<4	22	4	<4	<4	<1
A 118805 -80#	4	10	6	6	<4	<4	<1
A 118806 -80#	8	20	10	8	<4	<4	<1
A 118807 -80#	18	22	20	48	10	<4	<1
A 118808 -80#	18	35	14	12	<4	<4	<1
A 118809 -80#	6	10	14	8	<4	<4	<1
A 118810 -80#	14	35	14	12	<4	<4	<1
A 118811 -80#	4	<4	8	8	<4	<4	<1
A 118812 -80#	10	20	10	12	<4	<4	<1
A 118813 -80#	20	14	20	8	<4	<4	<1
A 118814 -80#	16	20	18	18	<4	<4	<1
A 118815 -80#	10	6	12	6	<4	<4	<1
A 118816 -80#	16	24	24	10	<4	<4	<1
A 118817 -80#	10	120	14	10	<4	<4	<1
A 118818 -80#	12	12	18	10	<4	<4	<1
A 118819 -80#	4	6	12	8	<4	<4	<1
A 118820 -80#	12	30	18	8	<4	<4	<1
A 118821 -80#	8	20	18	8	8	<4	<1
A 118822 -80#	24	42	32	16	<4	<4	<1
A 118823 -80#	8	6	10	6	<4	<4	<1
A 118824 -80#	12	26	28	8	<4	<4	<1

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi	Ag	
A 118825 -80#	6	16	12	6	<4	<4	<1	
A 118825A	10	16	18	6	<4	<4	<1	GX 124
A 118826 -80#	20	30	24	8	<4	<4	<1	
A 118826A	<4	<4	<2	4	<4	<4	<1	GX9
A 118827 -80#	12	20	18	34	<4	<4	<1	
A 118828 -80#	10	6	12	12	<4	<4	<1	
A 118829 -80#	8	18	20	6	<4	<4	<1	
A 118830 -80#	10	20	50	12	<4	<4	<1	
A 118831 -80#	8	36	30	14	<4	<4	<1	
A 118832 -80#	8	30	18	8	<4	<4	<1	
A 118833 -80#	14	50	80	16	16	<4	<1	
A 118834 -80#	18	10	18	10	<4	<4	<1	
A 118835 -80#	14	20	18	12	<4	<4	<1	
A 118836 -80#	10	4	14	6	<4	<4	<1	
A 118837 -80#	10	8	10	8	<4	<4	<1	
A 118838 -80#	8	4	10	6	<4	<4	<1	
A 118839 -80#	8	10	10	8	<4	<4	<1	
A 118840 -80#	8	14	60	8	<4	<4	<1	
A 118841 -80#	12	26	70	14	<4	<4	<1	
A 118842 -80#	8	6	8	8	<4	<4	<1	
A 118843 -80#	6	24	46	4	<4	<4	<1	
A 118844 -80#	8	6	10	8	<4	<4	<1	
A 118845 -80#	12	16	28	10	<4	<4	<1	
A 118846 -80#	10	16	30	10	<4	<4	<1	
A 118847 -80#	10	18	18	16	<4	<4	<1	

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Pt	Ag	
A 118848 -80#	12	18	18	10	<4	<4	<1	
A 118849 -80#	12	12	22	10	<4	<4	<1	
A 118850 -80#	12	14	18	10	<4	<4	<1	
A 118851 -80#	10	10	20	8	<4	<4	<1	
A 118852 -80#	10	30	60	12	<4	<4	<1	
A 118853 -80#	8	8	16	10	<4	<4	<1	
A 118854 -80#	8	16	18	8	<4	<4	<1	
A 118855 -80#	6	12	18	8	<4	<4	<1	
A 118855A	2	<4	2	4	<4	<4	<1	6x13
A 118856 -80#	4	<4	4	4	<4	<4	<1	
A 118856A	4	6	10	8	<4	<4	<1	
A 118857 -80#	12	36	30	10	<4	<4	<1	
A 118857A	100	8	130	46	6	26	<1	6x5
A 118858 -80#	10	12	16	16	<4	<4	<1	
A 118859 -80#	10	6	20	10	<4	<4	<1	
A 118860 -80#	12	40	34	6	<4	<4	<1	
A 118861 -80#	8	6	8	6	<4	<4	<1	
A 118862 -80#	16	40	50	8	<4	<4	<1	
A 118863 -80#	6	<4	8	6	<4	<4	<1	
A 118864 -80#	8	10	18	6	<4	<4	<1	
A 118865 -80#	6	<4	6	6	<4	<4	<1	
A 118866 -80#	6	14	12	8	<4	<4	<1	
A 118867 -80#	6	<4	4	6	<4	<4	<1	
A 118868 -80#	10	10	12	6	<4	<4	<1	
A 118869 -80#	6	<4	8	6	<4	<4	<1	

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi	Ag	
A 118870 -80#	8	12	10	8	<4	<4	<1	
A 118871 -80#	4	<4	4	6	<4	<4	<1	
A 118872 -80#	8	14	14	8	<4	<4	<1	
A 118873 -80#	8	<4	8	8	<4	<4	<1	
A 118874 -80#	14	<4	20	10	<4	<4	<1	
A 118875 -80#	10	<4	6	6	<4	<4	<1	
A 118876 -80#	20	10	28	8	<4	<4	<1	
A 118877 -80#	8	<4	8	10	<4	<4	<1	
A 118878 -80#	38	14	32	14	<4	<4	<1	
A 118879 -80#	28	14	28	20	<4	<4	<1	
A 118880 -80#	20	12	24	10	<4	<4	<1	
A 118881 -80#	20	14	34	34	8	<4	<1	
A 118882 -80#	8	<4	8	8	<4	<4	<1	
A 118883 -80#	18	6	18	8	<4	<4	<1	
A 118884 -80#	12	6	14	8	<4	<4	<1	
A 118885 -80#	20	12	28	10	<4	<4	<1	
A 118886 -80#	18	16	30	10	<4	<4	<1	
A 118887 -80#	30	65	60	12	<4	<4	<1	
A 118888 -80#	22	18	30	10	<4	<4	<1	
A 118889 -80#	24	32	38	48	12	<4	<1	
A 118890 -80#	30	12	36	8	<4	<4	<1	
A 118891 -80#	18	36	24	6	<4	<4	<1	
A 118891A	170	14	100	42	8	26	<1	6x6
A 118892 -80#	20	30	16	10	<4	<4	<1	
A 118892A	2	<4	<2	<4	<4	<4	<1	6x9

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ANALYTICAL REPORT

JOB COM840070 O/N : 30724

Results in ppm

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi	Ag	
A 118893 -80#	18	14	14	10	<4	<4	<1	
A 118894 -80#	22	24	22	10	<4	<4	<1	
A 118895 -80#	30	10	22	12	<4	<4	<1	
A 118896 -80#	10	6	4	16	<4	<4	<1	
A 118897 -80#	10	8	4	6	<4	<4	<1	
A 118898 -80#	16	<4	10	10	<4	<4	<1	
A 118900 -80#	18	22	26	10	<4	<4	<1	
A 118901 -80#	18	55	42	12	<4	<4	<1	
A 118902 -80#	2	<4	4	<4	<4	<4	<1	
A 118903 -80#	14	<4	10	16	<4	<4	<1	
A 118903A	55	<4	22	38	<4	<4	<1	GX14
A 118912A	65	40	24	44	<4	<4	<1	GX14
A 118800 -80#	12	50	190	120	30	<4	<1	
A 118800A	10	16	160	95	26	<4	<1	
A 118899 -80#	10	26	90	85	16	<4	<1	
A 118899A	8	36	300	140	22	<4	<1	

Method of Analysis : Cu Pb Zn Ni Co Bi : AAS1
Ag : AAS3

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ANALYTICAL REPORT

JOB CON840070 O/N : 30724

Results in ppm

SAMPLE	Au	
A 118903A	<0.005	GX/H
A 118104 -20#	<0.005	
A 118105 -20#	<0.005	
A 118106 -20#	<0.005	
A 118107 -20#	<0.005	
A 118108 -20#	<0.005	
A 118109 -20#	<0.005	
A 118110 -20#	<0.005	
A 118111 -20#	<0.005	
A 118112 -20#	<0.005	
A 118912A	<0.005	GX/H

Method of Analysis : Au : AAS5B

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APPENDIX VI

EL 15/76 DUNDAS - TRACE ELEMENT ANALYSES OF MINERALISATION

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COMLABS Pty. Ltd.

COMPUTERISED ANALYTICAL LABORATORIES

Head Office and Central Laboratory
305 SOUTH ROAD,
MILE END SOUTH
STH. AUST. 5031
TEL.: (08) 43 5722
TELEX: AA89323

NATA REGISTERED No. 1526

OUR REF.: COM 840023

YOUR REF.: Order No. 30723

Mr. P. Ellis,
CSR Limited,
Minerals Division,
35 East Derwent Highway,
LINDISFARNE TAS 7015,

6.2.84

Dear Peter,

RE: JOB COM 840023

Enclosed are the assays for the samples delivered to our laboratory on the 9th January 1984.

Yours sincerely,
COMLABS PTY LTD

per : P R Harvey

c.c.: SYDNEY

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be	
A 161702A	10	6	12	190	40	30	<1	
A 161703	4	6	4	<4	<10	<10	<1	GRANODIORITE
A 161706	20	185	230	<4	<10	30	<1	"
A 161707	28	70	175	<4	15	70	<1	"
A 161708	6	32	30	<4	10	100	<1	"
A 161711	55	<4	40	<4	<10	30	<1	KAPI
A 161712	95	<4	410	<4	<10	10	<1	"
A 161713	18	<4	80	<4	<10	<10	<1	"
A 161714	28	<4	18	6	<10	10	<1	"
A 161717	<4	4	4	<4	<10	10	<1	"
A 161720	8	4	65	<4	<10	20	<1	"
A 161723	<4	1850	10	<4	<10	10	<1	GRANODIORITE
A 161724	8	2550	460	<4	<10	10	<1	"
A 161725	4	22	7	<4	<10	10	<1	"
A 161726	<4	1.07%	400	<4	<10	10	<1	"
A 161729	<4	28	<2	<4	<10	50	<1	"
A 161731	185	210	260	4	10	<10	<1	"
A 161732	1750	680	1200	14	15	<10	<1	"
A 161733	8	6	<2	<4	<10	<10	<1	"
A 161734	80	16	12	<4	<10	10	<1	"
A 161735	12	4	<2	<4	<10	10	<1	"
A 161736	1050	1000	210	8	<10	10	<1	"
A 161737A	16	<4	44	20	20	10	<1	
A 161738	48	<4	145	<4	<10	<10	<1	DUST
A 161740	105	60	1700	4	10	<10	<1	MIX

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be	
A 161741	110	4	2250	6	10	10	<1	KZN
A 161742	80	160	1350	8	95	<10	<1	"
A 161743	70	65	1050	10	20	<10	<1	"
A 161744	10	200	690	<4	<10	20	<1	"
A 161745	6	4	14	<4	<10	<10	<1	"
A 161747	8	10	165	<4	<10	<10	<1	"
A 161749	30	18	85	<4	<10	<10	<1	"
A 161750	10	24	240	4	20	<10	<1	"
A 161751	10	20	55	<4	<10	<10	<1	"
A 161753	4	14	120	10	20	<10	<1	"
A 161756	12	1300	600	4	15	<10	<1	"
A 161759	48	175	1000	6	10	<10	<1	"
A 161762	105	<4	<50	<4	10	<10	<1	KHW
A 161763	10	8	12	<4	<10	<10	<1	"
A 161764	22	10	16	<4	<10	<10	<1	"
A 161765	95	14	100	<4	<10	20	<1	"
A 161766A	10	6	12	16	55	30	<1	
A 161768	44	8	50	4	10	20	<1	KHW
A 161769	50	8	150	<4	<10	20	<1	"
A 161770	48	16	105	<4	<10	10	<1	"
A 161773	230	8	800	<4	20	<10	<1	"
A 161774	210	<4	700	4	<10	<10	<1	"
A 161777	125	<4	450	4	<10	<10	<1	"
A 161780	1300	<4	<50	8	40	<10	<1	"
A 161783	36	<4	250	6	<10	<10	<1	AMSUE

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be		
A 161786	8	4	16	<4	10	20	<1	RM SEAR	1
A 161787	410	<4	450	6	<10	10	<1	"	1
A 161790	320	80	1200	<4	45	<10	<1	MZA	4
A 161791	65	390	12	<4	10	10	<1	"	4
A 161792	740	330	5600	4	130	10	<1	"	4
A 161793	185	510	1700	<4	25	10	<1	"	4
A 161794	1.39%	2950	1.65%	90	90	<10	<1	"	4
A 161795	55	130	80	<4	10	10	<1	"	4
A 161798	135	1550	1950	<4	15	10	<1	"	4
A 161799	990	3750	1.08%	10	25	10	<1	"	4
A 118602	175	85	2800	<4	10	10	<1	"	6
A 118605	80	70	115	4	<10	10	<1	"	6
A 118606	2350	1200	7200	18	230	<10	<1	"	6
A 118607	175	450	990	<4	10	10	<1	"	6
A 118608	55	290	400	<4	10	<10	<1	"	6
A 118609A	4	<4	85	30	<10	20	<1		
A 118610	85	500	180	4	15	<10	<1	MZA	6
A 118611	1520	940	1000	6	25	<10	<1	"	6
A 118612	1350	2700	700	12	10	<10	<1	"	6
A 118613	155	150	3050	<4	40	<10	<1	"	6
A 118616	860	44	1450	4	<10	<10	<1	"	6
A 118619	300	145	2.05%	6	30	<10	<1	"	6
A 118622	200	2150	1.97%	<4	105	<10	<1	"	6
A 118625	60	4150	9900	<4	30	10	<1	"	6
A 118628	8	3600	400	<4	<10	10	<1	"	5

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be		
A 118631	16	130	820	<4	<10	10	<1	MBM	5
A 118634	32	28	60	<4	<10	10	<1	"	5
A 118635	36	44	100	<4	<10	10	<1	"	5
A 118636	80	95	670	<4	15	<10	<1	"	5
A 118637	2.80%	1350	3.50%	190	<10	<10	<1	"	5
A 118638	470	155	510	6	10	20	<1	"	5
A 118640	430	30	510	6	10	70	<1	"	5
A 118643	60	30	240	<4	<10	30	<1	"	5
A 118644A	100	24	65	6	15	<10	<1		
A 118645	22	6	190	<4	<10	20	<1	KHE	1
A 118646	230	<4	1300	4	<10	30	<1	"	1
A 118649	60	4	150	<4	<10	10	<1	"	1
A 118650	40	<4	370	<4	<10	40	<1	"	1
A 118652	12	<4	1050	<4	<10	<10	<1	"	1
A 118655	42	<4	7400	<4	<10	<10	<1	"	1
A 118658	1800	16	50	14	<10	40	<1	"	1
A 118659	2700	<4	200	18	<10	60	<1	"	1
A 118660	28	<4	80	6	<10	30	<1	"	1
A 118663	115	<4	100	4	<10	10	<1	"	1
A 118666	105	<4	<50	<4	<10	20	<1	KHE	2
A 118669	90	28	1.80%	4	<10	10	<1	"	2
A 118672	70	<4	2850	<4	<10	10	<1	"	2
A 118675	55	55	300	10	<10	10	<1	KHE	6
A 118676	40	4	70	<4	20	10	<1	"	6
A 118677	8	4	60	<4	10	20	<1	"	6

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be		
A 118678	14	6	9	<4	<10	10	<1	KHE	6
A 118679	14	<4	42	<4	<10	10	<1	"	6
A 118682	40	<4	670	6	<10	<10	<1	"	6
A 118685	22	6	200	<4	<10	10	<1	KHE	11
A 118687A	4	130	<2	<4	10	10	<1		
A 118688	1.15%	50	500	80	<10	<10	<1	KHE	11
A 118691	44	<4	42	4	<10	<10	<1	KH	3
A 118694	34	4	80	<4	<10	20	<1	"	3
A 118697	1550	<4	300	10	35	40	<1	"	3
A 118700	14	8	26	<4	<10	20	<1	KHE	3
A 118576	155	12	<50	<4	<10	<10	<1	"	4
A 118577	26	6	18	<4	<10	20	<1	"	4
A 118578	65	36	18	<4	<10	10	<1	"	4
A 118581	260	12	36	<4	<10	<10	<1	"	4
A 118584	<4	<4	2	<4	<10	40	<1	"	4
A 118587	<4	12	24	<4	<10	30	<1	"	4
A 118589	90	4	650	<4	<10	10	<1	KH	6
A 118590	500	<4	1350	6	<10	10	<1	"	6
A 118592	60	10	95	<4	<10	20	<1	"	6
A 118593	530	<4	300	<4	40	20	<1	"	6
A 118594	85	20	60	<4	15	<10	<1	"	6
A 118595	115	22	70	<4	<10	<10	<1	"	6
A 118598	70	<4	450	<4	<10	<10	<1	"	6
A 118600	70	22	930	12	<10	50	<1	KHE	5
A 118701	30	4	780	<4	<10	<10	<1	"	5

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be	
A 118704	4	<4	90	<4	<10	<10	<1	KHE 5
A 118705A	<4	60	2	<4	<10	<10	<1	
A 118707	10	<4	4	<4	<10	<10	<1	KHW 5
A 118710	145	<4	240	<4	10	<10	<1	" 5
A 118713	280	4	150	6	<10	<10	<1	" 5
A 118714	55	10	85	<4	15	<10	<1	" 5
A 118717	18	<4	55	<4	<10	<10	<1	" 5
A 118720	170	<4	<50	<4	<10	<10	<1	KH 4
A 118721	510	<4	700	8	<10	<10	<1	" 4
A 118724	220	14	150	<4	<10	<10	<1	KHW 1/2
A 118727	510	36	<50	<4	20	<10	<1	" 1/2
A 118728	34	<4	16	<4	<10	10	<1	" 1/2
A 118729	430	<4	800	4	<10	<10	<1	" 1/2
A 118732	210	38	350	<4	<10	<10	<1	" 1/2
A 118735	44	6	190	<4	<10	<10	<1	" 1/2
A 118736	<4	6	36	<4	<10	<10	<1	" 1/2
A 118737	26	<4	115	6	15	<10	<1	" 1/2
A 118740	4	4	12	<4	<10	<10	<1	" 1/2
A 118743	115	10	195	16	<10	<10	<1	
A 118746	80	6	50	<4	<10	<10	<1	
A 118748A	<4	510	10	<4	15	<10	<1	
A 118749	105	4	160	4	<10	<10	<1	
A 118750	65	<4	40	<4	10	<10	<1	
A 118751	40	8	120	<4	<10	<10	<1	
A 118754	65	<4	65	<4	<10	<10	<1	

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 118757	46	12	115	<4	15	<10	<1
A 118760	600	<4	1000	10	10	<10	<1
A 118761	510	<4	500	6	<10	<10	<1
A 118762	190	<4	2950	<4	20	<10	<1
A 118763	125	<4	900	<4	<10	<10	<1
A 118766	90	<4	100	<4	<10	<10	<1
A 118769	105	8	65	4	<10	<10	<1
A 118772	14	4	42	<4	10	<10	<1
A 118775	26	<4	330	6	25	<10	<1
A 118778	48	<4	<50	6	<10	<10	<1
A 118914	30	20	95	4	<10	40	<1
A 118917	10	<4	<50	<4	<10	<10	<1
A 118919A	14	<4	9	190	45	20	<1
A 118920	210	<4	<50	<4	<10	<10	<1
A 118923	7500	<4	2500	50	35	<10	<1
A 118926	190	<4	210	<4	25	<10	<1
A 118929	165	70	770	6	<10	<10	<1
A 118930	100	10	480	<4	<10	<10	<1
A 118933	9950	8	<50	60	15	<10	<1
A 118936	44	22	105	4	<10	<10	<1
A 118939	3.10%	25	800	185	<10	<10	<1
A 118942	3.40%	40	1000	210	40	<10	<1
A 118943	1.76%	10	1000	115	10	<10	<1
A 118946	1350	10	<100	20	<10	<10	<1
A 118949	140	10	<50	70	20	<10	<1

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 118952	100	18	90	<4	<10	<10	<1
A 118953	70	4	80	<4	<10	<10	<1
A 118956	270	8	<50	<4	<10	<10	<1
A 118957	105	12	95	<4	15	<10	<1
A 118958	2.60%	4	1000	185	<10	<10	<1
A 118961	3.80%	20	300	240	<10	<10	<1
A 118962	5050	14	450	36	<10	<10	<1
A 118965	1800	46	700	16	<10	<10	<1
A 118966	130	10	115	<4	20	<10	<1
A 118967	6500	30	1000	55	<10	<10	<1
A 118968	145	8	85	<4	<10	<10	<1
A 118969	125	28	260	<4	15	<10	<1
A 118970	380	10	1100	<4	10	<10	<1
A 118971A	34	4	48	18	10	<10	<1
A 118973	230	32	5700	4	<10	<10	<1
A 118976	1050	4	780	8	30	<10	<1
A 118979	140	30	300	<4	30	<10	<1
A 118982	75	4	125	4	<10	<10	<1
A 118985	520	<4	450	10	<10	40	<1
A 118987	190	16	34	4	10	<10	<1
A 118988	60	8	350	<4	30	<10	<1
A 118991	200	<4	420	6	<10	<10	<1
A 118992	2700	<4	200	20	<10	<10	<1
A 118995	115	10	1050	6	10	<10	<1
A 118998	260	18	400	<4	10	<10	<1

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 118999	65	14	230	<4	<10	10	<1
A 119000	210	<4	<50	<4	<10	<10	<1
A 119003	920	14	1000	12	<10	<10	<1
A 119006	570	<4	400	4	<10	<10	<1
A 119007	195	20	350	4	20	<10	<1
A 119010	1700	8	3100	14	15	<10	<1
A 119013	160	<4	550	<4	<10	<10	<1
A 119016	200	4	500	<4	<10	<10	<1
A 119017	16	<4	60	<4	<10	<10	<1
A 119019	260	<4	600	8	<10	<10	<1
A 119020	4	4	12	16	40	20	<1
A 119021	48	20	130	<4	<10	<10	<1
A 119022	125	34	200	<4	15	<10	<1
A 119023	100	30	2400	4	<10	<10	<1
A 119026	40	16	180	<4	<10	<10	<1
A 119029	95	8	170	<4	25	<10	<1
A 119031	26	18	38	<4	10	<10	<1
A 119032	210	12	780	4	20	<10	<1
A 119033	12	18	18	<4	<10	<10	<1
A 119034	510	18	5750	6	<10	<10	<1
A 119035	22	26	20	<4	<10	<10	<1
A 119036	520	<4	3700	4	<10	<10	<1
A 119039	320	12	850	12	<10	<10	<1
A 119043	155	4	150	4	10	40	<1
A 119046	230	16	185	<4	<10	<10	<1

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Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 119047	1700	32	900	12	10	<10	<1
A 119048	1050	50	450	8	<10	<10	<1
A 119049	50	16	145	<4	<10	<10	<1
A 119052	100	22	250	4	<10	<10	<1
A 119053	120	14	220	4	15	<10	<1
A 119056	7500	20	<50	46	<10	<10	<1
A 119059	1500	14	400	12	<10	<10	<1
A 119060	<4	<4	80	26	35	10	<1
A 119063	280	80	<50	<4	<10	<10	<1
A 119066	16	10	20	<4	<10	<10	<1
A 119067	75	8	95	<4	<10	10	<1
A 119068	75	32	105	<4	10	<10	<1
A 119071	8750	12	1000	75	<10	<10	<1
A 119074	6750	70	2500	65	<10	<10	<1
A 119075	150	10	70	<4	<10	<10	<1
A 119076	220	<4	1100	<4	<10	<10	<1
A 119079	100	18	460	4	15	<10	<1
A 119083	32	6	250	4	<10	40	<1
A 119086	430	8	44	6	15	<10	<1
A 119087	34	6	36	4	<10	<10	<1
A 119088	4850	16	350	32	<10	<10	<1
A 119092	55	16	28	<4	<10	10	<1
A 119095	42	16	60	<4	<10	10	<1
A 119096	100	22	500	<4	<10	10	<1
A 119099	410	10	150	4	<10	<10	<1

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Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 119100	12	20	12	6	<10	<10	<1
A 119103	210	18	50	<4	<10	10	<1
A 119106	4700	20	4600	26	<10	10	<1
A 119109	4050	20	250	30	<10	10	<1
A 119113	165	<4	105	6	<10	10	<1
A 119116	190	44	700	4	<10	20	<1
A 119117	65	22	95	<4	<10	10	<1
A 119118	100	6	320	<4	20	20	<1
A 119119	95	14	130	<4	<10	<10	<1
A 119120	90	12	155	<4	<10	<10	<1
A 119122	250	12	110	<4	10	<10	<1
A 119123	80	10	145	<4	<10	10	<1
A 119126	28	14	105	<4	20	10	<1
A 119127	38	16	80	<4	10	10	<1
A 119128	260	14	<50	<4	20	10	<1
A 119131	42	12	24	<4	<10	20	<1
A 119134	60	10	160	<4	<10	10	<1
A 119135	630	40	1500	<4	<10	10	<1
A 119136	210	36	250	<4	<10	10	<1
A 119139	42	20	90	4	25	10	<1
A 119142	38	20	230	<4	<10	10	<1
A 119145	20	32	60	<4	<10	10	<1
A 119148	34	26	240	<4	<10	<10	<1
A 119150	6	140	<2	4	<10	I.S.	I.S.
A 119151	12	12	30	<4	<10	<10	<1

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 119152	16	<4	28	<4	<10	<10	<1
A 119154	195	6	165	4	<10	<10	<1
A 119155	1200	<4	610	8	<10	<10	<1
A 119158	16	8	32	<4	10	<10	<1
A 119162	10	<4	36	<4	15	<10	<1
A 119165	180	50	<50	<4	<10	<10	<1
A 119167	150	10	50	<4	<10	<10	<1
A 119168	80	44	50	<4	<10	<10	<1
A 119169	95	10	100	<4	<10	<10	<1
A 119171	720	60	1000	6	<10	<10	<1
A 119172	130	20	<50	4	15	<10	<1
A 119175	390	70	800	8	<10	<10	<1
A 119177	120	22	150	4	<10	<10	<1
A 119179	250	6	970	4	<10	<10	<1
A 119182	610	<4	2150	6	<10	<10	<1
A 119185	36	16	160	<4	<10	<10	<1
A 119188	50	10	150	<4	15	<10	<1
A 119190	<4	75	<2	6	<10	<10	<1
A 119192	330	32	800	6	<10	<10	<1
A 119193	165	46	400	<4	<10	<10	<1
A 119196	55	28	95	<4	<10	<10	<1
A 119197	210	44	500	32	<10	<10	<1
A 119198	85	32	<50	<4	20	<10	<1
A 119201	710	<4	<50	4	15	<10	<1
A 119204	2700	<4	<100	28	25	<10	<1

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 119205	1050	<4	<50	12	<10	30	<1
A 119208	300	4	790	6	<10	<10	<1
A 119212	30	14	80	<4	<10	20	<1
A 119215	24	6	50	<4	<10	<10	<1
A 119218	860	<4	100	10	45	<10	<1
A 119220	10	<4	12	<4	<10	90	<1
A 119222	20	<4	46	<4	<10	<10	<1
A 119223	28	10	55	6	<10	10	<1
A 119226	18	14	24	<4	<10	<10	<1
A 119227	24	12	55	<4	<10	<10	<1
A 119231	620	26	1400	6	<10	<10	<1
A 119232	1300	18	<100	16	50	<10	<1
A 119234	46	16	14	<4	<10	<10	<1
A 119235	130	<4	<50	<4	<10	20	<1
A 119238	150	4	340	<4	15	<10	<1
A 119239	175	24	70	<4	<10	<10	<1
A 119240	4	510	<2	4	<10	<10	<1
A 119241	300	10	120	<4	10	10	<1
A 119244	8	<4	16	<4	<10	<10	<1
A 119245	8	<4	2	<4	<10	<10	<1
A 119246	16	<4	110	<4	<10	<10	<1
A 119249	3550	<4	8	20	40	<10	<1
A 119251	1950	8	50	10	<10	<10	<1
A 119254	1.03%	4	<50	60	20	<10	<1
A 119255	200	10	85	<4	<10	20	<1

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 119257	360	<4	230	4	<10	10	<1
A 119261	1050	<4	150	12	35	10	<1
A 119262	260	<4	<50	<4	25	<10	<1
A 119263	90	<4	100	4	<10	<10	<1
A 119264	65	6	130	4	<10	70	<1
A 119267	55	6	90	<4	<10	10	<1
A 119268	48	8	60	<4	<10	10	<1
A 119269	55	4	18	<4	10	40	<1
A 119271	135	10	100	<4	<10	<10	<1
A 119275	280	<4	<50	<4	<10	10	<1
A 119278	140	165	<50	<4	<10	20	<1
A 119280	16	8	12	190	50	<10	<1
A 119282	1.60%	<4	100	100	20	<10	<1
A 119285	8350	<4	<50	46	35	<10	<1
A 119287	1550	16	65	10	<10	<10	<1
A 119288	350	24	70	4	10	<10	<1
A 119289	2.65%	<4	2250	155	<10	<10	<1
A 119293	2700	<4	500	18	105	<10	<1
A 119296	150	6	16	4	20	<10	<1
A 119299	210	34	<50	<4	<10	<10	<1
A 119303	6950	8	450	44	<10	<10	<1
A 119305	2700	16	2800	20	40	<10	<1
A 119308	380	6	400	8	20	<10	<1
A 119309	46	16	125	<4	<10	<10	<1
A 119313	16	4	<2	<4	10	<10	<1

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 119316	115	10	350	<4	35	<10	<1
A 119319	20	6	135	<4	15	<10	<1
A 119323	140	<4	60	<4	15	20	<1
A 119325	12	8	32	<4	<10	70	<1
A 119326	430	46	350	4	45	<10	<1
A 119327	80	48	60	<4	<10	50	<1
A 119328	7650	700	2.20%	48	45	<10	<1
A 119329	155	6	100	4	20	<10	<1
A 119330	50	6	120	16	<10	20	<1
A 119331	16	860	340	<4	<10	10	<1
A 119332	38	5.55%	250	<4	110	20	<1
A 119333	10	5100	170	<4	<10	<10	<1
A 119334	860	95	2150	8	<10	<10	<1
A 119335	32	28	60	<4	<10	<10	<1
A 119336	310	4	2200	<4	35	<10	<1
A 119337	<4	1.42%	20	4	20	<10	<1
A 119338	12	1500	180	<4	<10	<10	<1
A 119339	10	560	260	<4	10	50	<1
A 119340	4	380	9100	<4	95	<10	<1
A 119341	14	800	3.65%	6	10	<10	<1
A 119342	30	600	2350	<4	30	<10	<1
A 119343	6	6350	260	6	<10	<10	<1
A 119344	70	1050	2450	<4	60	30	<1
A 119345	130	350	2400	<4	25	<10	<1
A 119346	<4	90	14	<4	<10	10	<1

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 119347	8	800	36	<4	15	<10	<1
A 119348	14	230	48	<4	<10	<10	<1
A 119349	6	10	12	16	60	<10	<1
A 119350	6	4	2	<4	30	<10	<1
A 119351	4	4	12	<4	10	<10	<1
A 119352	6	<4	4	4	10	<10	<1
A 119353	18	4	12	<4	30	20	<1
A 119354	22	12	60	6	50	<10	<1
A 119355	6	135	<2	4	40	<10	<1
A 119356	55	10	260	4	20	<10	<1
A 119357	30	48	110	<4	40	<10	<1
A 119358	240	210	1.22%	8	20	<10	<1
A 119359	32	150	36	12	25	<10	<1
A 119360	60	430	24	8	30	<10	<1
A 119361	85	2700	210	8	35	<10	<1
A 119362	420	155	125	<4	15	<10	<1
A 119363	170	120	730	<4	10	<10	<1
A 119364	740	220	2300	6	20	<10	<1
A 119365	1550	200	550	12	40	<10	<1
A 119366	12	260	760	6	30	<10	<1
A 119367	2350	2250	10.0%	24	60	10	<1
A 119368	30	800	770	6	45	10	<1
A 119369	16	42	175	<4	30	10	<1
A 119370	8	10	34	<4	<10	10	<1
A 119371	10	<4	105	26	<10	<10	<1

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 119372	30	240	75	12	45	10	<1
A 119373	240	115	135	8	15	10	<1
A 119374	2000	2800	5300	16	70	20	<1
A 119375	90	55	60	10	30	10	<1
A 119376	50	75	95	16	40	20	<1
A 119377	65	270	155	4	25	10	<1
A 119378	65	75	30	8	25	10	<1
A 119379	85	220	560	12	40	<10	<1
A 119380	1600	1000	1.88%	22	50	60	<1
A 119381	65	260	2050	8	45	20	<1
A 119382	210	280	460	16	60	<10	<1
A 119383	28	6	24	4	35	60	<1
A 119384	32	14	10	6	20	60	<1
A 119385	30	<4	20	8	25	20	<1
A 119386	24	<4	100	18	35	10	<1
A 119387	<4	<4	9	<4	10	10	<1
A 119388	8	<4	7	4	15	<10	<1
A 119389	<4	<4	6	<4	<10	<10	<1
A 119390	6	<4	44	<4	10	<10	<1
A 119391	<4	24	2	6	55	<10	<1
A 119392	8	<4	10	<4	10	30	<1
A 119393	6	<4	8	6	25	20	<1
A 119394	6	4	46	<4	<10	80	<1
A 119395	6	<4	5	<4	<10	<10	<1
A 119396	4	<4	<2	<4	10	<10	<1

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Results in ppm

SAMPLE	Sb	Sn	As	Mo	W	Li	Be
A 119397	4	<4	<2	4	10	<10	<1
A 119398	12	4	9	4	15	<10	<1
A 119399	24	26	34	4	30	20	<1
A 119400	105	55	150	<4	50	<10	<1
A 119501	360	110	500	8	<10	<10	<1
A 119502	60	105	480	6	35	<10	<1
A 119503	55	55	820	6	15	<10	<1
A 119504	22	26	60	<4	<10	20	<1
A 119505	LNR	LNR	LNR	LNR	LNR	LNR	LNR
A 119506	28	10	38	4	<10	10	<1
A 119507	36	<4	75	12	20	20	<1
A 119508	30	4	60	14	15	<10	<1
A 119509	490	<4	280	18	15	50	<1
A 119510	28	<4	12	<4	15	30	<1
A 119511	14	8	12	<4	10	20	<1
A 119512	6	65	<2	20	55	20	<1

Method of Analysis : Sb Sn As Mo W : XRF1/2
Li Be : AAS6

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 161702A	85	16	36	14	1	0.05	0.15
A 161703	26	20	330	<4	<1	<0.05	0.02
A 161706	350	720	4200	<4	2	<0.05	0.02
A 161707	700	130	1100	<4	1	<0.05	0.04
A 161708	150	50	390	<4	<1	<0.05	0.05
A 161711	18	34	250	<4	1	<0.05	0.02
A 161712	32	400	4000	<4	2	<0.05	0.01
A 161713	20	90	430	<4	1	<0.05	0.01
A 161714	22	60	100	<4	1	<0.05	0.01
A 161717	18	26	2200	<4	<1	<0.05	0.01
A 161720	180	55	310	<4	1	<0.05	0.05
A 161723	230	150	75	4	1	<0.05	0.04
A 161724	340	38	65	10	<1	<0.05	0.14
A 161725	8	18	60	<4	<1	<0.05	0.02
A 161726	1800	38	120	290	1	<0.05	0.11
A 161729	26	660	1800	<4	1	<0.05	0.02
A 161731	55	9900	3400	<4	68	<0.05	0.01
A 161732	48	15.0%	800	<4	700	<0.05	0.01
A 161733	6	120	44	<4	2	<0.05	0.01
A 161734	12	2600	1800	<4	2	<0.05	0.01
A 161735	4	42	1300	<4	1	<0.05	0.01
A 161736	850	2100	8.40%	<4	45	<0.05	0.01
A 161737A	38	26	60	<4	<1	<0.05	0.03
A 161738	65	4950	1700	6	8	<0.05	0.05
A 161740	860	820	2600	<4	26	<0.05	0.03

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 161741	600	2000	1600	<4	16	<0.05	0.01
A 161742	510	4600	4100	<4	4	<0.05	0.01
A 161743	270	2600	4600	<4	24	<0.05	0.01
A 161744	40	350	220	<4	2	<0.05	0.01
A 161745	12	36	85	<4	<1	<0.05	0.06
A 161747	180	6400	12.0%	<4	23	<0.05	0.02
A 161749	30	120	310	<4	1	<0.05	0.15
A 161750	10	270	1200	<4	<1	<0.05	0.04
A 161751	12	100	460	<4	<1	<0.05	0.14
A 161753	18	140	330	<4	<1	<0.05	0.08
A 161756	28	200	1300	<4	2	<0.05	0.08
A 161759	26	940	80	18	8	<0.05	0.07
A 161762	55	7.00%	8500	<4	115	<0.05	0.02
A 161763	10	250	310	<4	2	<0.05	0.06
A 161764	8	190	330	<4	1	<0.05	0.05
A 161765	80	3.20%	1.40%	<4	75	<0.05	0.04
A 161766A	110	200	180	30	1	<0.05	0.09
A 161768	185	3900	1700	<4	10	<0.05	0.05
A 161769	44	2.70%	2600	<4	48	<0.05	0.04
A 161770	46	7400	1800	<4	15	<0.05	0.05
A 161773	800	9.10%	3.70%	<4	235	<0.05	<0.01
A 161774	250	2.00%	4.80%	<4	125	<0.05	<0.01
A 161777	100	3.90%	1.90%	18	70	<0.05	0.01
A 161780	1400	23.6%	640	<4	600	<0.05	0.01
A 161783	28	6.40%	7200	<4	18	<0.05	<0.01

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 161786	22	670	160	<4	2	<0.05	0.06
A 161787	180	8.70%	7.60%	<4	60	<0.05	0.04
A 161790	1300	3000	850	90	40	<0.05	0.06
A 161791	110	1050	1000	14	7	<0.05	0.13
A 161792	1600	2600	4200	46	32	<0.05	0.10
A 161793	150	2000	380	12	19	<0.05	0.14
A 161794	940	11.0%	1300	100	300	<0.05	0.04
A 161795	160	7800	1.60%	<4	33	<0.05	0.12
A 161798	100	450	85	20	9	<0.05	0.16
A 161799	1250	1450	170	85	155	<0.05	0.10
A 118602	80	1050	180	46	37	<0.05	0.04
A 118605	46	630	520	6	7	<0.05	0.16
A 118606	1600	9900	190	120	490	<0.05	0.05
A 118607	240	1000	140	10	10	<0.05	0.12
A 118608	110	490	320	<4	5	<0.05	0.12
A 118609A	20	38	55	<4	1	<0.05	0.04
A 118610	100	270	50	<4	6	<0.05	0.06
A 118611	130	9000	2700	38	26	<0.05	0.05
A 118612	530	3700	240	18	9	<0.05	0.03
A 118613	55	1100	240	16	9	<0.05	0.09
A 118616	2100	190	3900	4	18	<0.05	0.03
A 118619	100	540	360	<4	8	<0.05	0.07
A 118622	85	540	240	32	8	<0.05	0.07
A 118625	46	190	65	32	9	<0.05	0.06
A 118628	50	550	2.60%	<4	3	<0.05	0.02

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 118631	28	2300	1200	4	9	<0.05	0.08
A 118634	32	150	55	<4	2	<0.05	0.08
A 118635	55	890	570	4	4	<0.05	0.07
A 118636	50	400	140	4	5	<0.05	0.10
A 118637	3000	7.90%	3500	100	135	<0.05	0.02
A 118638	140	4000	280	46	24	<0.05	0.13
A 118640	90	1600	1700	<4	3	<0.05	0.05
A 118643	75	5600	1.80%	<4	14	<0.05	0.05
A 118644A	12	120	34	<4	1	<0.05	0.01
A 118645	240	300	2.00%	<4	<1	<0.05	0.10
A 118646	240	3.90%	12.0%	<4	9	<0.05	0.04
A 118649	110	1.35%	3.90%	<4	3	<0.05	0.04
A 118650	100	6500	8200	<4	1	<0.05	0.05
A 118652	20	2300	5600	<4	2	<0.05	0.01
A 118655	24	3.40%	9600	<4	25	<0.05	0.02
A 118658	850	1.50%	5500	<4	5	<0.05	0.16
A 118659	55	6.50%	1.30%	<4	23	<0.05	0.21
A 118660	24	1000	2200	<4	1	<0.05	0.08
A 118663	290	3.40%	3.90%	<4	30	<0.05	0.04
A 118666	290	6.30%	9.70%	<4	18	<0.05	0.03
A 118669	220	1.20%	6.20%	<4	11	<0.05	0.04
A 118672	1.20%	750	1200	<4	24	<0.05	0.05
A 118675	540	5900	8.90%	<4	16	<0.05	0.03
A 118676	110	2800	8000	<4	5	<0.05	0.07
A 118677	20	85	320	<4	<1	<0.05	0.19

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JOB CON840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 118678	42	510	680	<4	1	<0.05	0.02
A 118679	36	3000	5000	<4	4	<0.05	0.02
A 118682	26	550	1200	<4	3	<0.05	0.03
A 118685	22	1.05%	2.70%	<4	4	<0.05	0.02
A 118687A	14	22	55	<4	<1	<0.05	0.02
A 118688	200	12.7%	14.0%	<4	36	<0.05	0.02
A 118691	390	1500	5200	<4	14	<0.05	0.02
A 118694	16	4200	5100	<4	22	<0.05	0.02
A 118697	1050	24.8%	1.30%	<4	220	<0.05	0.01
A 118700	20	780	250	<4	1	<0.05	0.05
A 118576	450	2.70%	2400	<4	81	<0.05	0.01
A 118577	32	670	1400	<4	3	<0.05	0.01
A 118578	95	1500	2.20%	<4	22	<0.05	0.02
A 118581	340	1900	19.5%	<4	140	<0.05	0.03
A 118584	18	110	560	<4	<1	<0.05	0.02
A 118587	55	2300	560	<4	2	<0.05	0.03
A 118589	55	4700	1.30%	<4	3	<0.05	0.01
A 118590	50	4700	1.80%	<4	2	<0.05	0.02
A 118592	42	3000	1.50%	<4	3	<0.05	0.04
A 118593	85	20.6%	3.50%	<4	490	<0.05	0.03
A 118594	48	7000	9000	<4	18	<0.05	0.11
A 118595	110	4300	2.30%	<4	13	<0.05	0.08
A 118598	100	2.20%	2.20%	<4	17	<0.05	0.06
A 118600	720	5600	5800	<4	25	<0.05	0.19
A 118701	180	3000	7200	<4	9	<0.05	0.02

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 118704	10	750	210	<4	2	<0.05	0.02
A 118705A	12	65	110	<4	<1	<0.05	0.02
A 118707	20	330	820	<4	2	<0.05	0.04
A 118710	230	1400	600	<4	3	<0.05	0.02
A 118713	44	1.30%	9000	<4	28	<0.05	0.01
A 118714	22	5000	2000	<4	21	<0.05	0.01
A 118717	2900	1000	2.70%	<4	2	<0.05	0.01
A 118720	85	2.50%	1700	<4	65	<0.05	0.09
A 118721	90	9.40%	4.00%	<4	175	<0.05	0.05
A 118724	85	5.00%	2.50%	<4	125	<0.05	0.03
A 118727	920	3.20%	6.00%	<4	69	<0.05	0.03
A 118728	20	720	1300	<4	1	<0.05	0.06
A 118729	290	17.1%	5.70%	<4	410	<0.05	0.02
A 118732	300	9.90%	7.40%	<4	230	<0.05	0.03
A 118735	36	9800	950	<4	30	<0.05	0.02
A 118736	10	270	330	<4	1	<0.05	0.02
A 118737	34	6900	2800	<4	7	<0.05	0.02
A 118740	16	1500	550	<4	3	<0.05	0.02
A 118743	500	1800	9700	<4	2	<0.05	0.05
A 118746	75	1.10%	5.20%	<4	30	<0.05	0.02
A 118748A	12	120	310	<4	<1	<0.05	0.01
A 118749	180	1400	2200	<4	2	<0.05	0.04
A 118750	100	1400	1500	<4	2	<0.05	0.03
A 118751	50	6000	2.00%	<4	7	<0.05	0.02
A 118754	30	2600	5000	<4	5	<0.05	0.02

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 118757	16	450	2500	<4	1	<0.05	0.05
A 118760	130	2.10%	1.20%	<4	95	<0.05	0.01
A 118761	110	1.25%	3400	<4	60	<0.05	0.02
A 118762	44	6800	3200	<4	12	<0.05	0.02
A 118763	30	2800	4400	<4	10	<0.05	0.02
A 118766	95	6600	5200	<4	3	<0.05	0.04
A 118769	18	1150	6600	<4	<1	<0.05	0.03
A 118772	55	3900	1200	<4	1	<0.05	0.03
A 118775	22	930	1700	<4	<1	<0.05	0.02
A 118778	46	3.90%	180	<4	27	<0.05	0.02
A 118914	18	320	1900	<4	2	<0.05	0.04
A 118917	34	2.00%	640	<4	6	<0.05	0.02
A 118919A	75	44	46	10	<1	<0.05	0.11
A 118920	760	9.50%	5.20%	<4	85	<0.05	0.03
A 118923	3400	5.40%	1800	6	105	<0.05	0.04
A 118926	170	5400	6400	<4	19	<0.05	0.02
A 118929	100	1400	8.70%	<4	24	<0.05	0.06
A 118930	60	3800	2.70%	<4	27	<0.05	0.07
A 118933	80	4.20%	5200	<4	100	<0.05	0.05
A 118936	34	2600	4.80%	<4	11	<0.05	0.03
A 118939	180	7.10%	4.30%	<4	30	<0.05	0.06
A 118942	240	7.80%	2.90%	<4	65	<0.05	0.03
A 118943	360	11.6%	2.90%	<4	180	<0.05	0.05
A 118946	530	45.5%	9.80%	18	280	<0.05	0.02
A 118949	430	5.80%	4.30%	<4	28	<0.05	0.05

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 118952	90	5400	2.50%	<4	3	<0.05	0.06
A 118953	65	1300	1900	<4	<1	<0.05	0.06
A 118956	580	3.40%	21.0%	<4	80	<0.05	0.03
A 118957	70	980	1.65%	<4	4	<0.05	0.06
A 118958	340	15.7%	3.20%	<4	530	<0.05	0.02
A 118961	470	19.6%	5300	<4	630	<0.05	0.03
A 118962	200	4.90%	1.70%	<4	130	<0.05	0.02
A 118965	700	20.2%	4.10%	<4	500	<0.05	0.02
A 118966	16	3000	2100	<4	6	<0.05	0.05
A 118967	450	23.9%	1.25%	<4	740	<0.05	0.01
A 118968	80	2000	1900	<4	5	<0.05	0.05
A 118969	44	4600	5700	<4	15	<0.05	0.06
A 118970	220	5.00%	1.60%	<4	125	<0.05	0.03
A 118971A	40	130	60	<4	<1	<0.05	0.03
A 118973	170	1.10%	12.0%	<4	7	<0.05	0.05
A 118976	130	3500	2100	<4	6	<0.05	0.04
A 118979	140	1.85%	7.60%	<4	30	<0.05	0.04
A 118982	28	5500	1.30%	<4	8	<0.05	0.03
A 118985	220	3.50%	6.20%	<4	165	<0.05	0.02
A 118987	65	1500	710	<4	4	<0.05	0.05
A 118988	26	1800	160	<4	5	<0.05	0.04
A 118991	24	1050	180	<4	3	<0.05	0.05
A 118992	55	1.30%	1900	<4	20	<0.05	0.05
A 118995	18	1200	250	<4	4	<0.05	0.02
A 118998	340	4.70%	9.70%	<4	70	<0.05	0.05

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ANALYTICAL REPORT

JOB CCM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 118999	36	7100	3500	<4	16	<0.05	0.05
A 119000	140	3.80%	12.1%	<4	155	<0.05	0.06
A 119003	140	6.70%	5.20%	<4	135	<0.05	0.04
A 119006	55	3.00%	1.20%	<4	95	<0.05	0.05
A 119007	85	1.70%	2.60%	<4	21	<0.05	0.03
A 119010	42	3.00%	4.10%	<4	35	<0.05	0.04
A 119013	75	9600	5.90%	<4	14	<0.05	0.02
A 119016	180	2.15%	9.60%	<4	7	<0.05	0.01
A 119017	14	430	1600	<4	<1	<0.05	0.04
A 119019	170	2.60%	18.7%	<4	21	<0.05	0.02
A 119020	110	55	330	26	<1	<0.05	0.09
A 119021	150	1800	5.70%	<4	4	<0.05	0.05
A 119022	80	2.80%	7.00%	<4	50	<0.05	0.04
A 119023	50	7500	6500	<4	19	<0.05	0.04
A 119026	150	1800	7.80%	<4	13	<0.05	0.02
A 119029	65	2800	8100	<4	4	<0.05	0.05
A 119031	16	150	1300	<4	1	<0.05	0.06
A 119032	55	6100	3.60%	<4	8	<0.05	0.05
A 119033	14	160	3000	<4	1	<0.05	0.02
A 119034	90	2700	7.50%	<4	27	<0.05	0.03
A 119035	6	65	260	<4	<1	<0.05	0.07
A 119036	80	3.50%	10.1%	<4	85	<0.05	0.03
A 119039	110	6.00%	9.00%	<4	200	<0.05	0.04
A 119043	32	7300	7300	<4	20	<0.05	0.04
A 119046	50	8600	2.20%	<4	22	<0.05	0.06

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ANALYTICAL REPORT

JOB COM840023 C/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 119047	95	1.40%	6.50%	<4	38	<0.05	0.06
A 119048	280	12.9%	16.5%	<4	370	<0.05	0.02
A 119049	20	2000	2100	<4	8	<0.05	0.07
A 119052	65	9800	1.90%	<4	26	<0.05	0.04
A 119053	10	2200	780	<4	5	<0.05	0.06
A 119056	300	6.30%	8.60%	<4	80	<0.05	0.03
A 119059	26	1.90%	9700	<4	55	<0.05	0.05
A 119060	16	200	240	<4	2	<0.05	0.04
A 119063	320	9.20%	28.0%	<4	115	<0.05	0.03
A 119066	30	1500	7600	<4	4	<0.05	0.02
A 119067	48	370	1200	<4	4	<0.05	0.06
A 119068	95	2100	1.80%	<4	6	<0.05	0.06
A 119071	3000	10.4%	1.00%	<4	85	<0.05	0.07
A 119074	370	15.6%	9.60%	<4	510	<0.05	0.02
A 119075	30	5500	1.30%	<4	14	<0.05	0.09
A 119076	20	3800	1.20%	<4	19	<0.05	0.03
A 119079	36	7400	1.10%	<4	17	<0.05	0.06
A 119083	30	7800	1.50%	<4	5	<0.05	0.03
A 119086	26	5400	2.50%	<4	6	<0.05	0.04
A 119087	20	330	610	<4	1	<0.05	0.05
A 119088	65	2.60%	15.2%	4	20	<0.05	0.05
A 119092	65	1500	4.30%	<4	8	<0.05	0.03
A 119095	18	2200	6000	<4	5	<0.05	0.03
A 119096	65	1.50%	2.50%	<4	21	<0.05	0.04
A 119099	95	5.00%	7.60%	<4	150	<0.05	0.04

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ANALYTICAL REPORT

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Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 119100	10	44	70	<4	2	<0.05	0.01
A 119103	24	1.35%	1.60%	<4	35	<0.05	0.06
A 119106	120	8.00%	2.00%	<4	310	<0.05	0.05
A 119109	180	16.9%	1.90%	<4	550	<0.05	0.03
A 119113	30	380	2000	<4	2	<0.05	0.03
A 119116	310	3700	10.5%	<4	16	<0.05	0.05
A 119117	16	1900	3000	<4	4	<0.05	0.06
A 119118	60	4000	1.20%	<4	8	<0.05	0.06
A 119119	34	360	480	<4	2	<0.05	0.04
A 119120	14	220	2600	<4	1	<0.05	0.04
A 119122	14	1400	1900	<4	2	<0.05	0.04
A 119123	46	870	1.10%	<4	2	<0.05	0.03
A 119126	16	5000	590	<4	8	<0.05	0.05
A 119127	44	2900	2100	<4	5	<0.05	0.06
A 119128	250	6.20%	1.10%	<4	140	<0.05	0.05
A 119131	80	230	350	<4	5	<0.05	0.07
A 119134	46	4400	6800	<4	7	<0.05	0.05
A 119135	230	1.80%	7.80%	<4	44	<0.05	0.02
A 119136	180	1.20%	9.30%	<4	40	<0.05	0.04
A 119139	38	780	2400	<4	5	<0.05	0.06
A 119142	30	4500	8700	<4	9	<0.05	0.05
A 119145	75	1700	10.0%	<4	2	<0.05	0.06
A 119148	180	4600	1.50%	<4	6	<0.05	0.03
A 119150	18	42	85	<4	1	<0.05	0.02
A 119151	24	1900	1600	<4	3	<0.05	0.03

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 119152	22	780	1500	<4	3	<0.05	0.04
A 119154	48	6000	1500	<4	15	<0.05	0.08
A 119155	55	8300	1300	<4	18	<0.05	0.09
A 119158	36	2600	3000	<4	4	<0.05	0.06
A 119162	40	2900	1.60%	<4	4	<0.05	0.03
A 119165	130	5.20%	7.40%	<4	110	<0.05	0.05
A 119167	90	2.10%	5.70%	<4	41	<0.05	0.05
A 119168	75	1.20%	4.30%	<4	25	<0.05	0.09
A 119169	40	9900	3800	<4	17	<0.05	0.08
A 119171	360	29.0%	18.5%	<4	520	<0.05	0.08
A 119172	80	2.10%	3.80%	<4	37	<0.05	0.08
A 119175	140	11.6%	15.7%	<4	330	<0.05	0.01
A 119177	90	2.20%	8.20%	<4	32	<0.05	0.07
A 119179	28	7000	5.90%	<4	10	<0.05	0.05
A 119182	26	6200	6.50%	<4	10	<0.05	0.04
A 119185	42	1800	4.30%	<4	3	<0.05	0.05
A 119188	130	1.30%	5.60%	<4	25	<0.05	0.08
A 119190	14	48	140	<4	<1	<0.05	0.09
A 119192	260	7.30%	12.3%	<4	190	<0.05	0.04
A 119193	280	2.70%	9.40%	<4	60	<0.05	0.03
A 119196	80	9900	5700	<4	12	<0.05	0.05
A 119197	360	10.3%	8.60%	<4	120	<0.05	0.05
A 119198	95	2.50%	8300	<4	45	<0.05	0.05
A 119201	50	14.5%	1.50%	<4	360	<0.05	0.04
A 119204	510	21.0%	2.00%	<4	490	<0.05	0.05

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 119205	270	13.0%	2.30%	<4	460	<0.05	0.06
A 119208	65	3.00%	1200	<4	100	<0.05	0.07
A 119212	32	5600	1.50%	<4	5	<0.05	0.04
A 119215	44	1.30%	1.10%	<4	17	<0.05	0.02
A 119218	540	7.40%	6000	<4	80	<0.05	0.08
A 119220	130	300	2500	<4	<1	<0.05	0.11
A 119222	65	375	800	<4	<1	<0.05	0.06
A 119223	85	220	2000	<4	<1	<0.05	0.04
A 119226	65	380	780	<4	1	<0.05	0.03
A 119227	20	3200	840	<4	3	<0.05	0.01
A 119231	570	2.10%	12.0%	4	11	<0.05	0.03
A 119232	26	16.2%	6000	<4	50	<0.05	0.03
A 119234	20	3200	530	<4	12	<0.05	0.04
A 119235	12	2.40%	240	<4	95	<0.05	0.04
A 119238	28	4800	1600	<4	8	<0.05	0.01
A 119239	32	8900	4.50%	<4	18	<0.05	0.04
A 119240	8	70	200	<4	1	<0.05	0.03
A 119241	14	4400	1300	<4	14	<0.05	0.06
A 119244	10	560	730	<4	2	<0.05	0.06
A 119245	12	240	390	<4	1	<0.05	0.03
A 119246	10	4000	870	<4	4	<0.05	0.02
A 119249	42	1.10%	640	<4	17	<0.05	0.02
A 119251	65	4800	170	<4	8	<0.05	0.02
A 119254	75	2.40%	340	<4	18	<0.05	0.01
A 119255	130	1300	300	<4	3	<0.05	0.03

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 119257	100	9200	2800	<4	21	<0.05	0.03
A 119261	170	5.40%	4800	<4	165	<0.05	0.05
A 119262	80	2.30%	2100	<4	60	<0.05	0.02
A 119263	140	525	180	<4	4	<0.05	0.06
A 119264	42	2300	270	<4	5	<0.05	0.02
A 119267	110	195	3400	<4	3	<0.05	0.03
A 119268	65	670	475	<4	2	<0.05	0.03
A 119269	75	270	360	<4	2	<0.05	0.06
A 119271	120	1.50%	3700	<4	32	<0.05	0.05
A 119275	450	2.20%	9000	<4	55	<0.05	0.05
A 119278	280	2.00%	16.5%	<4	22	<0.05	0.06
A 119280	80	110	135	12	1	<0.05	0.12
A 119282	4200	6.30%	940	4	210	<0.05	0.05
A 119285	4000	4.80%	1000	6	210	<0.05	0.07
A 119287	16	4000	160	<4	3	<0.05	0.03
A 119288	28	1000	120	<4	4	<0.05	0.08
A 119289	930	7.10%	170	4	65	<0.05	0.03
A 119293	170	23.9%	2900	<4	620	<0.05	0.03
A 119296	26	1100	770	<4	2	<0.05	0.04
A 119299	110	5.40%	13.6%	<4	135	<0.05	0.03
A 119303	110	1.50%	4600	<4	7	<0.05	0.02
A 119305	180	6600	9100	<4	6	<0.05	0.02
A 119308	210	5.20%	810	20	65	<0.05	0.01
A 119309	6	400	380	<4	<1	<0.05	0.01
A 119313	16	80	60	<4	<1	<0.05	0.03

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ANALYTICAL REPORT

JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 119316	100	2.80%	8100	4	27	<0.05	0.02
A 119319	16	6100	125	4	9	<0.05	0.01
A 119323	1050	135	950	4	2	<0.05	0.04
A 119325	120	250	770	<4	<1	<0.05	0.05
A 119326	780	8.10%	6.50%	<4	290	<0.05	0.01
A 119327	10	460	1350	<4	1	<0.05	0.05
A 119328	3150	6100	360	30	1900	<0.05	0.03
A 119329	30	3.20%	730	4	145	<0.05	0.04
A 119330	32	55	120	<4	4	<0.05	0.03
A 119331	1300	165	290	30	<1	<0.05	0.08
A 119332	260	1300	145	12	5	<0.05	0.13
A 119333	930	50	70	12	<1	<0.05	0.28
A 119334	200	3.10%	3900	26	85	<0.05	0.02
A 119335	14	3950	310	<4	8	<0.05	0.02
A 119336	250	1.00%	7800	<4	7	<0.05	0.02
A 119337	900	90	100	26	2	<0.05	0.02
A 119338	1050	195	390	24	3	<0.05	0.04
A 119339	3150	45	930	<4	<1	<0.05	0.10
A 119340	9000	75	460	170	9	<0.05	0.03
A 119341	580	160	130	105	1	<0.05	0.04
A 119342	520	140	100	42	<1	<0.05	0.02
A 119343	30	110	24	<4	2	<0.05	0.02
A 119344	18	450	75	4	1	<0.05	0.01
A 119345	110	2100	320	20	9	<0.05	0.01
A 119346	34	50	70	<4	<1	<0.05	0.11

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JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 119347	170	910	1450	12	5	<0.05	0.16
A 119348	250	3600	6900	4	4	<0.05	0.03
A 119349	130	18	140	30	<1	<0.05	0.09
A 119350	26	18	55	<4	<1	<0.05	0.08
A 119351	22	38	65	<4	<1	<0.05	0.09
A 119352	24	28	46	<4	<1	<0.05	0.07
A 119353	26	40	75	<4	<1	<0.05	0.06
A 119354	42	120	295	<4	1	<0.05	0.05
A 119355	14	10	16	<4	<1	<0.05	0.02
A 119356	20	210	890	8	1	<0.05	0.02
A 119357	50	370	1000	10	5	<0.05	0.06
A 119358	420	3100	390	50	32	<0.05	0.04
A 119359	70	570	1450	6	4	<0.05	0.10
A 119360	55	470	740	4	3	<0.05	0.10
A 119361	34	780	60	14	5	<0.05	0.08
A 119362	44	2200	970	<4	7	<0.05	0.12
A 119363	32	710	90	6	7	<0.05	0.15
A 119364	55	2200	285	6	7	<0.05	0.12
A 119365	170	4100	260	<4	26	<0.05	0.18
A 119366	12	120	55	<4	<1	<0.05	0.18
A 119367	4500	2200	5200	350	145	<0.05	0.03
A 119368	65	270	245	16	4	<0.05	0.08
A 119369	60	410	620	<4	<1	<0.05	0.14
A 119370	14	140	170	<4	<1	<0.05	0.13
A 119371	14	22	60	<4	<1	<0.05	0.05

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396106

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ANALYTICAL REPORT

JOB CON840023 O/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 119372	28	630	2700	<4	2	<0.05	0.08
A 119373	65	5500	1250	<4	32	<0.05	0.10
A 119374	400	5.10%	2300	18	240	<0.05	0.10
A 119375	22	2400	1950	<4	6	<0.05	0.10
A 119376	44	4200	4000	<4	10	<0.05	0.09
A 119377	42	260	160	<4	3	<0.05	0.12
A 119378	40	60	55	4	<1	<0.05	0.09
A 119379	70	75	70	<4	11	<0.05	0.08
A 119380	700	2850	105	30	9	<0.05	0.06
A 119381	60	80	36	<4	10	<0.05	0.09
A 119382	220	140	80	<4	55	<0.05	0.04
A 119383	14	34	55	<4	<1	<0.05	0.09
A 119384	16	20	50	<4	<1	<0.05	0.07
A 119385	24	32	60	<4	<1	<0.05	0.04
A 119386	90	70	80	<4	<1	<0.05	0.10
A 119387	20	20	60	<4	<1	<0.05	0.05
A 119388	16	22	44	<4	<1	<0.05	0.05
A 119389	16	26	50	<4	<1	<0.05	0.03
A 119390	20	60	60	<4	<1	<0.05	0.03
A 119391	20	8	34	<4	<1	<0.05	0.01
A 119392	22	48	55	<4	<1	<0.05	0.03
A 119393	16	22	50	<4	<1	<0.05	0.05
A 119394	14	20	70	<4	<1	<0.05	0.04
A 119395	14	70	90	<4	<1	<0.05	0.05
A 119396	12	40	80	<4	<1	<0.05	0.04

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ANALYTICAL REPORT

JOB COM840023 C/N : 30723

Results in ppm

SAMPLE	Cu	Pb	Zn	Bi	Ag	Au	%F
A 119397	10	60	90	<4	<1	<0.05	0.03
A 119398	100	110	150	<4	<1	<0.05	0.04
A 119399	46	4700	3500	<4	5	<0.05	0.04
A 119400	110	1.10%	465	<4	35	<0.05	0.03
A 119501	490	3.40%	2.20%	8	135	<0.05	0.05
A 119502	60	760	1500	8	7	<0.05	0.09
A 119503	38	410	235	4	4	<0.05	0.05
A 119504	55	380	790	<4	2	<0.05	0.04
A 119505	LNR	LNR	LNR	LNR	LNR	LNR	LNR
A 119506	370	970	1950	<4	2	<0.05	0.07
A 119507	2200	80	75	4	1	<0.05	0.11
A 119508	1200	65	175	8	1	<0.05	0.09
A 119509	6900	190	130	34	28	<0.05	0.07
A 119510	870	42	55	<4	<1	<0.05	0.03
A 119511	55	32	55	<4	<1	<0.05	0.03
A 119512	4	12	20	<4	<1	<0.05	0.01

Method of Analysis : Cu Pb Zn Bi : AAS1/1A
Ag : AAS3
Au : AAS5A
F : SIE3

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JOB COM840023 O/N : 30723

Results in ppm

SAMPLE	Au	%F	%Li	Be
A 161601	<0.05	0.10	10	<1
A 161602	<0.05	0.09	10	<1
A 161603	<0.05	0.05	20	<1
A 161604	<0.05	0.05	10	<1
A 161605	<0.05	0.09	10	<1
A 161606	<0.05	0.02	<10	<1
A 161607	<0.05	0.01	<10	<1
A 161608	<0.05	0.03	<10	<1
A 161609	<0.05	0.03	<10	<1
A 161610	<0.05	0.09	<10	<1

Method of Analysis : Li Be : AAS6
F : SIE3
Au : AAS5A

APPENDIX VII

EL 15/76 DUNDAS - TRACE ELEMENT STUDY - SAMPLE DATA

DUNDAS, TASMANIA COMET F3-BH2 DRILL LOG PROJECT DATE 109

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396110

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
51.83		CL		4											
99.09		SL		2											FE
102.74		CG													
107.37		SL													
107.93		??												A119307	
108.23		??												A119308	GOSSANOUS
109.76		??													CAVITY
118.29		??												A119309	GOSSANOUS
119.21		??												A119311	SIDERITE
129.57		SE													

KOSMINSKY HILL WEST KHW DDH 5

KOSMINSKY HILL WEST

DUNDAS, TASMANIA KHW DDH 5 DRILL LOG PROJECT

1 / 110 DATE

COLLAR COORDINATES N ..... E ..... R.L. 335.4 AZIM. 51 DIP 60 LOGGED BY .....

396111

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
27.44		SH	Gh	4											
29.57		SH			0.2			5.0	5.0					A118706	
31.74		SH												A118707	
32.62		SH												A118708	
176.83		SH													
177.74		SH												A118709	
178.35		SE	Gs		4.0						9.9			A118710	
179.88		SE												A118711	
216.77		SE													
218.60		SE			0.5			5.0	5.0					A118712	DO
220.73		SE			0.2	9.5		0.5						A118713	DO
221.95		SE			0.5	4.0		5.0	1.0					A118714	DO
224.70		SE			0.1			5.0	5.0					A118715	
231.10		SE												[illegible]	
232.91		SS	Gc												
233.43		SS			0.1	9.9								A118716	
233.23		SS			2.5	6.0		2.0	2.0					A118717	
235.54		SS												A118718	
259.15		SS													

KOSMINSKY HILL WEST

DUNDAS, TASMANIA KHW-DDH 1 DRILL LOG PROJECT / DATE 11

COLLAR COORDINATES N ..... E ..... R.L. 371·3 ..... AZIM. 243°AMG ..... DIP ..... -55° ..... LOGGED BY .....

396112

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1·0:4·8		S,H	€c	4											
2·8:0·6		S,S		4											
4·0:2·4		S,H													BLACK
4·9:0·9		XS,H													
5·2:1·3		X													
6·6:7·7		MS													MS/S,T/S,H
7·1:6·4		S,H													D.O
7·1:9·5		S,T			20				9.9					A1617611	D.O
7·2:0·3		S,T			40	0.5		6.0	3.5					A16176 2	V.E.I.N
7·3:6·3		S,T												A16176 3	D.O/S.S
7·4:0·9		D.O			1.5	1.0		6.0	3.0					A16176 4	
7·5:9·1		D.O			1.0			9.5	0.5					A16176 5	
7·6:4·8		MS										D.O - P2		A16176 6	MS/S,T/S,H/D.O
8·5:3·6		MS										DO - P2			MS/S,T/S,H
9·2:0·7		MS										D.O - P3			D.O/MS
9·3:2·9		MS			0.5	9.9						D.O - P3		A16176 7	D.O/MS
9·4:2·1		S,T			0.1				9.9					A16176 8	D.O/S,T
9·5:1·2		S,T			0.2			9.9						A16176 9	D.O/S,T
9·6:3·4		S,T			0.1			9.9						A16177 0	D.O/S,T
9·8:4·8		D.O			0.4	5.0		5.0						A16177 1	
9·9:5·4		D.O			1.0			3.0	7.0					A16177 2	
10·0:6·1		D.O			5.0	2.0		8.0						A16177 3	
10·1:2·2		??			8.5	8.0		1.0	1.0					A16177 4	C.O
10·2:1·3		??												A16177 5	C.O

KOSMINSKY HILL DDH KH

KOSMINSKY HILL

DUNDAS, TASMANIA KH DDH 3 DRILL LOG PROJECT 3/ DATE 1/12

COLLAR COORDINATES N ..... E ..... R.L. 408.2 AZIM. 71° DIP -55 LOGGED BY .....

396113

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº	
6.40		SH	Ec	4											GOSSANOUS, BNO GOLE
7.62		DO		3										A118690	GOSSANOUS
8.84		??		3	9.0	0.5		9.5						A118691	GOSSAN
10.67		X??		2										A118692	GOSSANOUS
20.43		DO		2											
21.95		DO		2										A118693	GOSSANOUS
24.85		DO		2										A118694	GOSSANOUS
26.14		DO		3										A118695	
28.35		DO													ARGILLS
35.67		SH		2											
36.89		SH		2										A118696	SH/TF
38.11		DO			50			80	20					A118697	
39.33		DO												A118698	
53.35		ST													DO/ST/SH
67.38		SL													
109.76		SH													DO/SH
151.22		ST													ST/SH
163.41		SH													DO
191.16		MS													DO/MS/ST/SH
207.32		ST													DO/ST
215.55		XSH													
235.44		SH													BLACK ARGILLACEOUS

KOSMINSKY HILL KH-DDH 11. KOSMINSKY HILL

DUNDAS, TASMANIA KH-DDH 11 DRILL LOG PROJECT DATE

113

COLLAR COORDINATES N ..... E ..... R.L. 250·9 ..... AZIM. 46 ..... DIP -60 ..... LOGGED BY .....

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	396114
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
31·50		SS	Ec												SS/ST
86·75		ST													ST/MS
98·00		SS													SS/ST
106·00		ST													ST/MS
105·25		DO													
111·50		ST													ST/MS
120·50		SL	Pho												SL/QZ
122·87		SL													
123·93		SL												A/1,18,77,7	
124·85		SL			TR			99						A/1,18,77,8	
125·91		SL												A/1,18,77,9	
157·50		SL													
166·60		SL													SL/QZ
202·00		SL													
203·75		QZ													
207·25		SL													
212·75		SL													SL/QZ
218·00		QZ													

KOSMINSKY HILL KH DDH 20

DUNDAS, TASMANIA KOSMINSKY HILL KH DDH 20 DRILL LOG PROJECT

DATE 114

COLLAR COORDINATES N ..... E ..... R.L. 394.2 AZIM. 71°AMG DIP -55 LOGGED BY .....

396115

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº	
26.70		S.T	Ec												
29.50		? ?													GOSSAN
42.70		S.T													ST/MS/SS
43.20		S.T												A1192.25	ST/MS/SS
43.80		S.T												A1192.26	ST/MS/SS
45.50		? ?												A1192.27	SILDERITE
46.50		XQZ	Rho		0.5			5.0	5.0					A1192.28	
85.00		XQZ													

ROSMINSKY HILL KH DDH 21

DUNDAS, TASMANIA

ROSMINSKY HILL
KH DDH 21

DRILL LOG

PROJECT ✓ DATE X 15

COLLAR COORDINATES N ..... E ..... R.L. 398·8 ..... AZIM. 81° ..... DIP -60 ..... LOGGED BY .....

396116

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
13:00		ST	GC												ST/SS/MS GC
14:00		ST			05	99								A/1921/4	ST/SS/MS
16:90		XST			2.0			9.9						A/1921/5	SILDERITE
18:40		ST												A/1921/6	ST/SS/MS
25:50		ST													ST/MS
26:30		ST												A/1921/7	ST/MS
27:50		??			3.0			80	2.0					A/1921/8	SILDERITE
28:10		SS												A/1921/9	SS/ST/MS
94:46		ST													ST/SS/MS
104:00		VC													SERPENTINIZED
113:15		XST													
118:90		VC													SERP
212:44		ST													ST/SS/MS

KOSMINSKY HILL KH-DDH23

DUNDAS, TASMANIA — DRILL LOG — PROJECT — DATE 1/16

KOSMINSKY HILL
KH-DDH23

COLLAR COORDINATES N ..... E ..... R.L. 390.2 ..... AZIM. 71 ..... DIP -70° ..... LOGGED BY .....

396117

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE NO	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
125.60		ST	EC												ST/MS
126.40		ST												A11921	ST/MS
127.50		ST			1.0			1.0	9.0					A11922	ST/MS
128.90		ST			0.1				9.9					A11923	ST/MS
152.05		ST													ST/MS
160.49		DO													
196.28		MS													
199.74		XST	PVO												
230.24		SL													

[redacted] 4 [redacted] ON [redacted]

SOUTH COMET

DUNDAS, TASMANIA SC DDH 4 DRILL LOG PROJECT ✓ DATE 4/12

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396118

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1,96:34		ST			02	99								A1,191,17	ST/SH
1,97:41		ST			1,5	5.0			5.0					A1,191,16	ST/SH
1,98:48		ST			05	9.0								A1,191,15	ST/SH
2,10:50		ST													ST/SH
2,11:75		DO													
2,25:00		ST													ST/SH
2,33:23		DO													

SOUTH COMET SC DDH

DUNDAS, TASMANIA SOUTH COMET SC DDH 4 DRILL LOG

PROJECT 1 DATE 1/8

COLLAR COORDINATES N ..... E ..... R.L. 434.5 AZIM. 51 DIP -80 LOGGED BY .....

396119

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1.4.5.0		S.T	E6	4											S.T/S.S/S.M
2.6.2.0		S.T		2											S.T/S.M
3.4.5.0		S.T													S.T/S.M, BLACK
4.6.0.0		S.T													S.T/S.M, PINK
10.1.5.0		S.T													S.T/S.M, PALE G
10.6.8.0		S.T													S.T/S.M, BLACK
13.7.5.0		X.C.G	Era												
15.0.7.0		S.T	E4												S.T/S.M
15.2.5.0		D.O													
16.2.9.6		S.T													S.T/S.M
16.3.7.2		S.T												A.1.1.9.1.3.1	S.T/S.M
16.6.6.2		S.S			1.0				9.9					A.1.1.9.1.2.9	CO_3
17.1.3.4		S.S			3.0			5.0	5.0					A.1.1.9.1.2.8	CO_3
17.3.7.8		S.T												A.1.1.9.1.2.7	S.T/S.S/S.M, CO_3
17.5.1.5		S.T												A.1.1.9.1.2.6	S.T/S.S/S.M, CO_3
17.5.7.6		S.T			0.5	9.9								A.1.1.9.1.2.5	S.T/S.S/S.M, CO_3
17.8.3.0		S.T													S.T/S.S/S.M, CO_3
17.8.9.6		C.G	E4												
18.1.8.6		C.G												A.1.1.9.1.2.4	
18.4.7.6		S.S			0.5			5.0	5.0					A.1.1.9.1.2.3	S.S/S.T/D.O
18.6.5.9		S.S			0.2				9.9					A.1.1.9.1.2.2	S.S/S.T/D.O
18.9.4.8		S.S			0.5	5.0	2.0	1.0	2.0					A.1.1.9.1.2.0	S.S/S.T/D.O
19.2.0.7		S.S												A.1.1.9.1.1.9	S.S/S.T/D.O
19.4.5.1		G.G			3.0	0.5		0.5	9.0					A.1.1.9.1.1.8	~~S.T/S.M~~

SOUTH COMET SC DDH 10

DUNDAS, TASMANIA — DRILL LOG — PROJECT ✓ — DATE 119X

COLLAR COORDINATES N ..... E ..... R.L. 466:8 ..... AZIM. 75° ..... DIP -70 ..... LOGGED BY .....

396120

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
2.2:6.0		S.T	€.6	4											GREY
2.5:1.0		S.T		3											PINK
4.0:5.0		S.T		1											RED
5.9:2.3		S.T													
6.8:8.4		S.T												A.1.1.9.1.4.6	
5.9:1.5		S.T			1.0	1.0			9.0					A.1.1.9.1.4.5	
6.1:2.8		S.T												A.1.1.9.1.4.4	
6.9:0.0		S.T													
7.0:3.0		D.O													
8.0:6.0		S.S													S.S/S.H
8.1:4.0		D.O													
8.8:7.2		S.H													S.H/S.S
8.9:9.4		S.H												A.1.1.9.1.47	S.H/S.S
9.1:1.6		S.H			2.0				9.9					A.1.1.9.1.48	S.H/S.S
9.2:3.8		S.H			0.1	9.9								A.1.1.9.1.49	S.H/S.S
9.3:6.0		X S.H													
9.9:1.0		(X) C.G	Ena												
10.5:3.0		S.S													S.S/S.T
13.9:3.0		(X) C.G													
14.3:7.0		S.S													S.S/S.T
14.5:3.0		(X) C.G													
15.2:7.4		S.T	€.h												
15.3:9.6		S.T			0.1			9.9						A.1.1.9.1.51	
15.5:7.9		S.T												A.1.1.9.1.52	

K[redacted] H[redacted] 4-[redacted]12

DUNDAS, TASMANIA KOSMINSKY HILL DDH KH 12 DRILL LOG PROJECT DATE 120

COLLAR COORDINATES N ..... E ..... R.L. 378.0 AZIM. 89 DIP -50 LOGGED BY .....

396121

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1.3:2.5		S.T	Ec	4											S.T/S.H
1.4:5.0		S.T													S.T/S.H
3.7:7.5		M.S													M.S/S.T
4.2:3.0		S.S													S.S/S.T
4.5:6.0		Q.Z													Q.Z/S.T
4.7:8.0		S.L													
6.1:7.5		Q.Z													Q.Z/S.T
6.3:5.0		S.L													
7.4:6.0		S.S													S.S/S.T
8.7:3.0		S.L													
9.7:2.5		M.S													M.S/S.T
10.2:6.0		S.T													S.T/S.H
10.5:4.0		M.S													M.S/S.T
11.5:2.4		D.O													
11.7:3.8		D.O												A/1/92.43	
12.0:4.3		D.O			0.5	99								A/1/92.44	
12.1:0.4		D.O			0.1				99					A/1/92.45	
12.2:5.6		D.O			0.5	50			50					A/1/92.46	
12.3:4.8		S.L	Pyo											A/1/92.47	S.L/S.T
14.1:7.7		S.L													S.L/S.T
14.2:9.9		S.L												A/1/92.45	S.L/S.T
14.6:3.4		S.L			1.0	0.5		90	0.5					A/1/92.49	S.L/S.T
15.0:6.1		S.L												A/1/92.51	S.L/S.T
15.1:8.3		S.L			0.1				99					A/1/92.52	S.L/S.T

KH DDH 13

DUNDAS, TASMANIA KOSMINSKY HILL KH DDH 13 DRILL LOG PROJECT 1 DATE X 121

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396122

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
102.74		BT			0.5			50	50					A118749	ST/MS
103.66		ST			0.5				99					A118750	ST/MS
105.79		ST			1.0			50	50					A118751	ST/MS
~~106.75~~		ST												A118752	ST/MS SS/MS
108.54		ST													ST
112.80		SS													SS/ST
115.15		MS													
123.50		ST													ST/MS
128.05		MS	Ec												MS

KOSMINSKY HILL RH-DD113

DUNDAS, TASMANIA — DRILL LOG — PROJECT ✓ — DATE X 122

COLLAR COORDINATES N ..... E ..... R.L. 364.6 ..... AZIM. 71 ..... DIP -50 ..... LOGGED BY .....

396123

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
6.25		S.T	Ec	4											S.T/MS
15.40		S.T		3											S.T/MS
16.40		MS		2											
34.15		SS													SS/S.T
35.75		MS													
45.75		S.S													S.S/S.T
55.75		MS													
67.68		S.S													S.S/S.T
69.00		S.S			0.5	9.9								A11874.2	S.S/S.T
70.27		MS												A11874.3	
71.34		SS												A11874.4	S.S/S.T
74.60		SS													S.S/S.T
82.90		MS													
86.75		S.T													S.T/MS
87.80		MS													
88.72		MS												A11874.5	
89.94		MS			1.0			5.0	5.0					A11874.6	
~~90.25~~		S.T												A11874.7	S.T/MS
91.46		~~MS~~													
94.25		MS													
96.60		S.T													S.T/MS
98.20		MS													
100.61		S.T													S.T/MS
101.57		S.T													

K[redacted]INS[redacted] H[redacted] [redacted]-DD[redacted]H

DUNDAS, TASMANIA KOSMINSKY HILL KH DDH 14 DRILL LOG PROJECT ✓ DATE 1/28

COLLAR COORDINATES N ..... E ..... R.L. 391.1 AZIM. 71 DIP -50 LOGGED BY .....

396124

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
9.23		ST	Ec	4											ST/MS/SS
11.28		ST	B	2										A11876 5	ST/MS/SS GOSSAN
14.02		ST												A11876 6	ST/MS/SS GOSSAN
15.24		ST												A11876 7	ST/MS/SS
51.52		ST													ST/MS/SS
52.13		ST												A11876 8	ST/MS/SS
52.74		ST												A11876 9	ST/MS/SS CO3
53.35		ST												A11877 0	ST/SS/QZ
72.10		ST													ST/SS/QZ
75.55		SE													
107.90		ST													ST/SS/QZ
115.30		SE													
154.57		ST													ST/MS

KOSMINSKY HILL
KH-DDH 15

DUNDAS, TASMANIA DRILL LOG PROJECT / DATE 124

COLLAR COORDINATES N ..... E ..... R.L. 381.1 AZIM. 71 DIP -55 LOGGED BY .....

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº	396125
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70
1.1.40		S.T	Ec												S.T/MS
1.3.35		S.T													S.T/MS GREEN
1.9.75		S.T													S.T/MS
3.3.70		S.T													S.T/MS GREEN
3.5.90		S.T													S.T/MS
3.8.11		S.T													S.T/MS GREEN
3.9.02		S.T												A.1.1.8.9.1.3	S.T/MS GREEN
4.0.85		S.T			0.1	9.9								A.1.1.8.9.1.4	S.T/MS
4.1.77		S.T												A.1.1.8.9.1.5	S.T/MS
4.4.51		S.T													S.T/MS
4.5.12		S.T												A.1.1.8.9.1.6	S.T/MS
4.6.95		S.T			2.0		0.5	8.0	1.5					A.1.1.8.9.1.7	S.T/MS
4.8.17		S.T												A.1.1.8.9.1.8	S.T/MS
5.3.05		S.T													S.T/MS
5.4.27		S.T												A.1.1.8.9.1.9	S.T/MS
5.5.79		S.T			4.0	1.0	1.0	4.0	6.0					A.1.1.8.9.2.0	S.T/MS
~~5.6.20~~		S.T												A.1.1.8.9.2.1	S.T/~~MS~~ S.Q.Z/MS
5.7.32		~~S.T~~													~~S.Q.Z~~
10.7.62		S.L													S.Q.Z

DUNDAS, TASMANIA KOSMINSKY HILL XH - DDH 16 DRILL LOG PROJECT / DATE 1/25

COLLAR COORDINATES N ..... E ..... R.L. 370.4 ..... AZIM. 71 ..... DIP -55 ..... LOGGED BY .....

396126

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
27:40		S,T	Ec	4											
55:79		S,T													
56:71		S,T												A/1/92421	
58:54		S,T												A/1/92414	CO_3
62:29		S,T			0.5			1.0	9.0					A/1/92399	
64:33		S,L	Pko		0.5			2.0	8.0					A/1/92388	CO_3
65:24		S,L												A/1/92377	
95:50		S,L													
99:90		Qz													
102:13		S,L													
103:35		S,L												A/1/92366	
103:96		S,L												A/1/92355	
104:88		S,L			1.0				9.9					A/1/92344	
112:50		S,L													
119:00		Qz													
126:00		S,L													
132:60		Qz													
146:60		S,L													
163:88		S,L													S,L/Qz
164:33		S,L												A/1/92333	S,L/Qz
165:24		S,L			3.0			6.0	40					A/1/92321	S,L/Qz
166:46		S,L												A/1/92311	S,L/Qz
168:60		S,L			0.1				9.9					A/1/92299	S,L/Qz
188:11		S,L													S,L/Qz

K [redacted] DD [redacted] 8 [redacted] T [redacted]

KOSMINSKY HILL

DUNDAS, TASMANIA KH - DDH 18 DRILL LOG PROJECT ✓ DATE 126

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396127

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
207.01		QZ												A119292
207.62		QZ			20	30		40	30					A119293
208.23		QZ												A119294
214.94		QZ												

KOSMINSKY HILL KH - DDH18

DUNDAS, TASMANIA DRILL LOG PROJECT / DATE 127

COLLAR COORDINATES N ..... E ..... R.L. 364.3 ..... AZIM. 71 ..... DIP -56 ..... LOGGED BY .....

396128

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
14.60		ST	Ec												ST/S,H
33.45		QZ	Pyo												QZ/S,L
36.40		S,L													
43.85		QZ													
52.13		S,L													
53.05		S,L			0.5	9.9								A/1/92777	
53.66		S,L												A/1/92778	
56.10		QZ												A/1/92779	
79.88		QZ													QZ/S,L
81.25		QZ												A/1/92781	QZ/S,L
81.71		QZ			3.0	3.0	0.5	0.5	6.0					A/1/92782	QZ/S,L
82.62		QZ												A/1/92783	QZ/S,L
102.74		QZ													QZ/S,L
103.35		QZ			1.0			5.0	5.0					A/1/92784	QZ/S,L
105.79		QZ			1.0			5.0	5.0					A/1/92785	QZ/S,L
110.98		QZ												A/1/92786	QZ/S,L
113.11		QZ			0.5	9.9								A/1/92787	QZ/S,L
115.85		QZ												A/1/92788	QZ/S,L
116.46		QZ			6.0	4.0		6.0						A/1/92789	QZ/S,L
118.00		QZ												A/1/92791	QZ/S,L
191.20		QZ													QZ/S,L
197.55		S,L													
205.00		QZ													QZ/S,L
206.40		QZ													

KOSMINSKY HILL KH DDH 4.

DUNDAS, TASMANIA — DRILL LOG — PROJECT — DATE

KOSMINSKY HILL
KH-DDH 4

128

COLLAR COORDINATES N ..... E ..... R.L. 393.6 AZIM. 81° DIP -55 LOGGED BY .....

396129

DEPTH TO	REC.	LITH.	STRAT.	OXID/N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
2.6:1.0		S.T	E.C	4											S.T/S.H/S.S
3.6:9.0		D.O													
49:9.0		S.H													S.H/S.L
57:1.0		S.T													S.T/S.H
78:3.5		S.H													S.H/S.L
81:1.0		S.H			0.5	5.0		2.5	2.5					A118719	S.H/S.L
83:5.4		S.H			0.5			5.0	5.0					A118720	S.H/S.L
85:0.6		S.H			7.0			5.0	5.0					A118721	S.H/S.L
86:2.8		S.H												A118722	S.H/S.L
87:6.0		S.H													S.H/S.L
92:6.0		S.T													S.T/S.H
191:1.6		S.H													S.H/S.L

KOSMINSKY HILL - KH-

DUNDAS, TASMANIA

KOSMINSKY HILL
KH DDH 2

DRILL LOG

PROJECT ✓

DATE 129

COLLAR COORDINATES N ..... E ..... R.L. 372.0 AZIM. 71 DIP -55 LOGGED BY .....

396130

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
22.56		ST	Ec	4											ST/MS/S,H/S,S
23.47		ST		3										A118945	ST/MS/S,H/S,S
23.63		ST		2	6.0			50	50					A118946	ST/MS/S,H/S,S
24.39		ST												A118947	ST/MS/S,H/S,S
47.00		ST													ST/MS/S,H/S,S
57.60		ST													ST/S,H
87.50		ST													ST/MS/S,H/S,S
89.02		DO													
90.09		DO			0.5			50	50					A118948	
90.40		DO			0.5				99					A118949	
91.46		ST												A118950	ST/MS/S,H/S,S
94.00		ST													ST/MS/S,H/S,S
107.32		DO													
108.54		SH			0.2				9.9					A118951	SH/SL
109.15		SH												A118952	SH/SL
109.76		DO													NO CORE
110.37		DO			0.5			50	50					A118953	
110.98		DO												A118954	
128.90		SH													SH/SL
130.30		DO													
288.41		SH													SH/SL

KOSMINSKY HILL

DUNDAS, TASMANIA KH - DDH 1 **DRILL LOG** **PROJECT** DATE 130

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396131

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
246:34		MS													MS/ST/SS
248:32		MS												A119207	MS/ST/SS
251:83		MS			1.0	3.0			7.0					A119208	MS/ST/SS
252:44		MS												A119209	MS/ST/SS
257:20		MS													MS/ST/SS
302:00		SL													SL/SH

[redacted] SM[redacted]SKY [redacted] HILL [redacted] KH - DDH 1

DUNDAS, TASMANIA KOSMINSKY HILL KH DDH 1 DRILL LOG PROJECT ✓ DATE 131

COLLAR COORDINATES N ..... E ..... R.L. 386.6 ..... AZIM. 101 ..... DIP -55 ..... LOGGED BY .....

396132

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
8.5:9.8		MS	E.C												MS/ST/SS
8.6:8.9		MS												A11915	MS/ST/SS
8.9:0.2		DO			0.5			9.0	1.0					A11916	
9.0:5.5		DO			3.0			9.0	1.0					A11917	
9.5:7.3		DO			2.0			5.0	5.0					A11918	
9.9:0.9		DO												A11919	
10.0:0.0		DO			0.5			5.0	5.0					A11920	
10.1:2.2		MS												A11920	MS/ST/SS
11.3:6.0		MS													MS/ST/SS
13.6:1.0		SS													
13.8:9.0		SL													
14.1:9.0		SS													
14.3:7.0		SL													
19.0:6.0		MS													MS/ST/SS
19.7:5.6		DO													
19.8:7.8		MS												A11920	MS/ST/SS
19.9:3.9		MS			1.0			5.0	5.0					A11920	MS/ST/SS
20.3:1.0		MS			2.0			9.9						A11920	
20.5:3.4		SL													SL/SH
20.6:7.1		SL												A11920	SL/SH
21.0:2.0		SL													SL/SH
21.8:2.0		DO													
23.0:0.0		MS													MS/ST/SS
23.6:0.0		DO													

[redacted] SOUTH [redacted] COMET [redacted] SC [redacted] DDH [redacted]

DUNDAS, TASMANIA SOUTH COMET SC DDH 12 DRILL LOG

PROJECT J DATE [redacted]32

COLLAR COORDINATES N ..... E ..... R.L. 423.8 AZIM. 51° DIP ~70° LOGGED BY .....

396133

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
1,5,5,0		S,T	€,b	4											
1,2,1,4,5		S,T													
1,2,4,5,5		S,H													
1,4,2,5,0		S,T	€,h												S,T/M,S,
1,4,8,1,0		S,T													
1,4,9,0,0		S,T			0,2			5,0	5,0					A,1,1,8,9,7,8	
1,5,0,4,0		S,T			0,2			5,0	5,0					A,1,1,8,9,7,9	
1,5,1,4,0		S,T												A,1,1,8,9,8,0	
1,5,8,0,0		S,T												~~A,1,1,8,9,8,1~~	
1,5,9,0,0		S,T												A,1,1,8,9,8,2	
1,6,0,1,0		S,T			4,0	9,9								A,1,1,8,9,8,3	
1,6,1,0,0		S,T												A,1,1,8,9,8,3	
1,7,6,1,0		S,T													
1,8,2,9,3		D,D	€,r												

SC DDH 16 CONT

DUNDAS, TASMANIA

SOUTH COMET
SC-DDH 17

DRILL LOG

PROJECT

DATE 133

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	396134
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1,6,2;3,0		S.G			1,0	3,0			7,0			D.O - P.4		A,1,1,9,1,1,3	
1,6,3;7,0		S.L	P.V.O											A,1,1,9,1,1,4	SERPENTINIZED
1,6,5;5,0		S.L													SERPENTINIZED
1,6,7;6,0		V.C													SERPENTINIZED
1,7,7;2,0		S.L													
1,8,2;3,0		V.C													SERPENTINIZED
2,1,2;6,0		S.L													
2,3,3;2,3		S.T	F.C												S.T/M.S

SOUTH COMET SE DDH 17

DUNDAS, TASMANIA — DRILL LOG — PROJECT — DATE 1/3/1

COLLAR COORDINATES N ..... E ..... R.L. 384.1 AZIM. 79° DIP -70° LOGGED BY .....

396135

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
58.70		SS	EA												SS/ST
59.90		SS			0.5	5.0			5.0					A119098	SS/ST
64.10		SS			1.5		0.5		9.5					A119099	SS/ST
64.90		SS					C							A119101	SS/ST
70.10		SS													SS/ST
85.00		SS													
85.60		SS			0.5				9.9					A119102	
86.90		SS			0.1	5.0			5.0					A119103	
87.50		SS			0.1			5.0	5.0					A119104	
90.90		SS													~~SS/ST~~
92.45		SS													SS/ST
95.50		CG	EV												
96.40		CG												A119105	
98.00		CG			4.0	2.0		3.0	5.0					A119106	
98.80		CG												A119107	
104.10		CG													
106.80		SS													SS/ST
108.00		SS												A119108	SS/ST
108.80		SS			4.0	2.0		4.0	4.0					A119109	SS/ST
109.80		SS			0.1			5.0	5.0					A119111	SS/ST
135.75		SS													SS/ST
144.00		CG													
160.00		ST													
160.70		SE			0.2	9.9						D.O-P4		A119112	

[redacted]H-[redacted]9 [redacted]NT KOSMINSKY HILL

DUNDAS, TASMANIA KH DDH 19 DRILL LOG PROJECT / DATE X35

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396136

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
21.0:7.5		S,H													S,H/S,C/S,T
22.6:5.2		S,T													S,T/S,H/S,S
22.7:7.4		S,T												A1192558	S,T/S,H/S,S
23.0:7.9		S,H			0.5				99					A1192557	S,K/S,C/S,T (CO3)
23.3:2.3		S,H												A1192556	S,H/S,C/S,T
25.6:1.0		S,T													S,T/S,H/S,S
25.9:7.6		S,T												A1192553	S,T/S,H/S,S
26.2:8.0		S,H			0.1	9.9								A1192554	S,H/S,C/S,T
26.5:2.4		S,H												A1192553	S,H/S,C/S,T
28.2:5.0		S,H													S,H/S,C/S,T
29.3:5.5		Qz	Pmo												

KOSMINSKY HILL
KH - DDH 19

DUNDAS, TASMANIA DRILL LOG PROJECT / DATE X 136

COLLAR COORDINATES N ..... E ..... R.L. ...371:3..... AZIM. ....73..... DIP ....-70..... LOGGED BY .....

39613?

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1,9:0,0		S,T	C,S												S,T/S,H/S,S
3,4:5,0		S,H													S,H/S,T/S,L
3,8:1,1		S,T													S,T/S,H/S,S
3,9:7,9		S,T			0,1	9,9								A,1,1,9,2,7,6	S,T/S,H/S,S
4,6:9,5		S,T			1,0	9,0		2,0	8,0					A,1,1,9,2,7,5	S,T/S,H/S,S
4,8:0,0		S,T												A,1,1,9,2,7,4	S,T/S,H/S,S
5,0:9,1		S,H													S,H/S,T/S,L
5,2:1,3		S,H												A,1,1,9,2,7,3	S,H/S,T/S,L
10,4:0,0		S,T													S,T/S,H/S,S
14,8:14,8		S,H													S,H/S,T/S,L
15,0:6,1		S,H												A,1,1,9,2,7,2	S,H/S,T/S,L
15,1:7,7		S,H			4,9			3,0	7,0					A,1,1,9,2,7,1	S,H/S,T/S,L
15,8:5,0		S,H			0,1	9,9								A,1,1,9,2,6,9	S,H/S,T/S,L
16,6:7,7		S,T													S,T/S,H/S,S
16,9:5,1		S,H												A,1,1,9,2,6,8	S,H/S,T/S,L
17,1:4,9		S,H			1,0	9,9								A,1,1,9,2,6,7	S,H/S,T/S,L CQ
17,2:2,6		S,H												A,1,1,9,2,6,6	S,H/S,T/S,L
19,0:5,5		S,H													S,H/S,T/S,L
19,1:4,6		S,H												A,1,1,9,2,6,5	S,H/S,T/S,L
19,4:2,1		S,H			0,5			5,0	5,0					A,1,1,9,2,6,4	S,H/S,T/S,L
19,7:2,6		S,H			1,0	9,5			0,5					A,1,1,9,2,6,3	S,H/S,T/S,L
20,0:3,0		S,H			1,0			4,0	6,0					A,1,1,9,2,6,2	S,H/S,T/S,L
20,6:7,1		S,H			2,0			5,0	5,0					A,1,1,9,2,6,1	S,H/S,T/S,L
20,8:2,3		S,H			0,1				9,9					A,1,1,9,2,5,9	S,H/S,T/S,L

KH-DDH 8

DUNDAS, TASMANIA — KOSMINSKY HILL KH-DDH 8 — DRILL LOG — PROJECT — DATE 13/

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396138

DEPTH TO	REC.	LITH.	STRAT.	OXID'N	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1,95.43		S.L			0.5				9.9					A118933	S.L/Q.Z
1,97.26		S.L												A118934	S.L/Q.Z
2,09.25		S.L													S.L/Q.Z
2,23.25		Q.Z													
2,52.13		S.L													S.L/Q.Z

KOSMINSKY HILL
KH-DDH 8

DUNDAS, TASMANIA DRILL LOG PROJECT ✓ DATE 138

COLLAR COORDINATES N ..... E ..... R.L. 350·9 ..... AZIM. 46 ..... DIP -60 ..... LOGGED BY .....

396139

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
5·03		S,S	E,C	4										A118925	S,S/S,T
11·13		S,S		4										A118926	S,S/S,T
14·18		S,S		(3)										A118927	S,S/S,T
32·75		S,S													S,S/S,T
34·25		S,E													
57·50		S,H													S,H/S,L/S,T/S,S
64·40		S,T													S,T/M,S/S,H
71·00		S,H													S,H/S,L/S,T/S,S
74·90		S,T													S,T/M,S/S,H
91·25		S,H													S,H/S,L/S,T/S,S
96·50		S,H													
103·25		S,E													
109·50		S,H													
117·50		S,T													S,T/M,S/S,H
125·60		S,H													S,H/S,L/S,T/S,S
149·25		S,T													S,T/M,S/S,H
178·96		S,L	Pup												S,L/Qz
179·57		S,L			0.5	9.9								A118928	S,L/Qz
180·79		S,L			6.0	5.0			5.0					A118929	
182·01		S,L			2.0	9.9								A118930	
182·62		S,L			2.0	9.9								A118931	
184·00		S,L													
192·99		S,L													S,L/Qz
194·21		S,L			1.0	9.9								A118932	S,L/Qz

[redacted] SODA [redacted]

DUNDAS, TASMANIA SOUTH COMET SC-DDH 11 DRILL LOG PROJECT 139 DATE

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396140.

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 7
166:46		SS			7.0	0.5			9.5					A1191923	
169:21		SS			7.0	2.0			8.0					A1191933	
170:73		SS												A1191944	
202:13		CG	Er												Er
			ER												

SOUTH COMET SC-DDH 11

DUNDAS, TASMANIA — SOUTH COMET SC-DDH 11 — DRILL LOG — PROJECT — DATE 1/40

COLLAR COORDINATES N ..... E ..... R.L. 464·9 ..... AZIM. 75° ..... DIP -75 ..... LOGGED BY .....

396141

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1,3:5.0		S.S	E.b												E.b S.S/S.M
4,6:2.9		C.G													E.r.a M.S/C.G
48:5.0		D.O													
5,2:5.0		C.G													G.G/M.S
5,3:6.6		S.S													
5,4:5.7		G.G												A,1,9,1,8,4	
5,4:8.7		S.S			4.0	5.0			5.0					A,1,9,1,8,5	
5,6:1.0		S.S												A,1,9,1,8,6	
5,6:7.5		S.S													
6,4:0.0		C.G													M.S/C.G
6,6:2.5		(D.O)	Y												
7,0:5.0		C.G													M.S/C.G
7,3:7.5		S.S													
8,0:0.0		S.T													S.S/M.S/C.G
9,1:2.5		S.S													
1,08:0.0		C.G													M.S/C.G
1,1,8:5.0		S.E													E.S
1,2,2:0.0		S.T													E.r.a S.S/M.S/C.G
1,5,3:6.6		S.S													~~S.S/M.S/C.G~~
1,5,4:2.7		S.S												A,1,9,1,8,7	
1,5,5:1.8		S.S			1.0				9.9					A,1,9,1,8,8	
1,5,5:7.9		S.S			1.0	9.9								A,1,9,1,8,9	
1,6,1:2.8		S.S													
1,61:8.9		S.S												A,1,9,1,9,1	

SOUTH COMET [redacted] DDH 11A

DUNDAS, TASMANIA

SOUTH COMET
SC - DDH 11A

DRILL LOG

PROJECT / DATE 14/1

COLLAR COORDINATES N ..... E ..... R.L. 464.9 ..... AZIM. 75 ..... DIP -59 ..... LOGGED BY .....

396142

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
27.25		SS	E.S			EB	V							SS/SM
44.50		CG	Era											MS/CG
52.80		DO												
91.16		ST												SS/MS/ST/CG
92.07		ST												A1191577 SS/MS/ST/CG
95.12		ST			1.0			1.0	9.0					A1191578 SS/MS/ST/CG
96.65		ST												A1191579 SS/MS/ST/CG
108.23		ST												SS/MS/ST/CG
109.15		ST												A1191611 SS/MS/ST/CG
109.45		ST			1.0	1.0		2.0	7.0					A1191612 SS/MS/ST/CG
110.06		ST												A1191613 SS/MS/ST/CG
121.04		ST												SS/MS/ST/CG
125.00		ST												A1191614 SS/MS/ST/CG
126.52		ST			1.0			5.0	5.0					A1191615 SS/MS/ST/CG
127.44		ST			0.5	9.9								A1191616 SS/MS/ST/CG
129.88		ST			1.5			6.5	3.5					A1191617 SS/MS/ST/CG
133.00		ST	~~Era~~		2.0				9.9					A1191618 SS/MS/ST/CG
135.96		ST	E.A											ST/SS ?
138.72		ST			3.0			6.5	3.5					A1191619 ST/SS
139.32		ST			8.0		4.0		6.0					A1191711 ST/SS
142.38		ST			5.0		4.0		6.0					A1191712 ST/SS
144.82		ST												A1191713 ST/SS
153.05		ST												ST/SS

SOUTH COMET SC DDH9

DUNDAS, TASMANIA SOUTH COMET SC DDH9 DRILL LOG PROJECT DATE 142

COLLAR COORDINATES N ..... E ..... R.L. 348.5 AZIM. 76° DIP -55 LOGGED BY .....

396143

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1320		ST	Ec	4											GREY
4010		ST													
4920		SH													
5350		MS													
5880		MS	Evc												
9848		SL													
9970		SL												A11 9058	
10381		QZ			20	99								A11 9059	
10579		QZ			10				99					A11 9061	
11738		SL													

SC DDH 8 Comet

DUNDAS, TASMANIA

SOUTH COMET
SC-DDH 8

DRILL LOG

PROJECT / DATE 143

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396144

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
1,17:40		QZ												QZ/SL
1,22:0,0		QZ												
1,28:3,5		SL												

SOUTH COMET

DUNDAS, TASMANIA

SOUTH COMET
SC DDH 8

DRILL LOG

PROJECT ✓

DATE A44

COLLAR COORDINATES N ..... E ..... R.L. 374.7 ..... AZIM. 76 ..... DIP -55 ..... LOGGED BY .....

396145

DEPTH TO	REC.	LITH.	STRAT.	OXID/N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
4.40		MS	Ec	4											
5.00		MS		3											MS/SST
9.40		MS		2											
26.80		MS		2											
28.20		SL	Evo												SL/QZ
34.76		SL													
35.37		SL			0.5	9.9								A11907 8	
36.89		SL			0.5	9.9								A11907 9	
37.80		SL												A11908 1	
38.10		SL													
46.80		QZ													
64.60		SL													SL/QZ
66.20		SL													
71.19		SL													SL/QZ
71.45		SL												A11908 2	SL/QZ
72.71		SL			1.0	9.9								A11908 3	SL/QZ
73.78		SL												A11908 4	
89.20		SL													SL/QZ
106.71		QZ													QZ/SL
107.93		QZ												A11908 5	QZ/SL
109.15		QZ			0.1				9.9					A11908 6	
112.96		QZ			0.2		9.9							A11908 7	
113.72		SL			2.0				9.9					A11908 8	SL/QZ
114.63		QZ			1.0				9.9					A11908 9	QZ/SL

SOUTH COMET SC-DDH 7

DUNDAS, TASMANIA

SOUTH COMET SC-DDH 7

DRILL LOG

PROJECT

DATE 145

COLLAR COORDINATES N ..... E ..... R.L. 322.8 ..... AZIM. 76 ..... DIP -50 ..... LOGGED BY .....

396146

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
3.6;1.0		S,T	Eh												
48:0.0		S,M													
73:6.0		S,T													
79:3.0		C,G													
91:3.0		S,M													
92:2.0		S,M			01				99					A1 19042	
93:9.0		S,E	Es												D.B. V.C.
95:0.0		S,E			2050				50					A1 19043	D.B. V.C.
96:3.4		S,M	Ec												
97:4.1		S,M			0.5		99							A1 19044	
1.1.5:2.0		S,M													
12.1:3.4		S,L	Pvo												

DUNDAS, TASMANIA — SOUTH COMET SC-DDH 6 — DRILL LOG — PROJECT — DATE 1/86

COLLAR COORDINATES N ..... E ..... R.L. 333·8 ..... AZIM. 76 ..... DIP -55 ..... LOGGED BY .....

396147

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº	
26·20		S.L	P40												
30·50		S.L													S.L/QZ
35·00		QZ													
37·20		S.L													S.L/QZ
43·50		S.L													
45·50		S.L													S.L/QZ
53·35		QZ													
53·81		QZ												A119174	
54·12		QZ			9.0	4.5		2.0	3.5					A119175	
57·62		QZ												A119176	
58·54		QZ			7.0	2.0			8.0					A119177	
59·45		S.L			1.0				9.9					A119178	
61·28		S.L			2.5			1.0	9.0					A119179	
62·20		S.L			0.5				9.9					A119181	
62·50		S.L			3.0	5.0			5.0					A119182	
64·02		S.L												A119183	
65·40		S.L													
67·80		QZ													~~S.L/QZ~~
71·20		S.L													S.L/QZ
75·20		QZ													
87·20		S.L													S.L/QZ
93·20		S.L													
103·96		S.L													S.L/QZ

SOUTH COMET SC - DDH5

DUNDAS, TASMANIA — DRILL LOG — PROJECT ✓ — DATE ✓147

COLLAR COORDINATES N ..... E ..... R.L. 391.8 ..... AZIM. 51 ..... DIP -75 ..... LOGGED BY .....

396148

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1,14;63		SH	Eb											1	
1,14;94		SH												A119132	
1,16;77		SH			0,5	9,9								A119133	
1,18;60		SH			0,5	9,9								A119134	
1,19;82		SH			95	3,0	4,0		3,0					A119135	
1,23;79		SH			0,5			50	5,0					A119136	
1,24;09		SH												A119137	
1,26;75		SH													
1,33;40		SH													PINK
1,38;60		SG	Era												
1,44;00		CG													
1,48;70		SS													
1,51;52		SH	Eb												
1,52;44		SH												A119138	
1,54;42		SH			2,0	2,0			8,0					A119139	
1,55;79		SH												A119141	
1,56;40		SH			4,0	5,0	2,0	2,0	1,0					A119142	
1,57;62		SH												A119143	
1,74;00		SH													
1,92;61		SH													CO_3

SC DDH 4A Cont

DUNDAS, TASMANIA SOUTH COMET SC-DDH 4A DRILL LOG PROJECT ✓ DATE 1/8

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396149

DEPTH TO	REC.	LITH.	STRAT.	OXID/N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
1760		SS													CQ
1870		SS													S S/S T/S M CQ

SOUTH COMET SC DDH 4A

DUNDAS, TASMANIA SOUTH COMET SC DDH 4A DRILL LOG PROJECT / DATE 149

COLLAR COORDINATES N ..... E ..... R.L. 434·5 AZIM. 51 DIP -56 LOGGED BY .....

396150

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
3.2;4.0		S.T	Eb	3											S.T/S.S/S.H
4.5;6.0		S.T													S.T/S.H. BLACK
1.05;4.9		S.T													S.T/S.H. PINK
1.05;7.9		S.T			0.1	9.9								A.1.18997	S.T/S.H. PINK
1.08;5.4		S.T			4.0	4.0		0.5	4.5					A.1.18998	S.T/S.H. PINK
1.1.1;2.8		S.T			0.1	9.9								A.1.18999	S.T/S.H. PINK
1.1.2;8.0		S.T			0.1			9.9						A.1.19000	S.T/S.H. PINK
1.1.4;0.2		S.T												A.1.19001	S.T/S.H. PINK
1.2.9;7.5		S.T													S.T/S.H. PINK
1.3.0;6.4		S.T												A.1.19002	S.T/S.H. PINK
1.3.2;0.1		S.T			8.0	2.5		3.0	4.5					A.1.19003	S.T/S.H. BLACK
1.3.3;5.4		S.T			0.1				9.9					A.1.19004	S.T/S.H. BLACK
1.3.5;5.0		S.T													S.T/S.H. BLACK
1.3.6;5.9		XCG	Era												
1.3.7;8.0		XCG	Eb		0.1	9.9								A.1.19005	
1.3.9;0.2		XCG			1.0			5.0	5.0					A.1.19006	
1.4.4;5.1		XCG			3.0	0.5		0.5	9.0					A.1.19007	
1.4.6;6.5		S.T			2.0	9.9								A.1.19008	S.T/S.H.
1.5.9;4.5		S.T													S.T/S.H.
1.6.1;5.9		S.T			0.5	9.9								A.1.19009	S.T/S.H.
1.6.2;6.0		S.T			1.0			1.0	9.0					A.1.19010	S.T/S.H.
1.6.3;2.0		99			35									A.1.19011	CG
1.6.4;6.3		S.T													S.T/S.H.
1.6.5;6.0		S.T													S.T/S.H.

[redacted] KOSMINSKY HILL [redacted]

DUNDAS, TASMANIA KH DDH 19 DRILL LOG PROJECT

DATE 15/6

COLLAR COORDINATES N ..... E ..... R.L. 360.7m AZIM. 71°AMG DIP -52° LOGGED BY .....

396151

DEPTH TO	REC.	LITH.	STRAT.	OXID/N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº	
4.80		S,T	Ec	4											S,T/S,H/S,S/MS
7.40		S,T		4										A11877	S,T/S,H/S,S/MS
8.10		(?)		4										A11877	GOSSAN
8.80		S,T		4										A11877	S,T/S,H/S,S/MS
54.20		S,T		2											S,T/S,H/S,S/MS
67.40		MS													MS/S,T/QZ
68.20		MS												A11878	MS/S,T/QZ
68.80		MS			5.0	99								A11875	MS/S,T/QZ
69.40		MS												A11877	MS/S,T/QZ
78.65		MS													MS/S,T/QZ
82.20		QZ	Ruo												
84.20		S,L													S,L/QZ
84.60		S,L												A11929	S,L/QZ
86.00		S,L												A11929	S,L/QZ
87.20		S,L												A11929	S,L/QZ
125.30		S,L													S,L/QZ

SOUTH COMET SC - DDH 21

DUNDAS, TASMANIA SOUTH COMET SC - DDH 21 DRILL LOG PROJECT 151 DATE ✓

COLLAR COORDINATES N ..... E ..... R.L. 419.2 AZIM. 73° DIP -75° LOGGED BY .....

396152

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
1.00.75		ST	Eh											EH
1.24.60		SS												
1.25.80		SS			0.1	9.9								A11 92 98
1.26.20		SS			5.0			3.0	7.0					A11 92 99
1.26.90		SS												A11 93 01
1.79.60		SS												
2.00.40		CG	Ev											
2.03.40		XDO	Ec											
2.15.50		VC												
2.61.10		ST												EC
2.78.10		SS												
2.79.20		SS												A11 93 02
2.80.80		SS			3.0	8.0		0.5	1.5					A11 93 03
2.82.60		SS			0.5	0.5			9.5					A11 93 04
2.84.00		SS			3.0	9.5		0.5						A11 93 05
2.85.00		SS			1.0	8.0			2.0					A11 93 06
3.18.90		SS												

[redacted] Co

SOUTH COMET

DUNDAS, TASMANIA SC - DDH 7 DRILL LOG PROJECT DATE 1/52

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396153

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
260:40		S.T												A/L 189946	
273:20		S.T													
306:40		S.C													S.C/S.T
307:00		D.O													
366:50		S.T													S.T/M.S/S.S
397:90		S.S													

DUNDAS, TASMANIA SOUTH COMET SC - DDH 7 DRILL LOG PROJECT DATE 153

COLLAR COORDINATES N ..... E ..... R.L. 405:5 ..... AZIM. 76° ..... DIP -75° ..... LOGGED BY .....

396154

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº	
90:30		S T	Eh												Eh
143:20		S S													
151:80		C G	Er												Er
170:00		S T	Ec												Ec
173:40		D O													
183:10		X S T													
197:50		S T													
217:00		X V C													
217:80		X V C												A11898 4	
218:00		X V C			7.0	2.0		4.0	4.0					A11898 5	
218:50		X V C			0.5	9.9								A11898 6	
225:40		X V C													
226:10		X V C												A11898 7	
226:60		X V C			0.5	9.9								A11898 8	
227:10		X V C												A11898 9	
228:30		X V C													
230:70		S T													
231:40		S T			2.0			5.0	5.0					A11899 0	
233:40		S T			2.0	9.9								A11899 1	
234:40		S T			1.0	5.0		3.0	2.0					A11899 2	
236:00		S T												A11899 3	
257:40		S T													
258:20		S T			0.5	9.9								A11899 4	
258:80		S T			1.5	9.9								A11899 5	

[redacted] INSLIE [redacted] 4- [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]

DUNDAS, TASMANIA AINSLIE A-DDH1 DRILL LOG PROJECT 154 DATE [redacted]

COLLAR COORDINATES N ..... E ..... R.L. 472·6m AZIM. 31°AMG DIP -65 LOGGED BY .....

396155

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
25·61		S.L	Pvo	4										
26·22		SH												A161782
27·44		Q.V			40	5·0		5·0						A161783
29·88		SH												A161784
93·60		SH												
94·51		D.O												A161785
94·97		D.O			01	9·9								A161786
95·12		(? ?)			20			80	20					A161787
96·34		D.O												A161788
		(SH)												

DD KH C

DUNDAS, TASMANIA Kosminsky Hill KH DDH 7 DRILL LOG PROJECT ✓ DATE 15/5

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396156

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
21.6:1.6		S.L	PVO											A118941	S.L/Qz
21.7:3.8		S.L			25	99								A118942	S.L/Qz
21.8:2.9		S.L			10	99								A118943	S.L/Qz
22.0:5.5		S.L												A118944	S.L/Qz
22.9:8.8		S.L													S.L/Qz

DUNDAS, TASMANIA KOSMINSKY HILL KH DDH 7 DRILL LOG PROJECT 156 DATE X

COLLAR COORDINATES N ..... E ..... R.L. 351.5 ..... AZIM. 81° ..... DIP -56° ..... LOGGED BY .....

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	39615
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1.3.6.0		SH	(E)												SH/ST
2.5.0.0		SS													SS/ST
4.0.1.0		SH													SH/ST
5.4.8.8		SS													SS/ST
5.6.1.0		SS												A11893.5	SS/ST
5.7.6.2		SS												A11893.6	SS/ST
5.8.5.4		SS												A11893.7	SS/ST
7.2.0.0		SS													SS/ST
7.5.7.5		SE													
9.2.0.0		SL													SL/QZ
9.9.6.0		SH													SH/ST
1.0.1.1.0		MS													MS
1.0.6.0.0		SL													SL/QZ
1.1.0.0.0		SH													SH/ST
1.1.9.5.0		MS													
1.3.0.6.0		SH													SH/ST
1.3.7.7.5		MS													
1.5.4.0.0		XMS													
2.0.2.4.4		SL	(PYO)		✓										SL/QZ
2.0.3.0.5		SL												A11893.8	SL/QZ
2.0.4.7.3		SL			3.0	3.0			7.0					A11893.9	SL/QZ
2.0.6.1.0		SL													SL/QZ
2.0.7.3.2		SL												A11894.0	SL/QZ
2.1.4.3.3		SL	✓												SL/QZ

[redacted] MONTEZUMA MZN DDH 6

DUNDAS, TASMANIA — DRILL LOG — PROJECT 1 — DATE 157

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396158

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
1,09;2,2		Q,Z	P40		5,0	9,9								A,1,8,6,19
1,02;1,3		Q,Z			0,5	9,9								A,1,8,6,20
1,06;1,0		Q,Z												
1,06;5,5		Q,Z			0,5	9,9								A,1,8,6,21
1,08;0,8		S,L			3,0	9,9								A,1,8,6,22
1,08;8,4		S,L												A,1,8,6,23
1,15;8,5		S,L												
1,16;3,1		S,L			1,0	9,0			1,0					A,1,8,6,24
1,17;8,4		S,L			8,0	9,9								A,1,8,6,25
1,18;9,0		Q,Z												A,1,8,6,26
1,21;3,9		Q,Z												
1,28;6,6		S,L												
1,28;9,6		Q,Z												

MONTEZUMA DDH-MZN 6

DUNDAS, TASMANIA MONTEZUMA MZN DDH 6 DRILL LOG PROJECT / DATE 158

COLLAR COORDINATES N ..... E ..... R.L. 650.9 AZIM. 221° DIP -60 LOGGED BY .....

396159

DEPTH TO	REC.	LITH.	STRAT.	OXIDN.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
4.9:2.4		S.L												
49:7.0		S.L			0.2	9.9								A186.01
50:6.1		S.L			1.0	9.9								A1186.02
51:0.4		S.L												A1186.03
55:4.9		S.L												
60:2.4		QZ												
64:7.4		S.L												
65:55		S.L			0.1	9.9								A1186.04
66:1.6		S.L			0.5	9.9								A1186.05 CO3
66:9.2		S.L			3.0	9.9								A1186.06
67:58		S.L			0.5	9.9								A1186.07
68:6.0		S.L			1.0	9.9								A1186.08
70:43		S.L			0.1	9.9								A1186.09
71:1.9		QZ			0.5	9.9								A1186.10
71:9.5		QZ			1.0	9.9								A1186.11
72:8.7		QZ			5.0	9.9								A1186.12
74:0.9		QZ			0.5	9.9								A1186.13
75:3.0		S.L												A1186.14
79:7.3		S.L												
80:6.4		S.L												A1186.15
81:1.0		S.L			1.0		9.0		0.5	0.5				A1186.16
81:7.1		S.L												A1186.17
98:8.6		S.L												
100:0.0		SL			1.0	9.9								A1186.18

MONTEZUMA [redacted] [redacted] 5

DUNDAS, TASMANIA MONTEZUMA MZN - DDH 5 DRILL LOG PROJECT J DATE 1/59

COLLAR COORDINATES N ..... E ..... R.L. 650.9 ..... AZIM. 301° AMG DIP -70 ..... LOGGED BY .....

396160

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
2.4.4.4		QZ	P40	4											QZ/S.L/S.H
2.5.4.6		QZ		4										A118643	QZ/S.L/S.H
2.6.2.2		QZ		3	3.0	5.0	2.5		2.5					A118643	QZ/S.L/S.H
2.7.3.9		QZ		3										A118644	QZ/S.L/S.H
5.7.9.3		QZ		1										A	QZ/S.L/S.H
5.8.8.4		QZ												A118639	QZ/S.L/S.H
5.9.5.0		QZ			0.2	9.9								A118640	QZ/S.L/S.H
6.0.0.6		QZ												A118641	QZ/S.L/S.H
6.2.8.0		QZ			Q										QZ/S.L/S.H
6.3.5.7		QZ			0.5	5.0	5.0							A118633	QZ/S.L/S.H
6.5.2.4		QZ			0.2	9.9								A118634	QZ/S.L/S.H
6.6.1.6		QZ			3.0	4.5			0.5					A118635	QZ/S.L/S.H
6.7.6.8		QZ			1.0	9.9								A118636	[redacted] QZ/S.L/S.H
6.9.3.6	→	[redacted]			9.9	9.0				1.0				A118637	VEIN QTZ
7.0.2.7		S.L			1.0	9.9								A118638	
7.3.1.7		S.L													
9.4.7.9		S.L													S.L/QZ
9.6.1.1		S.L												A118630	S.L/QZ
9.7.4.1		S.L			2.0	5.0		2.5	2.5					A118631	S.L/QZ
9.7.8.7		S.L			0.5			5.0	5.0					A118632	S.L/QZ
1.24.4.7		S.L													
1.25.3.0		QZ													
1.26.2.2		QZ												A118627	
1.26.5.2		QZ			3.0	9.0			1.0					A118628	
127.13		QZ												A118629	

[redacted] Monte[redacted] DD[redacted]ME[redacted]4 [redacted]

DUNDAS, TASMANIA MONTEZUMA MZN DDH 4 DRILL LOG PROJECT DATE 1/60

COLLAR COORDINATES N ..... E ..... R.L. 650.9 ..... AZIM. 266° ..... DIP -75 ..... LOGGED BY .....

396161

DEPTH TO	REC.	LITH.	STRAT.	OXID'N	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
61.0		S.L	RUO												S.L/QZ
63.3		S.L			0.5	9.9								A16178.9	S.L/QZ
64.4		S.L			0.5				9.9					A16179.0	S.L/QZ
66.0		S.L			0.3	0.5			9.5					A16179.1	S.L/QZ
67.2		S.L			0.5				9.9					A16179.2	S.L/QZ
69.5		S.L			0.5	9.9								A16179.3	S.L/QZ
70.0		S.L			1.0	2.5		5.0	2.5					A16179.4	S.L/QZ
72.2		S.L			0.2			5.0	5.0					A16179.5	QZ/S.L
73.0		S.L			1.0	5.0			5.0					A16179.6	QZ/S.L
122.4		S.L													S.L/QZ
124.0		S.L			0.2	9.9								A16179.7	S.L/QZ
125.5		S.L			3.0	9.9								A16179.8	S.L/QZ
127.0		S.L			4.0	9.9								A16179.9	S.L/QZ
128.3		S.L												A16180.0	S.L/QZ
170.6		S.L													S.L/QZ

DUNDAS, TASMANIA MONTEZUMA MEN DDH 3 DRILL LOG PROJECT 161 DATE

COLLAR COORDINATES N ..... E ..... R.L. 634:1 ..... AZIM. 256°AMG DIP -60 ..... LOGGED BY .....

396162

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
14:10		S.L	EVO											
14:90		S.L												A161755
15:60		S.L			10	90		1.0						A161756
17:60		S.L												A161757
25:20		S.L												
26:45		QZ												
26:85		S.L												A161758
27:15		S.L			1.0	9.9								A161759
28:00		S.L												A161760
46:97		S.L												
87:07		QZ												
88:00		XS.L												
136:86		S.L												S.L/QZ

DUNDAS, TASMANIA MONTEZUMA MZN DDH 2 DRILL LOG PROJECT DATE 162

COLLAR COORDINATES N ..... E ..... R.L. 575·3 ..... AZIM. 71° ..... DIP -50 ..... LOGGED BY .....

396163

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
79·73		S.C	P.C											
80·49		S.C												A161749
80·79		S.C			3·0	9·9								A161750
83·08		S.C			0·2	9·9								A161751
85·67		S.C												A161752
85·98		S.C			0·5	9·9								A161753
87·20		S.C			0·2	9·9								A161754
		S.C												

[redacted] DRILL [redacted] [DATA: DUNDAS. MARCH]

DUNDAS, TASMANIA PETER'S MONTEZUMA MZN DDH 1 DRILL LOG 602 PROJECT DATE 163

FIELDBOOK. DAT

COLLAR COORDINATES N ..... E ..... R.L. 583.2 ..... AZIM. 66°A116 DIP -50 ..... LOGGED BY .....

396164

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1:83		??	P.C	4											GOSSAN
4:88		??		4										A16174 0	GOSSAN
7:93		??		4										A16174 1	GOSSAN
14:02		??		4										A16174 2	GOSSAN
21:65		??		4	0.5			99						A16174 3	GOSSAN
21:95		??		4	99	99								A16174 4	GOSSAN
25:00		SC			0.1		99							A16174 5	
137:50		SC													
137:80		SC			0.1		99							A16174 6	
138:11		SC			1.0	2.0		9.0						A16174 7	
141:46		SC			0	99	[redacted]							A16174 8	
221:34		SC													

CONTINUED

DDH 10 CONT

DUNDAS, TASMANIA SOUTH COMET SC DDH 10 DRILL LOG PROJECT DATE X 164

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	396165
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
157:01		SE	Gs											A11915 3	
158:40		SE												A11915 4	
160:06		ST	EA		EA										ST/SS
160:67		ST												A11915 5	ST/SS
161:89		ST			1.0			3.0	7.0					A11915 6	ST/SS
172:70		ST													ST/SS
183:20		SS													SS/ST
191:70		CG	Gr												
229:30		ST													
230:00		CG													
258:54			Gc												

DDH 10 CONT SOUTH COMET

DUNDAS, TASMANIA SC DDH 10 DRILL LOG PROJECT DATE 165

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396166

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
157:01		SE	Es											A119153	
158:40		SE												A119154	
? 160:06		ST	Ek		Ek										ST/SS
160:67		ST												A119155	ST/SS
161:89		ST			1.0			3.0	7.0					A119156	ST/SS
172:70		ST													ST/SS
183:20		SS													SS/ST
191:70		CG	Er												
229:30		ST													
230:00		CG													
258:54			Ec												

KOSMINSKY HILL WEST

DUNDAS, TASMANIA KHW DDH 1 DRILL LOG PROJECT 1 DATE 166

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396167

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1,1,7;3,8		MS													D,O/MS
1,35;9,8		S,H													D,O/S,H
1,38;7,2		X,S,H													
1,47;0,3		M,S													D,O/MS
1,54;2,7		X,S,H													~~D,O/MS/S/H~~ BLACK
1,55;4,9		X,S,H												A,1,6,1,7,7,6	
1,55;6,4		?,?			9,9	50	1,0	3,0	1,0					A,1,6,1,7,7,7	V,E,I,N
1,57;3,2		X,S,H			0,2	9,9								A,1,6,1,7,7,8	
1,60;6,7		S,H													
1,81;7,1		S,T													
1,83;0,8		MS													D,O/M,S/S,H
1,93;9,0		M,S													D,O/M,S
2,10;0,6		S,H													S,S/S,H
2,20;4,3		MS													D,O/M,S
2,42;6,8		S,T													
2,43;6,0		S,T												A,1,6,1,7,7,9	
2,43;7,5		?,?			2,0			9,9						A,1,6,1,7,8,0	V,E,I,N
2,44;5,1		S,T												A,1,6,1,7,8,1	S,T/S,H
2,54;8,8		S,T													B,L,A,C,K

COMET DDH CZ

DUNDAS, TASMANIA COMET DDH CZ DRILL LOG PROJECT DATE 167

COLLAR COORDINATES N ..... E ..... R.L. 285.4 ..... AZIM. 61°AMG DIP -55 ..... LOGGED BY .....

396168

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1.0:5.1		S.H	PHO	4											M.I.C.A. B.L.A.C.K
8.0:4.2		D.O		2											R.E.C.R.Y.S.
8.4:6.3		S.H													C.Q.
9.7:7.7		S.H													D.O/S.H.
10.6:4.0		D.O													R.E.C.R.Y.S.
10.7:9.3		D.O			1.0	9.9								A.1.1.9.3.0.7	R.E.C.R.Y.S.
10.8:2.3		D.O			0.5	9.9								A.1.1.9.3.0.8	R.E.C.R.Y.S.
10.9:7.6		??													C.A.V.I.T.Y.
11.8:2.9		D.O												A.1.1.9.3.0.9	R.E.C.R.Y.S.
11.9:2.1		D.O												A.1.1.9.3.1.1	R.E.C.R.Y.S.
12.9:3.1		D.O													R.E.C.R.Y.S.
20.1:6.4		S.H													D.O/S.H.
21.4:4.7		S.H													C.Q.

[redacted] SC [redacted] C[redacted]

DUNDAS, TASMANIA SOUTH COMET SC DDH 1 DRILL LOG PROJECT DATE 168

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396169

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1,4,2;3,8		S,L	Pvo											A,1,1,9,0,75	B,L,A,C,K
1,4,3;9,0		S,M			9,0	4,0			6,0					A,1,1,9,0,76	SS/SM
1,4,4;5,1		S,M			1,0	9,9								A,1,1,9,0,77	
2,0,7;6,2		S,M													

SOUTH COMET DDH-1

DUNDAS, TASMANIA SOUTH COMET SC DDH 1 DRILL LOG PROJECT ✓ DATE 1/69

COLLAR COORDINATES N ..... E ..... R.L. 340·8 ..... AZIM. 76° ~~MAG~~ TRUE ..... DIP −55 ..... LOGGED BY .....

396170

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1.5:8.5		SH	Eh	4											
26:22		SH													
27:44		SH												A119062	
28:35		SH			8.0			4.0	6.0					A119063	V,E/N,S
29:27		XSH			0.1			9.9						A119064	
35:67		SH													
51:83		SH													S.H/S.S
58:71		XCG	Ev												
83:00		ST	Ec												
87:20		SH													
89:10		SL												A119065	
89:94		QV			1.0			5.0	5.0					A119066	V,E/N
92:07		SH			0.2	9.9								A119067	D.O/S.H
94:66		SH			0.5		5P		5.0					A119068	D.O
96:95		SH													
97:86		XSH													
1.07:32		SH													
1.08:08		SH												A119069	
1.09:60		SH			6.0			5.0	5.0					A119071	C.G
1.10:37		SS												A119072	
1.30:49		SS													
1.36:90		SH													D.O/S.S/S.H
1.38:57		SH			1.0	7.0	1.0		2.0					A119073	
1.39:25		SH			6.0	2.0		6.0	2.0					A119074	PYRITE

[redacted] SOUTH COMET [redacted] SC

DUNDAS, TASMANIA SOUTH COMET SC DDH 2A DRILL LOG PROJECT DATE 1/70

COLLAR COORDINATES N ..... E ..... R.L. 376·8 ..... AZIM. 91°AMG ..... DIP -85 ..... LOGGED BY .....

396171

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
5.18		S.T	Eh	4											
12.50		X.S.T		3											
17.38		S.T		2											
59.46		S.T													S.T/S.H/S.S
60.06		S.H												A119045	~~S.T/S.H/S.S~~ D.O/S.H
60.98		S.H			0.1	9.9								A119045	D.O/S.H
62.80		S.H			1.0	1.0			9.0					A119046	D.O. V.E/M.S
70.81		D.O			9.0		9.5	4.5	4.0					A119047	
74.70		S.H			4.0				9.9					A119048	
75.30		S.H												A119049	C.A.S.H
79.88		S.S	Ev												
97.87		C.G													
121.04		S.H	Ec												D.O
122.56		S.H												A119051	D.O
124.86		S.H			1.0			5.0	5.0					A119052	D.O
124.09		S.S			0.1		9.9							A119053	
125.30		C.G	Ev											A119054	
127.29		C.G													
207.01		S.H													BLACK CO3
208.84		D.O												A119055	
210.36		D.O			1.5	0.5		5.0	4.5					A119056	
212.50		D.O												A119057	
236.87		S.H													D.O/S.H
256.55		G.W													V.O.L.C.A.N.I.C

SOUTH COMET DDH 2

DUNDAS, TASMANIA SOUTH COMET SC DDH 2 DRILL LOG PROJECT DATE 171

COLLAR COORDINATES N ..... E ..... R.L. 376·8 ..... AZIM. 091° AMG ..... DIP -55° ..... LOGGED BY .....

396172

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
26·22		S T	Eh	4											
28·51		S T			0.1			9.9						A119025	
28·65		? ?			4.0				9.9					A119026	VEIN
29·27		S T			0.5				9.9					A119027	
30·49		S T													
80·79		S S													
87·20		S T													
105·49		S T													DOSH
106·10		S H			0.2	3.0		3.0	4.0					A119028	DOSH
108·54		S H			0.2				9.9					A119029	DOSH
110·21		S H												A119030	DOSH
110·52		S H			1.0				9.9					A119032	DOSH
111·59		S H			0.5	9.9								A119033	DOSH VEIN
114·06		S H			9.0	9.9								A119034	DOSH
114·63		S H												A119035	DOSH
116·77		S H			4.0	0.5		0.5	9.0					A119036	DOSH
117·68		S H												A119037	DOSH
126·83		S H	Ec												DOSH
128·35		S H			0.5			5.0	5.0					A119038	DOSH
131·63		X S H			6.0	1.0		9.0						A119039	(Ed mEc)
132·93		S H												A119041	
143·60		S H													
169·51		S H													BLACK
172·56		X S H													
177·13		S H													CREAM

SOUTH COMET DDH-SC3

SOUTH COMET
SC DDH 3

DUNDAS, TASMANIA DRILL LOG PROJECT DATE 172

COLLAR COORDINATES N ..... E ..... R.L. 418.6 AZIM. 113° AMG DIP -60 LOGGED BY .....

396173

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
1.7:0.7		S.T	Eh	4										
75:0.0		S.T												
75:6.1		S.H												
122:5.6		S.T												
123:7.8		S.T												A/1/90/12
123:9.3		S.T			9.5	2.0		0.5	2.5					A/1/90/13
124:5.4		S.T			1.0	6.0		3.0	1.0					A/1/90/13
124:6.2		S.T			9.5	7.0		0.5	2.5					A/1/90/13
125:0.0		S.T			1.0	6.0		3.0	1.0					A/1/90/14
137:2.0		S.T												
137:9.6		S.T												A/1/90/15
138:1.1		?.?			5.0	1.5			8.5					A/1/90/16 VEIN
139:0.2		S.T												A/1/90/17
154:8.8		S.T												
155:7.9		S.T			0.5				9.9					A/1/90/18
156:1.0		?.?			8.0	7.0			3.0					A/1/90/19 VEINS
157:0.1		C.G	Er											A/1/90/21
160:0.6		C.G			2.0			8.0	2.0					A/1/90/22
161:8.9		C.G												A/1/90/23
162:8.0		C.G												A/1/90/24
169:6.6		C.G												
175:1.5		S.S	Ec											
175:9.1		Q.V												
183:2.3		S.H												
195.17		GW												

SOUTH COMET SC DDH 13

DUNDAS, TASMANIA — DRILL LOG — PROJECT — DATE 1/73

COLLAR COORDINATES N ..... E ..... R.L. 358.2 AZIM. 79° DIP -50 LOGGED BY .....

396174

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº	
44:82		ST		u											ST/SH/SS
45:73		ST		3										A119091	ST/SH/SS
50:00		XST			1.0			5.0	5.0					A119092	ST/SH/SS
50:91		ST												A119093	ST/SH/SS
61:74		ST													ST/SH/SS
91:16		SS													
91:77		SS												A119094	
96:34		SS			1.0				9.9					A119095	
100:30		XSL			0.5			5.0	5.0					A119096	
102:74		SL	Pvo		4.0	9.9								A119097	BLACK
106:86		SE	Es												BLACK SIC
108:84		SS	Ch												

S[redacted]DD[redacted]4 [redacted]T.

DUNDAS, TASMANIA SOUTH COMET SC DDH 14 DRILL LOG PROJECT J DATE 174

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	396175
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
156.90		SS													SS/ST/SL
157.90		SS												A118972	SS/ST/SL
159.60		SS			1.5				9.9					A118973	SS/ST/SL
161.00		SS												A118974	SS/ST
168.00		SS													SS/ST
169.40		SS			0.2			9.9						A118975	SS/ST
169.47		??			9.0	4.5	0.5	4.0						A118976	VEIN
170.00		ST												A118977	ST/MS
178.60		ST													ST/MS
197.20		XSS													
219.00		SL	Pwo												

SOUTH COMET SC DDH 14

DUNDAS, TASMANIA — DRILL LOG — PROJECT — DATE 7/175

SOUTH COMET SC DDH 14

COLLAR COORDINATES N ..... E ..... R.L. 379.9 ..... AZIM. 79° ..... DIP -67 ..... LOGGED BY .....

396176

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº	
41:80		SS	CH CG												SS/ST/SH
42:40		CH												A118955	
42:60		CH			2.0			1.0	9.0					A118956	
43:80		CH												A118957	
44:60		XCH			9.0	1.0		6.0	3.0					A118958	
47:10		SS			0.5			5.0	5.0					A118959	
53:10		SS													
53:66		SS												A118960	
54:00		XSS			9.5	5.0		5.0						A118961	SS/CG/ST
55:20		XSS			4.0		1.0	6.0	3.0					A118962	SS/CG/ST
56:00		CG	Er		1.0				9.9					A118963	
70:73		CG													
71:00		CG												A118964	
71:10		CG			6.0			9.9						A118965	
72:30		CG			0.5	3.0		6.0	1.0					A118966	
72:50		CG			7.0			9.9						A118967	
73:70		CG			0.5	9.9								A118968	
100:02		CG													
105:77		ST	Ec												
109:40		XST													
132:00		SS													SS/ST
132:45		SS												A118969	SS/ST
133:44		XST			4.0	2.0		4.0	4.0					A118970	
134:40		SS												A118971	

DUNDAS, TASMANIA MONTEZUMA MZP DDH 245A DRILL LOG PROJECT 7 DATE 176

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	396177
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52	53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
3,6,6:1.0		C.G	P.U												P.O/C.G
3,6,7:0.0		S.S													
3,7,4:0.0		S.C	P.C												

MONTEZUMA

DUNDAS, TASMANIA MONTEZUMA MZP 245A DRILL LOG PROJECT 7 DATE 177

COLLAR COORDINATES N 5364000mN E 373086.5mE R.L. 635.69 AZIM. 240°MAG DIP -80° LOGGED BY

396178

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
33.0.0		S.L	Pyo											
36.0.0		S.L												A/1/93501
39.0.0		S.L			0.5	9.9								A/1/93511
41.0.0		S.L												A/1/93522
55.9.0		S.L												
59.0.0		QZ												A/1/93533
60.1.0		QZ			0.2	9.9								A/1/93544
60.2.0		??			9.0	7.0		1.0	0.5	1.0	0.5			A/1/93556 VEIN
60.4.5		QZ												A/1/93567
60.9.0		??			9.0	6.5		1.5		1.5	0.5			A/1/93578 VEINS
64.0.0		S.L			1.0	9.9								A/1/93589
67.5.0		S.L												A/1/93601
67.8.0		S.L			2.0	9.9								A/1/93612
71.1.0		S.L												A/1/93623
71.8.0		S.L			1.0	9.9								A/1/93634
75.0.0		S.L			1.5	7.0		1.5		1.5				A/1/93645
77.0.0		S.L												A/1/93655
132.0.0		S.L												
135.3.5		S.L			1.0	8.9		2.0						A/1/93666
135.5.5		??			2.5	6.0		2.0		2.0				A/1/93677 VEIN
136.1.5		S.L			1.0	9.9								A/1/93688
138.0.0		S.L			1.5	9.9								A/1/93699
141.0.0		S.L												A/1/93710
232.1.5		S.L	Rp											

[redacted] T.

DUNDAS, TASMANIA MONTEZUMA MEP DDH 244 DRILL LOG PROJECT DATE 178

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	396179
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
1,46:0,0		CG												A119393	RO/CG
1,47:0,0		CG												A119394	DO/CG
1,48:0,0		CG												A119395	DO/CG
1,49:0,0		CG												A119396	DO/CG
1,64:0,0		GG													DO/CG
1,65:0,0		CG												A119397	DO/CG
1,66:0,0		CG												A119398	DO/CG
1,67:4,5		CG			1,0	5,0		2,0	3,0					A119399	DO/CG
1,68:0,0		CG			2,0	5,0		2,5	2,5					A119400	DO/CG
1,69:0,0		CG			5,0	9,0		0,5	0,5					A119501	DO/CG
1,70:0,0		CG			5,0	8,5		1,0	0,5					A119502	DO/CG
1,70:8,0		CG			9,0	8,5		0,5	1,0					A119503	DO/CG
1,72:0,0		CG			0,5	9,0			1,0					A119504	DO/CG
1,73:0,0		CG			TR	5,0	5,0							A119505	DO/CG
1,74:0,0		CG												A119507	DO/CG
1,75:0,0		CG			0,2	9,9								A119508	DO/CG
1,76:0,0		CG			0,5	9,9								A119509	DO/CG
1,77:0,0		CG			0,5	9,9								A119510	DO/CG
1,78:0,0		CG			0,5	9,9								A119511	DO/CG
1,94:0,0		CG													
1,95:0,0		SS													
2,50:0,0		SC	PC												

[redacted] P [redacted]

DUNDAS, TASMANIA MONTEZUMA MZP DDH 264 DRILL LOG PROJECT / DATE 179

COLLAR COORDINATES N 5363960.4mN E 373027.9mE R.L. 625.8 AZIM. 241°MAG DIP -60° LOGGED BY

396180

DEPTH TO	REC.	LITH.	STRAT.	OXIDN.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
6.18		S.L	Pvo	3										
15.00		S.L												
17.00		S.L			1.0	SP			SP					A119372
19.00		S.L			5	5.0			5P					A119373
20.00		S.L			2.0	4.0		2.0	4.0					A119376
23.00		S.L			0.5				9.9					A119375
26.00		S.L												A119376
32.00		S.L												A119377
38.00		S.L												
40.00		S.L												A119378
42.50		S.L			1.0	9.9								A119379
42.95		S.L			8.0	7.0				3.0				A119380 VEIN
43.60		S.L			0.3	9.9								A119381
44.40		S.L			0.5	9.9								A119382
45.60		S.L												A119383
47.20		S.L												A119384
50.00		S.L			0.3	9.9								A119385
138.00		S.L												
139.90		S.L			0.2	9.9								A119386
141.00		C.G	Pv											A119387 D.O/C.G
142.00		C.G												A119388 D.O/C.G
143.00		C.G												A119389 D.O/C.G
144.00		C.G												A119390 D.O/C.G
145.00		C.G												A119392 D.O/C.G

NORTH COMET NC DDH 1

DUNDAS, TASMANIA NC DDH 1 (NORTH COMET) DRILL LOG PROJECT 7 DATE 180

COLLAR COORDINATES N ..... E ..... R.L. 258.5 AZIM. 66 DIP -50 LOGGED BY .....

396181

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
8.0	4.9	S.L	RHO											
8.4	1.5	S.L			0.5	9.9								A119312
8.7	8.0	S.L			1.0		9.9							A119313
9.3	2.9	S.L			0.5		9.9							A119314
+9.9	0.0	S.L												

KOSMINSKY HILL WEST KHW DDH 3

DUNDAS, TASMANIA DRILL LOG PROJECT DATE 181

COLLAR COORDINATES N ..... E ..... R.L. 373.2 AZIM. 51 DIP -60 LOGGED BY .....

396182

DEPTH TO	REC.	LITH.	STRAT.	OXID'N	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº
5.18		SE	ES	4										
25.61		??												GOSSAN
129.27		SE												
415.85		SS	EC											
417.23		SS												
418.75		SS												A118922
420.12		SS			9.5		1.0	6.0	3.0					A118923
447.87		SS												A118924

KOSMINSKY HILL WEST KHW DDH 2

DUNDAS, TASMANIA — DRILL LOG — PROJECT 1 — DATE 182

COLLAR COORDINATES N ..... E ..... R.L. 340.9 AZIM. 51 DIP -60 LOGGED BY .....

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	396183
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
35.98		SE	Es	4											
38.72		??		4										A118759	GOSSAN
46.34		??		4										A118760	GOSSAN
53.96		??		4										A118761	GOSSAN
60.06		??		4										A118762	GOSSAN
72.26		??		4										A118763	GOSSAN
75.30		SE												A118764	
80.79		SE													
+90.00		SS	Ec												

[redacted] KOSMINSKY [redacted] HILL [redacted] W [redacted] KHW [redacted] DDH 6

DUNDAS, TASMANIA KOSMINSKY HILL WEST KHW DDH 6 DRILL LOG

PROJECT [redacted] / DATE 183

COLLAR COORDINATES N ..... E ..... R.L. 339.6 ..... AZIM. 51 ..... DIP -60 ..... LOGGED BY .....

396184

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
49.39		SE	65											
54.27		SE												A118753
55.18		SE												A118754
57.62		SE												A118755
58.84		SE												
60.67		SE												A118756
63.72		SE												A118757
64.94		SE												A118758
+70.00		SE												

KOSMINSKY HILL WEST KHW DDH 1A

KOSMINSKY HILL WEST

DUNDAS, TASMANIA KHW DDH 1A DRILL LOG PROJECT 1 DATE 184

COLLAR COORDINATES N ..... E ..... R.L. 371.3 AZIM. 243 DIP -70 LOGGED BY .....

396185

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº
4.4:8.2		S.S	E.C											
4.6:9.5		M.S												A118723
4.6:9.5		M.S			2.0			5.0	5.0					A118724
4.7:8.7		M.S			1.0	5.0	5.0							A118725
5.7:0.1		M.S												
5.8:2.3		M.S												A118726
5.8:6.9		D.O			3.0			5.0	5.0					A118727
6.1:5.1		M.S												A118728
6.1:8.9		D.O			40			50	5.0					A118729
6.3:1.1		M.S			0.5		9.9							A118730
8.2:6.2		S.H												
8.4:1.5		S.H												A118731
8.4:7.6		S.T			3.0			6.0	4.0					A118732
8.5:3.7		S.t												A118733
1.9.1:1.6		S.T												
1.9.1:4.6		S.T			0.1			9.9						A118734
1.9.3:6.0		S.T			0.2	9.9								A118735 CO3
1.9.4:2.1		S.H			0.1	9.9	0.							A118736
1.95:7.3		S.H			0.5	9.9								A118737
1.9.7:2.6		S.H												A118738
2.0.0:3.0		S.H												
2.0.0:6.1		S.H												A118739
2.0.1:8.3		S.H			0.1			5.0	5.0					A118740
2.0.3:3.5		S.H			0.2				9.9					A118741
+20.5.0.0		S.H												

KOSMINSKY HILL EAST - DDH 5

DUNDAS, TASMANIA KOSMINSKY HILL EAST KHE - DDH 5 DRILL LOG PROJECT 7 DATE 185

COLLAR COORDINATES N ..... E ..... R.L. 308·5 ..... AZIM. 86° ..... DIP -65 ..... LOGGED BY .....

396186

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE NO
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
60·06	~~80~~	S.L	Ryo											
68·29	2.0	? ?												A11860
81·10	1.0	? ?			50	99								A11870 1
96·06	2.0	? ?												A11870 2
99·70		S.L												
100·00		S.L			02	·		50	50					A11870 3
101·07		S.L			02		99							A11870 4
101·83		S.L			1.0		99							A11870 5
+ 105·00		S.L												

KOSMINSKY HILL KOSMINSKY HILL KH DDH 6

DUNDAS, TASMANIA DRILL LOG PROJECT DATE 1/85

COLLAR COORDINATES N ..... E ..... R.L. 383.8 ..... AZIM. 71° ..... DIP -55 ..... LOGGED BY .....

396187

DEPTH TO	REC.	LITH.	STRAT.	OXID/N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
23.48		DO	E,C	4											DO/SH
29.57		DO		3											DO/SH
35.67		DO		1											DO/SH
48.17		SH										SQ-P3			
50.91		SH										SQ-P3		A118589	
52.29		DO			05				99			SQ-P4		A118590	
53.05		DO										SQ-P3		A118591	
53.96		DO													
57.01		xSH													DO
63.11		SH													DO
72.26		SH													
73.17		SL			02				99					A118592	SL/SH
74.39		SL			40			80	20					A118593	SL/SH
75.30		SL			05				99					A118594	SL/SH
78.35		SL			10				99					A118595	SL/SH
81.40		SH												A118596	DO
127.13		SH													SH/SL
129.27		SH												A118597	SL/SH
130.18		SH			20				99					A118598	SL/SH
131.40		SH												A118599	SL/SH
175.91		SL													SH/SL

[redacted] COMET [redacted] DDH C1

COMET

DUNDAS, TASMANIA C DDH 1 — DRILL LOG — PROJECT ✓ — DATE 187

COLLAR COORDINATES N ..... E ..... R.L. 297.3 ..... AZIM. 61°MAG DIP -60 ..... LOGGED BY .....

396188

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
3.9:4.2		S.H	R40	4											MICA BLACK
6.0:9.8		S.H		1											CO_3
1.2.0:4.3		D.O													RECRYS
1.2.1:6.5		D.O												A.1.1.9.3.1.5	RECRYS
1.2.3:7.8		D.O			0.5			99						A.1.1.9.3.1.6	RECRYS
1.2.5:0.0		D.O												A.1.1.9.3.1.7	RECRYS
1.2.6:0.2		D.O													RECRYS
1.2.6:3.7		D.O			0.2	99								A.1.1.9.3.1.8	RECRYS
1.2.7:1.3		D.O			1.0	99		0.5						A.1.1.9.3.1.9	RECRYS
1.2.8:3.5		D.O												A.1.1.9.3.2.1	RECRYS
1.5.1:9.1		D.O													RECRYS
1.7.8:7.2		S.H													D.O/S.H
1.8.6:6.1		S.H													CO_3
2.0.0:8.0		S.H													D.O/S.H
2.1.2:3.6		D.O													RECRYS
2.1.8:6.7		S.H													D.O/S.H
2.2.3:9.3		S.H													CO_3
2.4.3:9.0		S.H													D.O/S.H
2.8.8:7.2		S.H													CO_3
2.8.9:9.4		S.H												A.1.1.9.3.2.2	CO_3
2.9.1:4.6		S.H			0.5		99							A.1.1.9.3.2.3	CO_3
2.9.2:0.7		S.H			0.5	99								A.1.1.9.3.2.4	CO_3
2.9.7:5.2		S.H													CO_3

K[redacted]NSKY [redacted] KH [redacted] DDH 22

DUNDAS, TASMANIA KOSMINSKY HILL KH DDH 22 DRILL LOG PROJECT DATE 188

COLLAR COORDINATES N 5361978mN E 370688mE R.L. 396.2 AZIM. 80° DIP -60 LOGGED BY

396189

DEPTH TO	REC.	LITH.	STRAT.	OXID'N	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52
15:00		ST	EC	2										
16:30		ST		2										A119220
21:30		SL		2										A119222
23:50		SH		2										A119223
26:50		SH												A119226

53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72

60.55 AN

[redacted]

[redacted] DDH [redacted] CG [redacted] Co [redacted]

DUNDAS, TASMANIA CG (CUNI) DDH 2 DRILL LOG PROJECT DATE 189

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396190

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
406.9.0		MS													RED SS/S T/SH/MS
412.2.0		GN													
440.0.0		SH													GREY SS/SH
4															

DUNDAS, TASMANIA CG DDH2 (CUNI) — DRILL LOG — PROJECT — DATE 190

COLLAR COORDINATES N 5367800mN E 367090mE R.L. 204 AZIM. 290:5° DIP -46:5° LOGGED BY

396191

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE NR	
168.0		SH	EC	4											SH/SS GREY
320.0		SH													SH/SS
440.0		XSH													SH/SS
595.0		SH													SH/SS
678.0		SS													
786.0		SH													SILICEOUS
836.0		SS													SS/SH
880.0		SH													SH/SS
894		SH			0.2	5.0	2.0	0.5	2.5					A119325	SH/SS
898.0		??			1.0	2.0		1.0	7.0					A119326	VGIM
910.0		ST												A119327	ST/SH
1195.0		ST													ST/SH
1583.0		SS													SS/SH
1760.0		SH													SH/SS
2000.0		SS													SS/SH
2120.0		SH													SH/SS
2280.0		SS													SS/SH
2710.0		SH													SH/SS/ST
2713.0		SH													PYRITIC
3280.0		ST													RED SS/ST/SH
3760.0		ST													GRETGN SS/ST/SH
3775.0		XST													GREY/GREEN SS/ST/SH
3861.5		SS													SS/MS LITHIC
3887.0		GH													

KOSMINSKY HILL EAST KHE-DDH2

DUNDAS, TASMANIA KOSMINSKY HILL EAST KHE DDH 2 DRILL LOG PROJECT DATE 191

COLLAR COORDINATES N ..... E ..... R.L. 382.3 AZIM. 81° DIP -55 LOGGED BY .....

396192

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
6.6	7.7	S.H	Ec												
6.7	6.8	S.H												A118665	
6.7	9.9	S.H			7.0			3.0	7.0					A118666	D.O
6.9	2.1	S.H												A118667	S.H/S.S
1.1	3.1	S.H													
1.8	8.1	S.L	R40												S.L/Q.Z
1.8	9.0	S.L												A118668	S.L/Q.Z
1.9	1.4	S.L			2.0	2.5		5.0	2.5					A118669	S.L/Q.Z D.O
1.9	3.6	S.L												A118670	S.L/Q.Z
2.2	2.6	S.L													S.L/Q.Z
2.2	9.4	S.L			0.5	9.9								A118671	S.L/Q.Z
2.2	3.4	S.L			1.0	9.9								A118672	S.L/Q.Z V.G/N.S
2.2	4.0	S.L			0.5	9.9								A118673	S.L/Q.Z
2.9	7.8	S.L													S.L/Q.Z

KHE DDH 1 CONT
ROSMINSKY HILL EAST

DUNDAS, TASMANIA KHE DDH 1 DRILL LOG

PROJECT

DATE 192

COLLAR COORDINATES N ..... E ..... R.L. ..... AZIM. ..... DIP ..... LOGGED BY .....

396193

DEPTH TO	REC.	LITH.	STRAT.	OXID.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
1 2 3 4 5	6 7	8 9 10	11 12	13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29 30 31 32 33 34 35 36 37 38 39	40 41 42 43 44 45	46 47 48 49 50 51 52
273:1.7		DO			6.0	1.0		4.5	4.5					A11866 3
273:7.8		SH												A11866 4
+280:0.0		SH												

KOSMINSKY HILL EAST – KHE DDH 6

DUNDAS, TASMANIA KOSMINSKY HILL EAST KHE DDH 6 DRILL LOG PROJECT

193 DATE

COLLAR COORDINATES N ..... E ..... R.L. 313:1 AZIM. 61° DIP –60 LOGGED BY .....

396194

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº	
3.9.6.3		SL	Duo												SL/QZ
3.9.9.4		SL												A118681	SL/QZ
4.0.2.4		SL			4.0	9.9								A118682	VEIN SL/QZ
4.0.8.5		SL												A118683	SL/QZ
4.6.4.9		SL													SL/QZ
4.7.7.1		SL												A118680	SL/QZ
4.9.2.4		SL			2.5	4.0		6.0						A118679	SL/QZ
5.0.6.1		SL			0.1			5.0	5.0					A118678	SL/QZ
5.1.9.8		SC	P.C											A118677	
5.3.9.6		SC			0.8	9.9								A118676	
5.4.4.2		SC			2.0	4.5		5.0		0.5				A118675	
5.5.6.4		SC			0.5	9.9								A118674	
+6.0.0.0		SC													

KOSMINSKY HILL EAST KHE-DDH 1A

KOSMINSKY HILL EAST
KHE DDH 1A

DUNDAS, TASMANIA DRILL LOG

PROJECT

DATE 1/ 94

COLLAR COORDINATES N ..... E ..... R.L. 391.8 AZIM. 91° DIP -65 LOGGED BY .....

396195

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
7.1:9.5		S.M	Gc											
7.2:8.7		S.L												A118684
7.3:4.8		D.O			1.5	1.0		7.5	1.5					A118685
7.4:0.9		S.L												A118686
7.6:5.2		XS.M												
9.1:2.3		S.M												
9.2:3.8		X.D.O												A118687 D.O/C.M
9.3:6.7		X.D.O			8.0			4.0	6.0					A118688 D.O/C.M
9.4:8.2		S.L			0.5	3.0		3.0	4.0					A118689
(+) 9.5:0.0		S.M												

KOSMINSKY HILL EAST - KHE DDH 1

KOSMINSKY HILL EAST
KHE DDH 1

DUNDAS, TASMANIA DRILL LOG PROJECT

DATE 8/195

COLLAR COORDINATES N ..... E ..... R.L. 442.1 ..... AZIM. 81° ..... DIP -55 ..... LOGGED BY .....

396196

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
3.6;8.9		S,H	E.C.	4											
3.8;7.2		S,H		4										A1/18645	
4.0;8.5		XS,H		3	5.0			5.0	5.0					A1/18646	
4.0;5.5		XS,H												A1/18647	
7.3;7.8		S,H													
7.4;7.0		S,H												A1/18648	
7.5;8.8		S,H												A1/18649	
7.5;9.1		??												A1/18650	
18.3;8.4		S,H													
18.4;6.5		S,H												A1/18651	
18.4;8.3		??			2.0	9.9								A1/18652	VEINS
18.5;6.7		S,L												A1/18653	
18.9;9.4		SH													
19.1;8.6		SH												A1/18654	
19.1;6.9		D.O			3.0			5.0	5.0					A1/18655	
19.2;3.8		SH												A1/18656	
22.6;5.2		S,H													
22.7;7.4		S,H												A1/18657	
22.9;5.7		XS,H			7.0			5.0	5.0					A1/18658	
23.0;4.9		XB,H			4.0			9.9						A1/18659	0.0
23.1;2.5		D.O			4.0			5.0	5.0					A1/18660	
23.2;6.2		S,L												A1/18661	
27.1;6.5		S,H													
27.2;5.6		SH												A1/18662	

KOSMINSKY HILL WEST KHW DDH 4

DUNDAS, TASMANIA — DRILL LOG — PROJECT — DATE 1/96

COLLAR COORDINATES N ..... E ..... R.L. 331.7 ..... AZIM. 51° AMG DIP -60° ..... LOGGED BY .....

396197

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
38.72		CG	Er	4										
40.85		MG			1.5				99					A118699
43.29		MG			0.2	99								A118700
45.73		MG												A118574
46.34		MG			0.5			99						A118575
49.09		??												SIDERITE
206.49		SE	Es											
209.45		??										S.G. - C.A.R.B. P4		
210.37		??			2.0	0.5	0.5	9.0						A118576
210.98		??			0.2			99						A118577
212.50		??			7.0	8.0			2.0					A118578
214.02		??												A118579
214.94		??												
270.27		SS	Ec											
271.04		SS												A118580
273.34		SS			2.0				99					A118581
271.95		SS			0.1	99								A118582
279.05		SS												
279.27		SS												A118586
279.93		SS			9.0			2.0	8.0					A118587
281.10		SS												A118588
282.01		SG			0.5	99								A118583
283.54		SS												A118584
284.15		SS												A118585
327.56		SS												

[redacted]

DUNDAS, TASMANIA — GRANDPRIZE BH 3 — DRILL LOG — PROJECT — DATE 197

COLLAR COORDINATES N 5365310mN E 368505mE R.L. 338.4m AZIM. 270°AM DIP -30° LOGGED BY

396198

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE NR	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
35.98		S.T	Cfe	2											S.T GW-CG
64.94		C.G		3											
79.27		S.L		1											S.L S.T
82.32		S.L		1	0.5	9.9								A161705	S.L S.T
82.62		F.T		4										A161706	G.C S.S AM C.S
83.38		G.W	Cfe	1	0.5	9.9								A161707	G.W-C.G PY
84.76		G.W												A161708	G.W-C.G PY
88.11		G.W												A161709	G.W-C.G
100.46		G.W													G.W-C.G

[redacted]

GRANDPRIZE BH 1A

GRANDPRIZE BH 1A

DUNDAS, TASMANIA — DRILL LOG — PROJECT — DATE 198

COLLAR COORDINATES N 5365000mN E 368385mE R.L. 343.0m. AZIM. 089°MG DIP -50° LOGGED BY

396199

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
18.90		CG	Cfe	2											ST, GW-CG
21.65		ST		2	TR									A161702	
26.52		SE	FS	2	TR	50		50						A161703	GOSSANOUS
27.74		SE		1	60									A161704	
100.76		SE													

DUNDAS, TASMANIA KADI BHZ — DRILL LOG — PROJECT — DATE 1/99

COLLAR COORDINATES N 5366300 N E 370300 mE R.L. 411.5 AZIM. 259°M DIP -55° LOGGED BY

396200

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh			
365		??												
369		SL												
378.0		FT												A16172
411.6		FT												A16172
423.6		FT												A16172
856.7		SE										DC P4		
1051.2		DC										DC P5		56
1161.6		SE										DC P4		

KAPI BHI

KAPI
BHI

DUNDAS, TASMANIA DRILL LOG PROJECT 1 DATE X-200

COLLAR COORDINATES N 5366320mNE 370395mE R.L. 396.3 AZIM. 259°MG DIP -50° LOGGED BY

396201

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES							ALTERATION	FAULT	SAMPLE Nº	
					TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh				
3.05		??	ES												
27.13		SL													
28.05		FT												A16171C	
56.71		SE										DC P3			
57.93		SE										DC P3		A16171I	
60.98		SE			9.0	8.0					2.0	DC P3		A16172	
64.63		SE										DC P3		A16173	
65.55		SE			4.0	9.9						DC P3		A16174	
71.04		SE			0.5	9.9						DC P3		A16175	
78.66		DC										DC P5			SE
80.18		DC										DC P5		A16176	SE
81.40		DC			0.5	9.9						DC P5		A16177	SE
82.32		DC			0.1	9.9						DC P5		A16178	SE
82.62		SE										DC P4			
86.89		SE										DC P2 CA/P2			

201

DUNDAS, TASMANIA — RAZOR BACK BH 3 — DRILL LOG — PROJECT [redacted] — DATE [redacted]

COLLAR COORDINATES N 5363870mN E 369280mE R.L. 314.0 AZIM. 248°M DIP -46° LOGGED BY

396202

DEPTH TO	REC.	LITH.	STRAT.	OXID'N.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº
7.62		??	GS	4								S.B - P.3		A161731
19.82	0.0	[illegible]		0										
21.54		B.F		4								0		
28.35		D.O			TR	4.0		3.0	3.0			G.A - V.2		
28.96		X D.O												
30.18		D.O												
30.44		D.O			1.5	1.0		9.0						A161732
32.01		D.O		0	0.0									A161733
35.06		D.O		3										A161734
38.69		D.O												
41.46		D.O		3								S.Q - P.2		A161735
43.45		D.O		3 [illegible]										
43.75		D.O		1	4.5	6.0			8.0	2.0				A161736
46.19		D.O												
59.15		D.O			TR	5.5					4.5	T.A - P.3		
61.36		D.O			TR	9.9								
66.29		D.O			TR	5.0				2.0	3.0			
69.21		T.A										T.A - P.5		
79.27		T.A										T.A - P.5		

ALTERATION	FAULT	SAMPLE Nº	
			GOSSAN
			T.A
			MAGNETITE
			MAGNETITE
			MAGNETITE
			MAGNETITE
			MAGNETITE
			MAGNETITE
			D.O
			D.O

[redacted] RAZORBACK [redacted]

DUNDAS, TASMANIA — RAZORBACK BHZ — DRILL LOG — PROJECT J — DATE X202

COLLAR COORDINATES N 5363780mN E 369265mE R.L. 307·9m AHD AZIM. 270°M DIP −43° LOGGED BY .....

396203

DEPTH TO	REC.	LITH.	STRAT.	OXIDN	SULPHIDES: TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº
12·20		SE	GS	4										
18·29		SE		3									SD SS	
23·48		SE		4										
31·71		SE		1								DO-P2		
36·28		SE		3										
39·02		SE		4								DO-P1		A161728
41·46		SE		4	80									A161729 GOSSANOUS
44·21		SE		4										A161730
47·26		SE		4	5	2					90	SQ-P1		MASSIVE
59·45		DO		1	TR	20					80	SQ-P1		MAGNETITE
66·08		DO		3										
67·07		DO												
69·51		DO												

RAZORBACK

DUNDAS, TASMANIA — RAZORBACK (BH1) — DRILL LOG — PROJECT — DATE 203

COLLAR COORDINATES N 5763690mN E 369310mE R.L. 286.6m AZIM. 299°M DIP -30° LOGGED BY

396204

DEPTH TO	REC.	LITH.	STRAT.	OXIDN.	SULPHIDES TOTAL %	Py	CPy	Ga	Sp	Asp	Ryh	ALTERATION	FAULT	SAMPLE Nº
3.6:5.9		S,E	ES	4										
4.1:1.6		C,L		4	TR	9.9						D.O - P.4		
4.3:5.9		D.O		2								C.A V.2		
4.7:2.6		C,L		3	TR	TR					5.0	D.O - P.3		
5.0:9.1		D.O		2	T.R	5.0					5.0			
5.2:1.3		D.O		6								C.A V.1		A1617228
5.5:1.8		D.O		6	1.0						9.9	C.A V.1		A1617233
5.7:3.2		D.O		1	2.0						9.9			A1617246
5.9:4.5		D.O		6	Tr							C.A V.0		A1617255
6.0:6.7		D.O		4	0.5						9.9			A1617266
6.2:8.0		S.E	ES	6	0.2						9.9	D.O - P.4		A1617277
6.5:2.4		S.E		0								Q.V - C.A V.2		
6.5:5.5		S.E		0	T.R						9.9	D.O P.4		
6.8:9.0		S.E		6								D.O P.3		
8.2:3.2		X,S,E		2										
8.2:6.2		X		0										
8.3:8.4		X,S,L	EA	0										

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396205

APPENDIX VIII

VLF SURFACE IMPEDANCE MEASUREMENTS AT ZEEHAN

See accompanying report

THIEL, D.V., 1983 : VLF SURFACE IMPEDANCE MEASUREMENTS AT ZEEHAN

UNPUBLISHED REPORT 3/83 OF THE RADIO SCIENCE UNIT OF THE SCHOOL OF SCIENCE AT GRIFFITH UNIVERSITY

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REPORT 3/83

RADIO SCIENCE UNIT

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School of Science, Griffith University, Nathan, 4111, Australia

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396207

VLF SURFACE IMPEDANCE MEASUREMENTS AT ZEEHAN

DAVID V. THIEL

ABSTRACT: This is the preliminary report of results obtained during a visit to the CSR Limited exporation site at Zeehan (Tasmania) in November, 1983. Topics covered include the calibration and evaluation of a recently constructed surface impedance meter, an investigation of the angular dependence of surface impedance measurements and the input impedance of a thin horizontal wire antenna lying on the earth's surface. Should additional data processing reveal additional information then another report will be issued.

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1. Objectives

2. Calibration

3. TSIM Profiles

3A *Curi Grid*

3B *Carbine Grid*

3C *Howards Road Grid*

4. Dependance on Measurement Angle

5. Antenna Impedance Effects over an anisotropic ground plane

6. Apparatus and Techniques

6A *EM16R Resistivity Meter*

6B *TSIM Operation Notes*

7 Conclusions

Acknowledgements

References

Appendix: Raw Data listings.

Figures

1. OBJECTIVES

In 1979, a new technique of measuring the surface impedance of the earth was reported (Thiel, 1979). The technique involved the measurement of the horizontal magnetic and horizontal electric field components of the radiation field from distant very low frequency (VLF) transmitters constructed for the purpose of navigation and submarine communications. The initial measuring instrument was mounted in a vehicle but later altered for portable ground use (Thiel, 1981). In 1982-83 the instrument was completely redesigned and first tested in the field at Zeehan in November, 1983. This field test is the subject of this report.

The field trip was undertaken with a number of well-defined objectives. These were:

(a) To calibrate the device using results from a Geonics VLF EM16R resistivity meter as a standard;

(b) To evaluate its performance as a prospecting tool by profiling the surface impedance over a number of pegged and mapped grid lines;

(c) To investigate the effect of the angle of measurement over a non-uniform earth plane;

and (d) To check the influence of ground conductivity on the input impedance of a thin wire antenna.

These have all been discussed in separate sections in this report. Some discussion about the general performance of the new instrument (designated TSIM in this report) and a comparison with the EM16R has also been included.

2. CALIBRATION

The Geonics EM16R resistivity meter uses a field procedure of audio nulling in order to determine the apparent resistivity and the surface impedance phase angle of the local earth. This device uses a multiturn ferrite core loop antenna for monitoring the horizontal magnetic field and a 10 meter balanced electric dipole wire antenna pegged into the ground at both ends for the electric field measurement. The TSIM uses a similar magnetic field antenna and a 7 m thin insulated horizontal wire unbalanced monopole antenna for electric field measurements. Both instruments are capable of using the North West Cape (W.A.) transmitter for measurement of these parameters at 22.3 kHz. Mr D. McNeill (Managing Director of Geonics Ltd) explained that the EM16R was calibrated by calibrating the loop antenna in a helmholz coil and the electric field by direct theoretical calculation. The EM16R derives the resistivity ρ using the equation

$$\rho = \left|\frac{E_x}{H_y}\right|^2 \frac{1}{2\pi f\mu} = \frac{|Z|^2}{2\pi f\mu} \qquad (1)$$

and it is on this basis that the calibration of the TSIM was undertaken. Equation (1) is based on the assumption that the conduction current in the earth is much larger than the displacement current i.e. the earth can be regarded as a good conductor. This assumption is usually well justified.

The calibration procedure simply involved dual measurements using the EM16R and the TSIM at a number of locations having a different surface impedance. The resistivity reading ρ was plotted as $\sqrt{\rho}$ for direct comparison with $|Z|$. Both the surface impedance

and the phase angle measurements have been plotted in Figures 1 and 2. In general, one can conclude that there is a linear relationship between the outputs of the two instruments.

There are three reasons why results from the two instruments are significantly different:

(a) Poor EM16R probe contact with the ground. This would result in abnormally high readings of resistivity.

(b) Vertical field coupling into the TSIM. This would result in abnormally low readings of resistivity.

(c) Variations in the effective length of the TSIM antenna or the probe spacing of the EM16R. These would both result in abnormally high readings.

The variation due to (c) is estimated to be less than 5% of the length and so less than 2% of the resistivity. Assuming a vertical to horizontal electric field strength ratio of 100 to 1 then for a 7m wire a 5% change in field strength recorded would require a vertical displacement (i.e. height off the ground) of 5 mm. Thus an elevation off the surface over the entire length of wire of 5 mm will result in a 2% change in resistivity. It is important to note however, that if the end of the wire lies on the ground, this effect is cancelled out. Thus, the end of the wire must rise 5 mm. This is indeed likely but resistivity variations of 50% are not possible owing to the care taken to lie the wire antenna on the earth. The large variations between the EM16R and the TSIM are thought to result from poor probe contact as the EM16R readings are much larger than the equivalent TSIM results. For this reason these abnormally high readings have been excluded from the calibration calculation and have not been included on the phase plot (Figure 2).

As a general rule, the conversion equations are

$$\sqrt{\rho} = 10 \, |Z|_{TSIM} \tag{2}$$

and

$$\phi = 90 - \phi_{TSIM} \tag{3}$$

It is important to note also that, in general, the scattter in phase measurements is far greater than the scatter in resistivity and that the phase can be most accurately measured when its value lies in the vicinity of 45 degrees. Equations (2) and (3) have been used throughout this report to convert raw data to resistivity and phase.

3. TSIM PROFILES

CSR Limited has a number of active exploration leases in the Zeehan (Tasmania) area and TSIM was used along a number of grid lines in this area. In this report, CSR grid references are used so that a direct comparison can be made with previous exploration tools used in the area. These include Geonics EM16 (VLF EM) inphase and quadrature data (the magnetic field tilt technique), drill hole analysis, and soil geochemistry. A standard presentation format has been used for ease of comparison with CSR reports.

The predominant strike of the region lies in a north-south direction and all grid lines used were oriented perpendicular to this, i.e. east-west. This means that variations along a grid line are extremely rapid and a measurement spacing of 10 metres is desirable. This was not always possible, owing to the density of the vegetation. Geophysical measurements will change rapidly with distance also, because the dip angle is always close to 90 degrees and the depth of overburden was quite shallow (ranging from 0.5m to 3m).

The direction to the North West Cape transmitter requires a TSIM measurement angle of 35 degrees to the grid line. As the strike is due north the observed response is 43% less (i.e. cos 55) than the maximum response obtainable if the strike lies parallel to the transmitter direction. This is true in all VLF measurement techniques (i.e. VLF EM, EM16R and TSIM). Surface impedance (and so resistivity) measurements can be interpreted in an absolute sense and so do not require a profile along the path for interpretation. Thus, a high or low surface impedance value is a direct measure of the local

resistivity and can locate nearby conductors, whereas the VLF EM tilt technique requires a "cross-over" for interpretation. The TSIM with its 7 m antenna and the EM16R with its 10 m probe separation result in an average resistivity value over that length, and interpretation of the following profiles should be performed with the assumption that the distances are only accurate to within 10 metres.

The soil geochemical anomalies refer to locations specifically referred to as anomalous in previous CSR reports. No discussion about why such zones were considered anomalous has been included. The drill hole information was obtained from two drill holes (CG1 and CG2) in the Cuni area. Again all of this information has been previously reported. The interpretation of the VLF EM (tilt) profiles, however, has not been discussed previously, although the measurements were made some time ago. The EM16R and TSIM measurements have not been reported previously.

The interpretation of these profiles must be in the light of previous work on the area reported in CSR reports, as these details have not been included here. Ideally, the resistivity value should be very small immediately above a conductive ore vein and should also coincide with a VLF EM cross-over. In order to obtain a linear scale, the resistivity has been plotted as $\sqrt{\rho}$ for both TSIM and EM16R results.

3A CUNI GRID

This area was generally flat and swampy, covered with ti-trees. It is the site of a number of old mining excavations and tailings dumps where massive copper-nickel ore, silver and lead had been taken

(Macnamara, 1983). The VLF EM profiles between 7100E and 7300E are remarkably similar on all of the grid lines, indicating a relatively unchanging structure from 7793N to 7450N.

7793N: This grid line was chosen as it was closest to the intersection of mineralization of drill hole CG2 (collar location 7782N, 7076E) and directed roughly NNW. Results are given in Figure 3. No soil geochemistry or VLF EM information was available along this line; however, VLF EM data from two adjacent lines (7890N and 7700N) have been included on the diagram. General features on these two lines are common to both apart from the inphase crossover located at 7000E on 7700N. This corresponds closely to the CG2 intersection of mineralization at a depth of 60 m. From this crossover the estimated depth to the top of the ore vein is 20 m (This procedure is given in Section 6). The TSIM profile shows a remarkably low resistivity along the entire path. One of the lowest readings is evident close to the drill hole mineralization. The phase reading at this point is approximately 50 degrees, indicating that the feature is relatively close to the surface. The low resistivity result at 6950E has a phase of 45 degrees, and so must result from a feature that breaks the surface. This is thought to result from the presence of a water filled mine tunnel. The resistivity minimum at 6840E is unexplained, but again is expected to be a near surface feature.

7485N: This grid line lies in the vicinity of drill hole CG1 (collar location 7357E, 7485N), which has 3 mineralization intersections. Only two of these intersections were identified as soil geochemical anomalies, indicating that the centre vein does not project to the soil-bedrock interface. The TSIM resistivity is very low immediately

above the mineralization intersection at 7300E and, while decreasing slightly in the vicinity of the second, there are insufficient points on the profile for a conclusive statement. The decrease in resistivity at 7180E appears to have no parallel indicators. The phase at 7300E is approximately 45 degrees, indicating a near surface feature, whereas at 7180E the phase is 50 degrees, indicating a conductor a little deeper. Taking the 7100E to 7280E VLF EM inphase profile, the depth estimate to the top of the conductor is 80-100 m. This lies beneath the existing drill hole.

7450N: Results for this grid line are given in Figure 5. The TSIM and EM16R profiles have two significant minima, which occur precisely at the location of the reported soil anomalies along this grid line. These also correspond to the first and third drill hole mineralization intersections. Once again, the vegetation was too dense to enable measurements in the vicinity of 7260E where the second intersection occurs. At the two other intersections, the TSIM phase is close to 45 degrees, indicating near surface mineralization. In the profile the TSIM exhibited its highest readings for the Zeehan area. These occur in the vicinity of an uninterpretable VLF EM inphase feature. The dramatic difference between the EM16R and TSIM resistivities is thought to result from poor probe contact of the EM16R.

Conclusions:

TSIM profiles appear to have located positions of anomalous soil geochemistry and subsurface mineralization as indicated by drill core analysis. At locations where the mineralization lies close to the surface resulting in a soil geochemical anomaly, the phase reading

is approximately 45 degrees. At locations where the mineralization does not reach the surface (i.e. no soil geochemical anomaly), the resistivity is still low, but the phase is significantly higher than 45 degrees.

The geophysical evidence suggests that the first and third mineralization veins from drill hole CG1 extend at least from 7450N to 7485N and are evident at the soil-bedrock interface. The second vein from CG1 does not reach to the soil-bedrock interface, but is estimated to extend from approximately 20 metres downwards. The predominant feature in the VLF EM profiles from 7100E to 7300E - and evident on all profiles in this report - is an inphase crossover at approximately 7180E. The only TSIM reading in this vicinity is on the 7485N grid line. Both suggest a conductor at some depth - too deep to be evident in drill holes CG1 and CG2. It is suggested that further investigation might be worthwhile by

(a) a careful geochemical analysis of both drill hole cores at the intersection of 7180E for fractures and/or low grade mineralization;

(b) TSIM or EM16R measurements at these locations on all grid lines;

(c) Inspection of VLF EM profiles to the north and south for further evidence of the rather shallow inphase crossover feature;

(d) Down hole geophysical logging in CG1;

and/or (e) A drill hole following CG1, but commencing 100 metres further east.

3B CARBINE GRID

Measurements were made over path number 5 and are shown in Figure 6. This path was selected because the VLF EM profile using the Japanese VLF transmitter as a source (NDT frequency 17.4 kHz, bearing angle N 8°W) had exhibited very dramatic changes. The path was located on the south-eastern slope of a steep mountain covered in relatively dense rainforest. A DIGHEM anomaly had been located some years earlier.

The TSIM and EM16R profiles both show very low resistivity values in the vicinity of stations 32 and 36. Unfortunately, the terrain prohibited making measurements between these two points. The very low resistivity values indicate the presence of a conductive region in the vicinity of these points. The remarkably high phase values indicate that this conductor lies at considerable depth. The very high resistivity value obtained at 38.4 was located on top of a tailings dump. This explains the very high resistivity. It is possible that the mine tunnel filled with water, is located immediately under the grid line and is the cause of the very low resistivity. It is suggested that this anomaly be further investigated by

(a) An VLF EM survey along the path using NWC. The different bearing angle will reduce the very dramatic effect observed and make interpretation easier;

(b) Obtaining TSIM or EM16R measurements between station numbers 32 and 36 to further clarify the profile in this vicinity;

(c) If (a) and (b) provide further supporting evidence, then parallel grid lines to the north and south be investigated using VLF EM, TSIM or EM16R.

3C HOWARDS ROAD GRID

Measurements were taken along a portion of grid line 55050N and are plotted in Figure 7. This grid path is located in quite mountainous rain forest. Macnamara (1983) reported that most units strike in a northerly direction and tend to dip eastwards, although variations do occur. The VLF EM profile exhibits two inphase crossovers, one at 72330E and 72740E. At 72310E the TSIM exhibits a minimum resistivity with phase at 45 degrees, indicating a near surface conductor. This is thought to correspond to the first VLF EM crossover, which suggests a steeply dipping conductor located at a depth of 20 m. This depth estimate is reenforced by the very narrow minimum in the TSIM resistivity profile. The crossover at 72740E indicates a conductor at a depth of 70 m. The TSIM resistivity shows a broad minimum in the vicinity and a phase of less than 45 degrees. The broad and not-so-deep minimum supports the theory of a deep conductor. A phase angle of less than 45 degrees cannot be interpreted simply to fit this proposal. The resistivity minimum located at 73340E coincides with the highest value of gold (0.2 ppm) obtained with soil geochemistry. Macnamara noted "a wide zone showing spot-high values of gold ..... between 72900E and 73700E" which may be reflected in a region of abnormally low phase. A more likely explanation is that the phase was generally decreasing owing to the battery in the TSIM becoming flat. The device became inoperable at 73380E. This is consistent with the fact that the soil anomaly corresponds to a phase of 35 degrees when all past experience indicates that this should read 45 degrees. As a general comment, the range of resistivity values over this grid is much higher than any of the other grids used in the Zeehan area.

While the evidence presented here is not particularly strong, further investigation should be directed to the anomalies at 72310E and 72710E. Suggested options are expensive and include VLF EM, EM16R, or TSIM profiling over parallel grid lines in the vicinity and drilling.

4. DEPENDENCE ON MEASUREMENT ANGLE

It has been demonstrated recently (Thiel, 1984) that, for a linearly polarized wave incident on an anisotropic earth, the angle of arrival and the angle of measurement are both critical to the surface impedance measured. In the field, particularly in dense vegetation, it is desirable to make surface impedance measurements in the direction of the grid lines rather than in the direction of the transmitter. The purpose of these measurements was to investigate this angular dependence at a location where the resistivity of the earth changes rapidly with distance. The location 7450N, 7360E on the Cuni grid satisfies this requirement (see Figure 5).

In order to carefully examine this effect, the electric and magnetic field strengths were recorded independently and have been normalized and plotted as a function of angle in Figure 8. The equivalent TSIM resistivity, TSIM phase and also the EM16R resistivity and phase are given in Figure 9.

From Figure 8, it is evident that the magnetic field strength varies smoothly with angle and exhibits a minimum value at 95 degrees. The electric field, however, varies in a more erratic way but with a minimum value at 105 degrees. This differs markedly from the ideal behaviour observed by Thiel (1978, 1980). The TSIM resistivity consequently shows a strong dependence on angle, although the phase appeared to be relatively unaffected (This is probably because the surface impedance in all directions has almost the same phase). The EM16R resistivity could not be measured at the very low signal strengths at 90 and 100 degrees. It is interesting to note that its behaviour is significantly different to the TSIM result, rising to a maximum

rather than a minimum at about 90 degrees. The EM16R phase appears to give a phase reversal when rotated through this angle.

It can be concluded that, in this case at least, variations in angle of about 40 degrees result in less than a 20% variation in all plotted parameters and so a 40% variation in the resistivity ρ. If profiling is performed within these limits then these experimental results suggest that performance would be satisfactory. On an east-west grid using North West Cape the angle is 35 degrees at Zeehan and so only just fits this criterion.

5. ANTENNA IMPEDANCE EFFECTS OVER AN ANISOTROPIC GROUND PLANE

It has been claimed (Thiel, 1978) that a short insulated horizontal thin wire antenna located on the earth's surface has an input impedance independent of the resistivity of the earth. This is important for the interpretation of TSIM results as it is essential to isolate the effect of a change in the horizontal electric field strength from a change in antenna impedance. Both yield phase shifts and voltage changes which would confuse interpretation. For this reason, a 10 m balanced insulated thin wire antenna was stretched over the surface of an anisotropic ground plane (7450N, 7360E) and its impedance was measured at 16 kHz, 8kHz and 4 kHz as a function of the angle of rotation. Measurements were made using a small battery-operated impedance meter (Sennheiser ZP3) with digital readout of the magnitude of the impedance. The impedance meter operates on a bridge principle. With the two arms of the antenna attached, the device was rotated through 180 degrees and results were averaged and are listed below.

f	Mean Impedance (MΩ)	Standard Deviation	
16 kHz	202.2	5.4	(2.7%)
8 kHz	320.5	9.1	(2.8%)
4 kHz	603.3	17.7	(2.9%)

It is evident that no significant change was observed. Further to this, the antenna was connected to an AC voltmeter (input impedance 10 M_Ω, frequency response 0-100 kHz) and rotated to examine the directivity of the radio noise in the vicinity. No directivity was observed, and one can therefore conclude that the input impedance of the antenna is independent of its orientation and so independent of the resistivity of the earth.

6. APPARATUS AND TECHNIQUES

6A *EM16R Resistivity Meter*

Owing to some ambiguity in the operating instructions, a number of operating hints have been included here. The instrument operates by measuring the horizontal electric field, using two field probes spaced 10 m apart and a coil magnetic field probe. It uses an audio null procedure to determine the resistivity and phase.

Before the EM16R is attached to the VLF EM, it is necessary to find the direction of maximum field response. This is achieved by switching on the instrument and rotating it about a vertical axis, as with normal VLF EM measurements. Once this has been determined and the EM16R attached, ensure that the EM16R has been switched to the same transmitter. The red-banded lead is pegged towards the transmitter and the other away from it to form a straight line pointing directly to the transmitter. The instrument is laid on the ground, EM16R down, with the long axis of the instrument parallel to the straight line between the probes. Switch on the instrument and set the phase (right side control) to 45 degrees. Adjust the two resistivity controls. The rotary switch almost underneath the instrument selects the multiplier 10, 100, or 1000. Adjust until a null has been obtained between 1 and 25 (red scale). Now adjust the phase for a better null. Readjust the resistivity and phase in turn until a sharp null is achieved. Read the 0 black line from the red resistivity scale and multiply by the value on the multiplier switch. This is the resistivity value. The phase is read directly from the phase control.

In order to check that you have read the device correctly, halve the probe spacing, and the resistivity should decrease by a factor of 4 (i.e. 25% of its previous value). For this reason, it is necessary that the distance between the probes measured along the ground is 10 metres. It may be necessary to avoid crossing fallen trees and grass bundles to achieve this. Any shortening of this distance decreases the resistivity reading.

It was evident that in some cases, a good electrical contact with the ground was not achieved and an abnormally low resistivity reading resulted (see Section 2). In general, however, the instrument performed adequately and a definitive null could be obtained relatively easily using the North West Cape transmitter.

The depth h of a conductive body can be determined from the horizontal distance Δx between the positive and negative peaks in the inphase crossover and are given by the following relationships

Spherical Conductor	$h = \Delta x$
Cylindrical Conductor	$h = 0.86\ \Delta x$
Thin Vertical Planar Conductor	$h = 0.45\ \Delta x$

6B *TSIM Operating Notes*

The surface impedance meter is shown in Figure 10 with the wire antenna coiled around the carry handle. Turn on the instrument and adjust the rotary switch fully anticlockwise. The AMP read-out now displays the magnetic field strength. Rotate the instrument about a vertical axis until the signal strength is maximized, and ensure that the loop antenna is closest to the transmitter. Place the instrument on the ground (handle up) and extend the wire antenna in line with the

transmitter. It is important to ensure that the wire lies along the ground, and it may be necessary to select a location where this is easily achieved and then walk along the wire to press any undergrowth down. The instrument can now be read. Note the AMP reading (H_x), rotate the switch clockwise one postiion. Note the AMP reading (E_y) and rotate the switch clockwise another position. This is E_y/H_x (suitably scaled). Note also the PHASE reading (This is independent of switch position). The reading is now complete. Switch off the instrument (to conserve battery life), wind the wire antenna around the handle and move to the next location. The case of the instrument should be as close as possible to horizontal in the direction perpendicular to the wire antenna.

Generally, H_x will change little and is only dependent on the time of day. If H_x is less than 0.02 then either the transmitter is not operating or the instrument is not correctly orientated. By holding the CAL switch up the PHASE can be adjusted to 180 degrees. If this is not possible then the batteries should be checked. This can be done by rotating the rotary switch through 5 positions and multiplying the AMP by 10. If the reading is less than 8 volts, replace the batteries. This is done by unscrewing the top, gently displacing it from the body of the instrument and exposing the batteries.

During the Zeehan field test it was noted that the ratio E_y/H_x was greater than 1 indicating that the results were over-range. For this reason E_y/H_x was calculated manually. Stability of the signal was ±2 for the least significant digit and proved adequate.

7. CONCLUSIONS

The TSIM was found to be satisfactory. It proved sufficiently robust, sufficiently weather-proof and easy to carry and operate. Some consideration might be given to decreasing the length of the wire antenna so that positioning it is not so difficult. On the most difficult grid (Howard's Road 550500N), 55 readings were taken in 2½ hours over a distance of 1.4 kilometres. On the 7793W grid 15 readings were taken over 50 minutes over a distance of 260 metres. These figures include the walking and location time along the grid. It is generally easier to carry and much easier to orient and read than the EM16R. It is also thought to give more reliable results, as discussed in Section 2. The operating principle of both of these instruments is more easily interpretable than EM16 (tilt) results, particularly in traversing areas where the strike is perpendicular to the profile grid.

The TSIM has successfully located subsurface mineralization veins and/or their associated soil geochemical anomalies. The possibility of profiling along grid lines has been investigated but is still a somewhat vexed question, depending on the angle of incidence and strike direction as well as the orientation of the device. The suitability of the wire antenna has been vindicated.

A number of modifications are under consideration as a result of this investigation. These include adjusting the electronics for direct reading of calibrated resistivity and phase; a shortening of the antenna; increasing the efficiency of the loop antenna; and using a heavier more flexible cable for the wire antenna. Further field work

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is required in order to build up a library of case studies. The ability of such an instrument to determine the strike direction in addition to the resistivity along and perpendicular to the strike is still worthy of further investigation.

As an additional comment, it is noteworthy that Scintrex have recently commenced marketing a VLF-3 instrument which is capable of resistivity measurements but has the added advantage of solid state memory for storage of data and grid point locations and programmable frequency. Very little information on the device is available at this time.

ACKNOWLEDGEMENTS

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APPENDIX: RAW TSIM AND EM16R DATA

LOCATION: Cuni		TSIM			EM16R		Comments
North	East	H_x	E_y	ϕ	θ	ϕ	
7793	6820	46	91	53			
	6830	47	143	53			
	6840	47	21	47			
	6850	47	60	50			
	6860	47	83	51			
	6880	45	109	55			
	6890	45	61	49			
	6910	46	87	44			Mine close
	6930	45	61	48			Road
	6950	45	20	45			Tailings Dump
	6960	44	76	42			
	6990	45	102	40			
	7020	40	21	40			
	7060	47	18	37			
	7080	40	71	32			Drill Site
7485	7180	46	43	40			
	7200	43	45	44	170		
	7220	46	100	54			
	7240	45	65	45			
	7280	43	77	46			
	7300	41	33	48			
	7342	39	142	53	2100		Close to CG2
7450	7100	42	132	56	210	30	
	7120	46	52	43	80	45	
	7155	45	161	52	200	38	
	7180	45	216	56	145	28	
	7275	40	108	54	100	34	
	7300	39	60	43	160	40	
	7330	34	136	42	1330	38	
	7340	31	141	48	1550	34	
	7350	33	173	52	2800	34	

LOCATION: Cuni		TSIM			EM16R		Comments
North	East	H_x	E_y	ϕ	ρ	ϕ	
7450	7360	36	220	52	6000	30	
	7380	33	283	64	5300	28	
	7400	34	314	71	1200	25	
	7430	34	319	72	9200	11	
	7470	39	240	68	260	25	
	7490	45	309	72	3800	20	
LOCATION: Carbine							Grid No 5
	31	45	91	43	330	63	
	31.5	45	37	30	43	75	
	36	44	40	26	43	60	
	38.5	35	233	53	1250	45	
	40	30	180	57	600	45	
	41	32	134	44	110	62	
	44	34	144	47	260	55	
	45.5	36	105	42	200	58	
	48.5	40	238	46	340	50	
	50	39	56	38	90	63	
LOCATION: Howards Road							
55050	72020	29	135	39			
	72055	30	131	41			
	72070	26	230	43			
	72090	30	170	45			
	72120	33	146	47			
	72140	35	137	44			
	72160	32	123	46			
	72180	32	170	42			
	72200	34	121	43			
	72230	35	143	42			
	72260	37	151	40			
	72280	35	145	40			

55050	72300	33	166	43
	72310	37	96	45
	72340	38	176	45
	72360	40	206	41
	72380	39	175	38
	72405	39	116	40
	72420	41	149	42
	72460	42	198	38
	72480	43	175	38
	72500	43	216	40
	72520	43	211	41
	72540	44	149	40
	72560	43	245	41
	72580	42	204	40
	72600	46	240	44
	72620	48	230	43
	72640	45	191	47
	72670	46	183	49
	72710	48	151	45
	72760	46	215	47
	72800	48	244	52
	72820	47	268	51
	72865	48	265	47
	72900	50	244	51
	72910	46	129	50
	72960	47	197	52
	72980	48	220	52
	73000	51	225	50
	73020	50	208	53
	73040	52	163	52
	73060	50	247	50
	73080	52	206	54
	73100	53	191	52

55050	73130	50	245	57
	73170	51	246	54
	73200	52	208	53
	73240	45	201	53
	73260	54	224	50
	73290	52	251	53
	73320	54	187	55
	73350	51	128	54
	73370	50	197	55
	73380	51	219	60

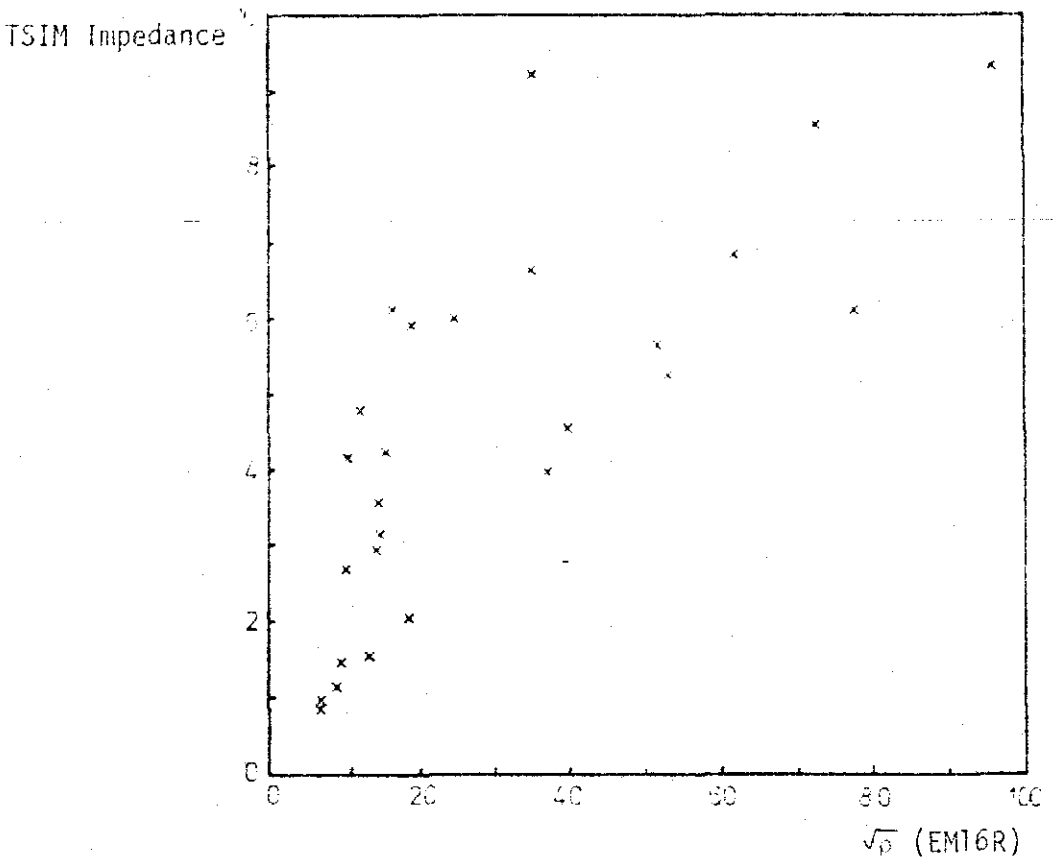

Figure 1: Scattergram to compare TSIM impedance with EM16R resistivity measurements.

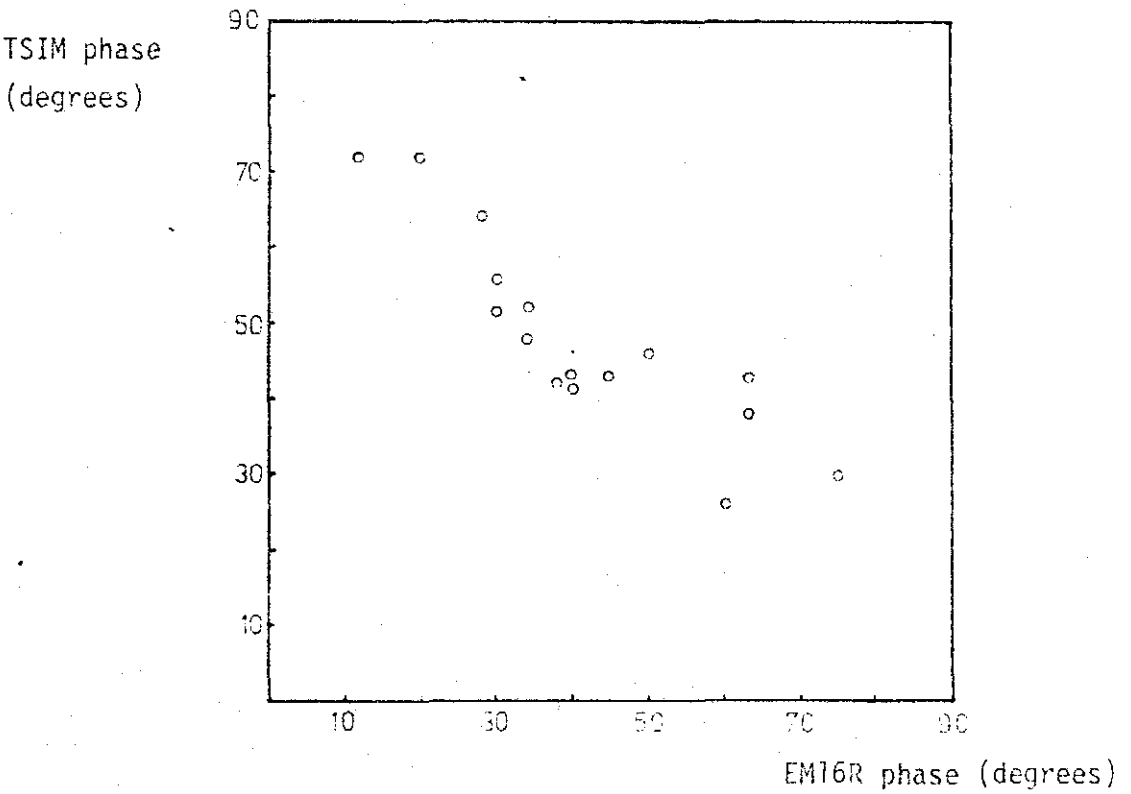

Figure 2: Scattergram to compare TSIM phase with EM16R phase measurements.

Figures 3-7: TSIM and EM16R profiles over a number of east-west grid lines. Discussion of these results is contained in Section 3 of the text. The North West Cape transmitter was used for all measurements except for the CARBINE Grid 5 VLF EM measurements.

TSIM profiles are marked with solid lines; crosses - square root of the apparent resistivity in meters

circles - phase angle in degrees

EM16R profiles are marked with broken lines; triangles - square root of the apparent resistivity in meters

squares - phase angle in degrees

VLF EM profiles were obtained by previous workers using a Geonics EM16 magnetic field tilt device.

crosses - inphase tilt

circles - quadrature tilt

SOIL refers to principal soil geochemical anomalies previously reported.

DRILL refers to mineral intersections projected to the surface and previously reported.

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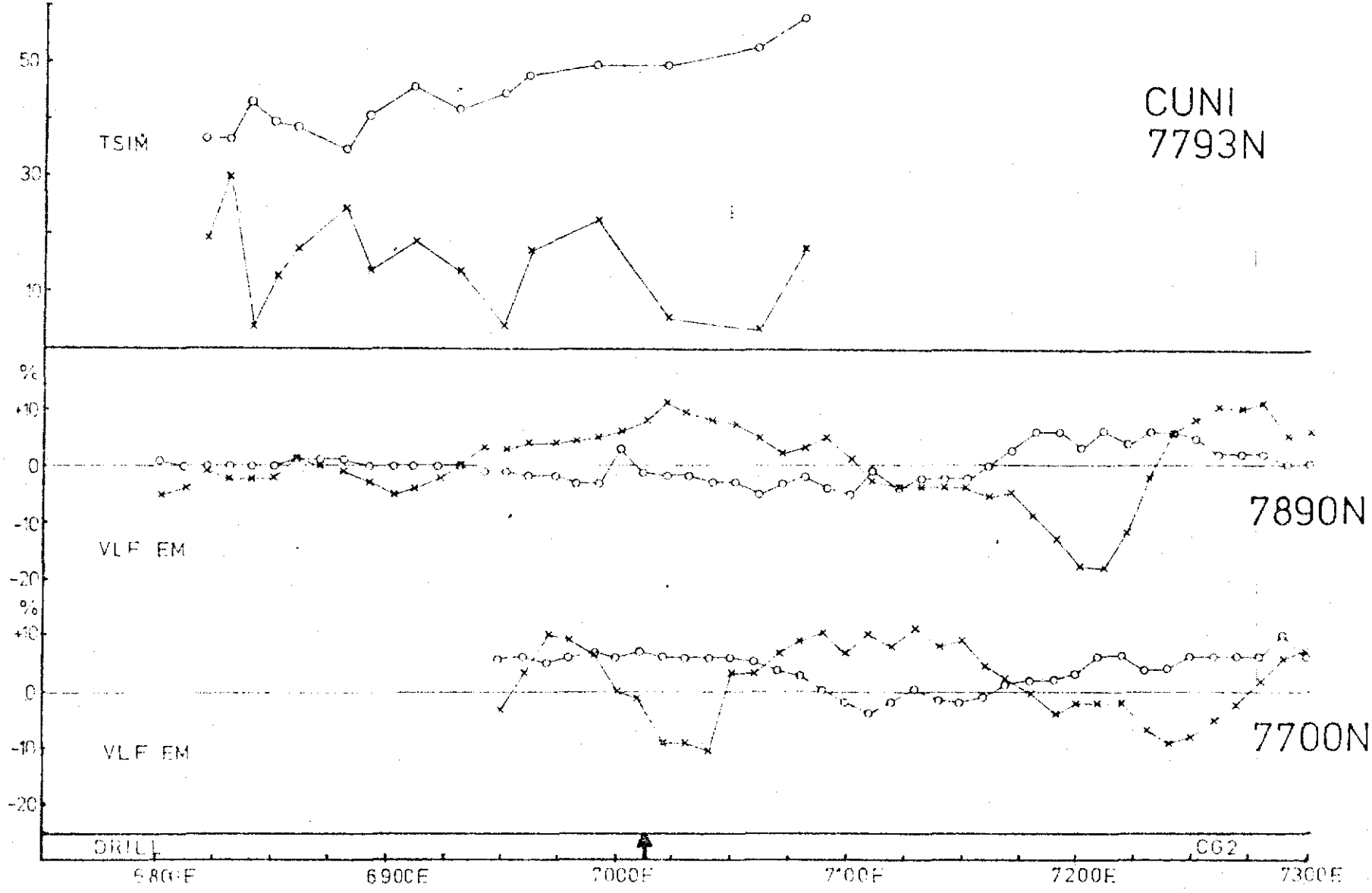

Figure 3

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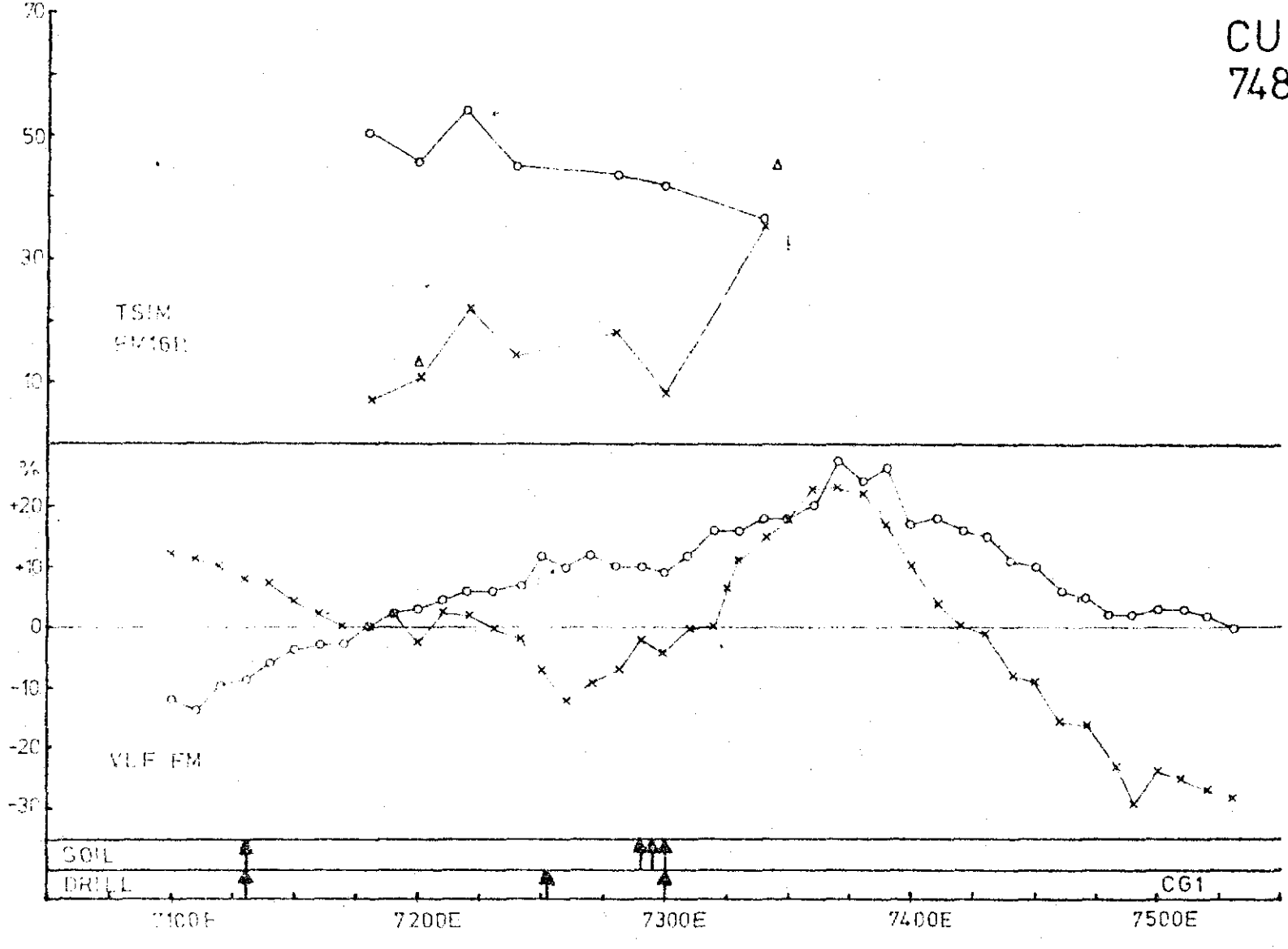

Figure 4

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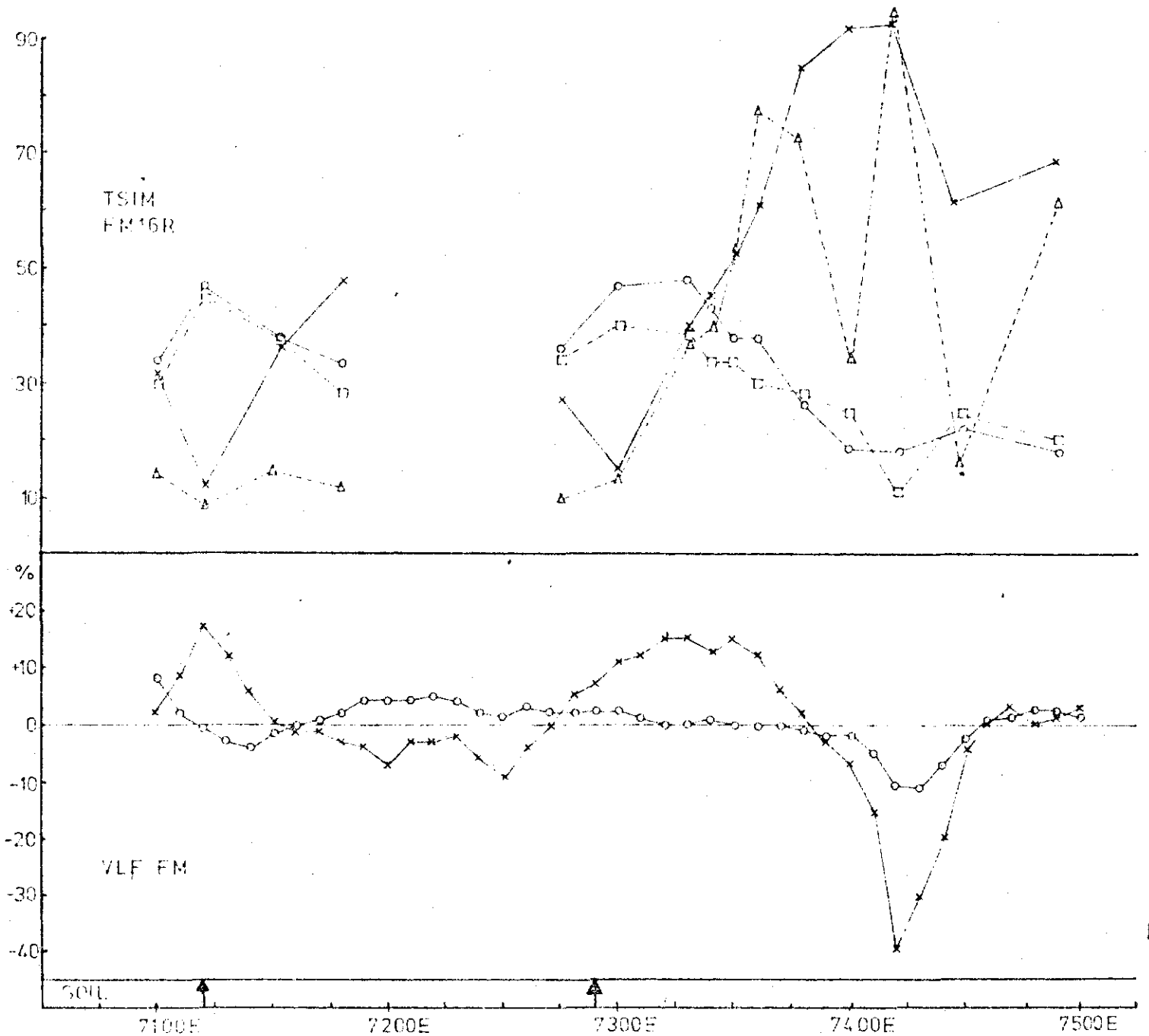

CUNI
7450N

Figure 5

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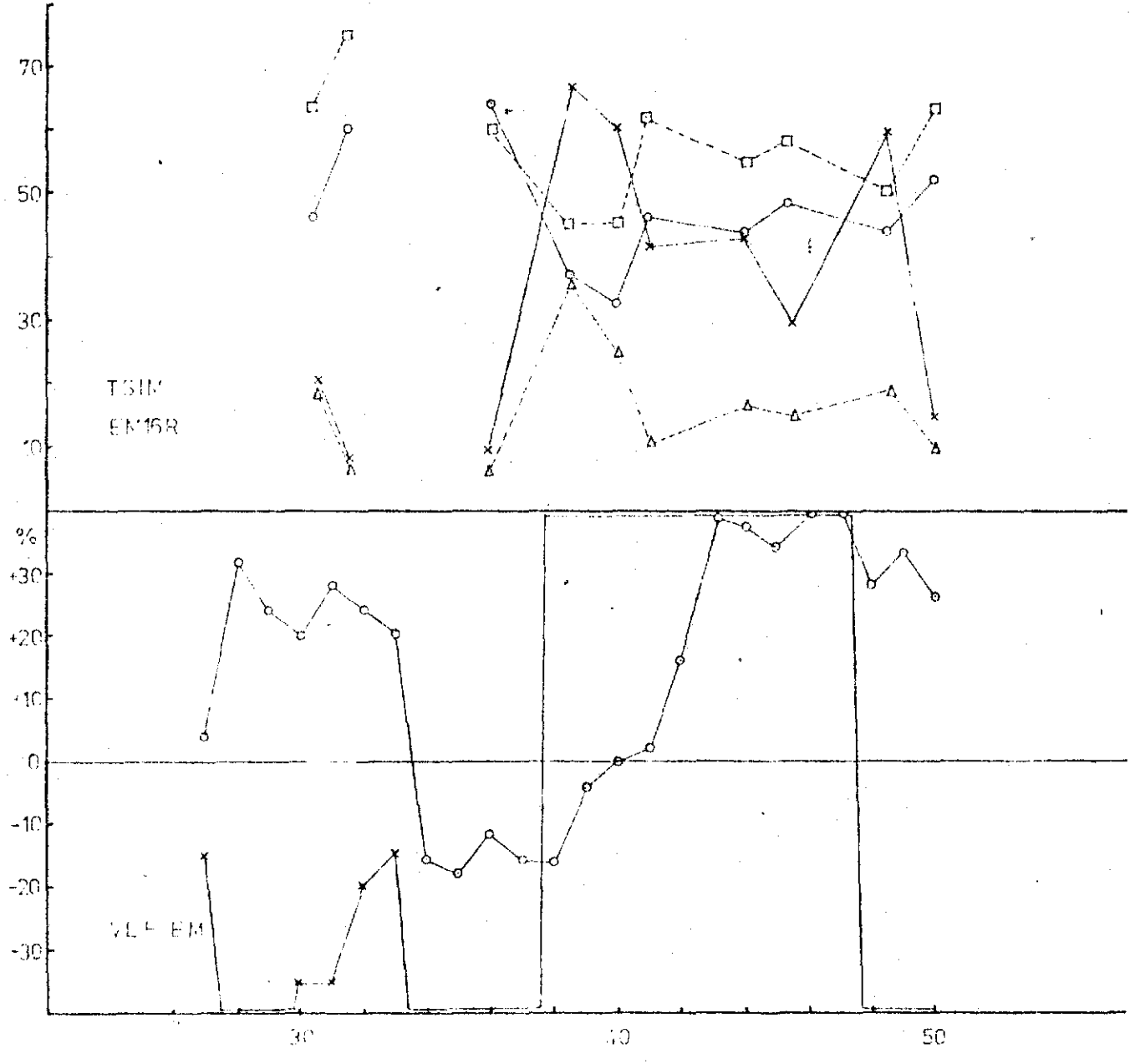

CARBINE
GRID 5

Figure 6

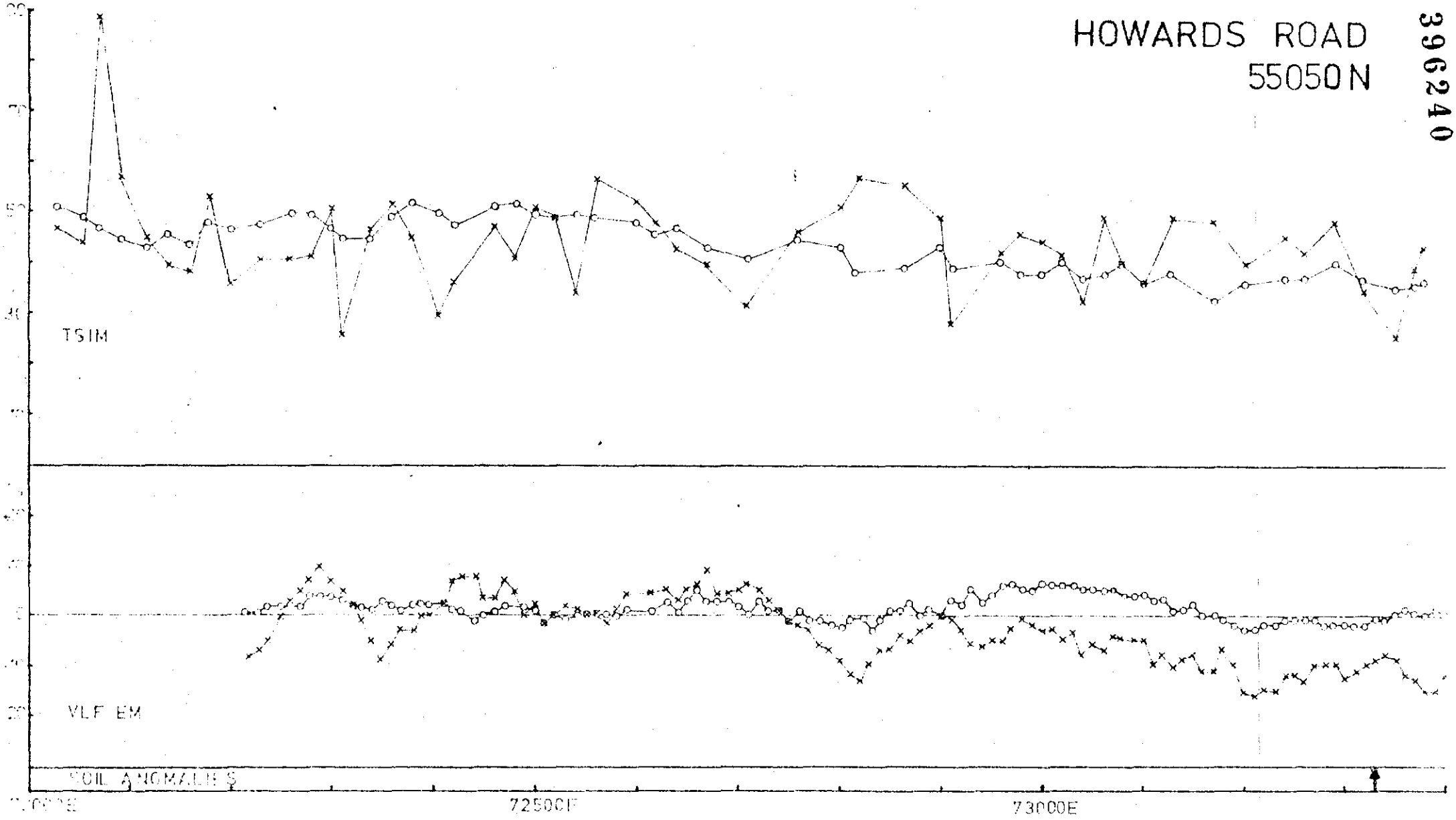

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Figure 7

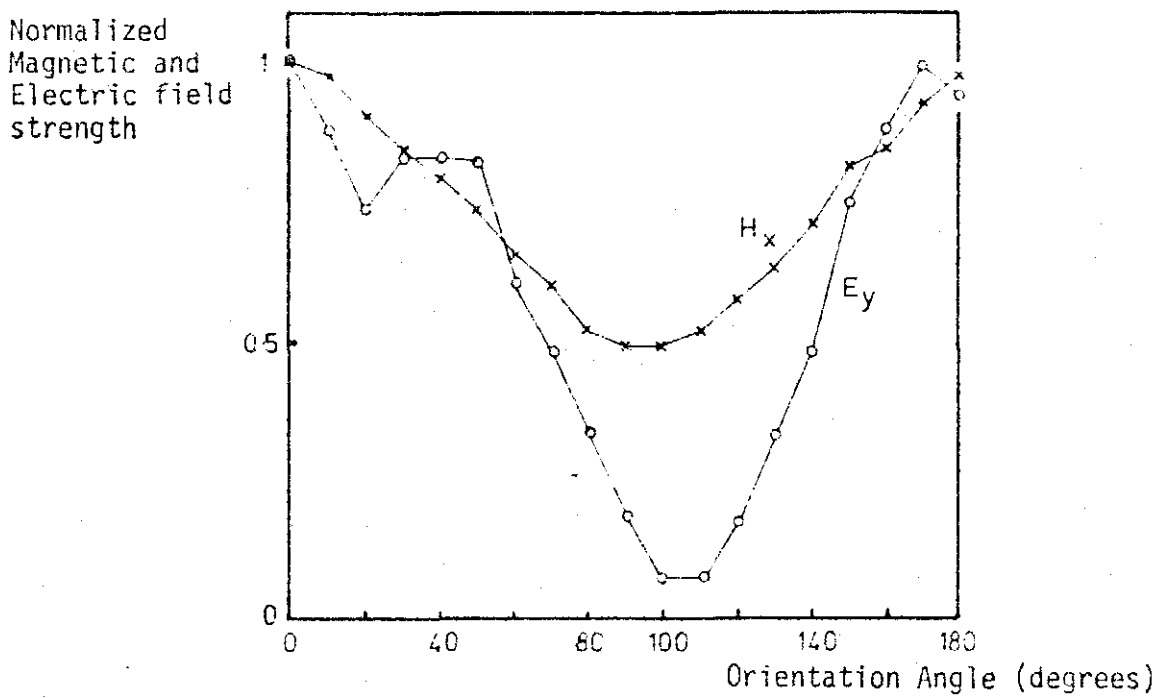

Figure 8: TSIM magnetic (H_X) and electric (E_y) field strength as a function of instrument orientation angle.

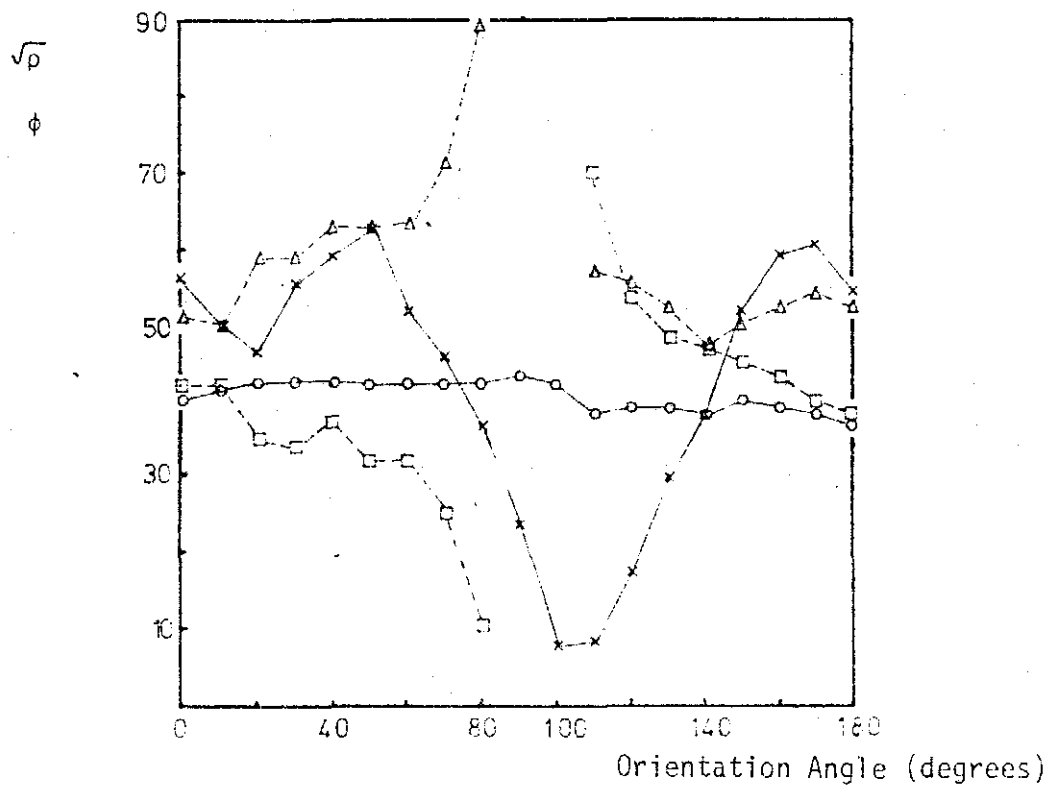

Figure 9: Apparent resistivity (plotted as its square root) and phase angle as a function of instrument orientation

crosses - TSIM resistivity
circles - TSIM phase
triangles - EM16R resistivity
squares - EM16R phase

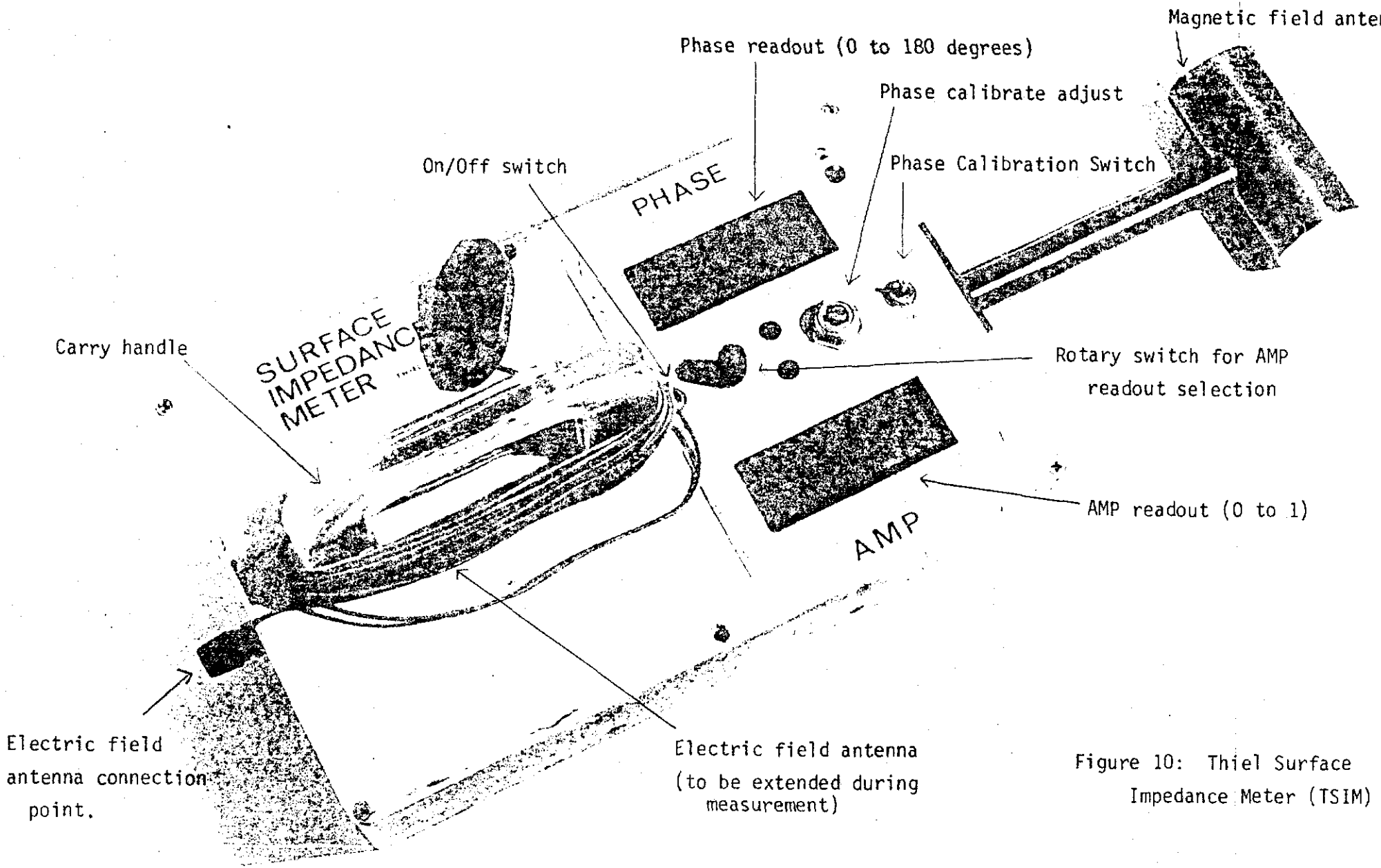

Figure 10: Thiel Surface Impedance Meter (TSIM)

3962242

APPENDIX IX

COMMENTS BY W.J. LANGRON ON THE VLF SURFACE IMPEDANCE MEASUREMENTS

243

396244

Aluminium, Minerals And Chemicals Division

CSIRO

TO P.D. Ellis REFERENCE WJL/sgl/602

FROM W.J. Langron DATE June 28, 1984

TSIM TESTS, DUNDAS, TAS.

I have studied the report written by David Thiel on his visit to the Dundas area and am very impressed with some of the aspects of the TSIM compared with our EM16R. I feel his report could be a good basis for further useful work in the area although our real problem around Zeehan is to differentiate between mineralisation only near surface and mineralisation which may be at surface but which extends to depth. I doubt if any of the VLF techniques will resolve that problem.

The TSIM has one big advantage over our EM16R - you get away from contact resistance effects. One of the spin-offs is that the TSIM is easier to use (the 10 m separation between probes with EM16R would seem to be fairly critical and this may be difficult to achieve in rugged/heavily vegetated country). In the way the results are presented, TSIM would seem to detect more anomalies (related directly to changes in resistivity above a mineralised body) than does EM16R (which relies solely on a "cross-over"). In the examples from Howards Road, TSIM seemed to have performed better, albeit the gold aspect is a bit of a fizzer.

I find some of Thiel's depth estimates a bit optimistic, especially in the light of recent testing (and our discussions thereof) by J.V. partners at Mariposa, Grieves ..... In earlier work near the Comet/Kosminsky Hill I estimated a "skin depth" penetration of 30 m - hence I find a penetration of 70 m for VLF techniques a bit difficult to grasp, especially in zones of such low resistivity. But, as mentioned above, that is not our real problem.

I believe his comments on the Carbine Grid should be considered seriously, especially his suggestion (c). We could have the chance here of a body either topping at depth or extending to depth.

Interpretation of TSIM data also seems easier and to have more possibilities, e.g. in modelling, than does EM16R data. Of course, an obvious test of Thiel's work at Cuni is to drill the deeper hole following CG1; I doubt if CG1 missed significant mineralisation but the situation is very similar (i.e. the top of the body is deep) to that discussed on the Carbine Grid.

I would encourage Thiel to carry out further work, perhaps after we have received the latest round of drilling results and with his improvements effected to the equipment. Comparisons between TSIM and existing EM16 work (e.g. about that outcrop we inspected near Grieves) could be useful, but more particularly, the TSIM may point up deeper mineralisation not indicated by current VLF-EM results.

There are a few matters of technical interest which I intend to take up with him but, by and large, I feel he has made a definite contribution to the exploration scene as well as presenting us with a useful report on his visit to Dundas.

W.J. Langron

cc - REW
- PRG
- RJF
- DJC/File

REFERENCE

QUATERNARY	Q Qra	Alluvium
	Qrg	Gravels
	Qt	Conglomerate talus
	Qt	Dolerite talus
	Qrs	Older alluvium marsh deposits, downwash etc.
	Qpf	Fluvioglacial & lacustrine deposits
	Qpm	Moraine
PERMIAN	P Pt	Zeehan Glacial Formation
DEVONIAN	D Db	Bell Shale
	Df	Florence Quartzite
SILURIAN	S Sac	Austral Creek Siltstone
	Sk	Keel Quartzite
	Sa	Amber Slate
	Sc	Crotty Quartzite
	S	Unassigned
ORDOVICIAN	O Og	Gordon Limestone
	Om	Moina Sandstone
	Oz	Mt. Zeehan Conglomerate
CAMBRIAN	Cm	Misery Conglomerate
	Ccl	Climie Formation
	Cf	Fernflow Formation
	Cco	Comet Formation
	Cfe	Fernfields Formation
	Cb	Brewery Junction Formation
	Cra	Razorback Conglomerate
	Ch	Hodge Slate
	Cr	Red Lead Conglomerate
	Cd	Dundas Group unassigned
	Cc	Crimson Creek Formation
	C	Cambrian unassigned
PROTEROZOIC	P Puo	Oonah Quartzite & Slate
	Pc/Pw	Concert Schist / Whyte Schist
IGNEOUS ROCKS		
JURASSIC	Jdl	Dolerite
DEVONIAN	D Dq?	Quartz porphyry
CAMBRIAN	C Cg	Gabbro, norite and dolerite
	Cs	Serpentinite and pyroxenite

- Stream sediment (M)
- Panned concentrate (P)
- Rock chip, float (R, r)
- Limonite (L)

181 — 182 GEOTERREX BARRENGER SYSTEM AIRBORNE TEST E.M. LINE 1 SE (1978)

MH 208·20 MAGNETIC HIGH AT FIDUCIAL 208·20 ON FLIGHT LINE

EM 206·45 E.M. ANOMALY AT FIDUCIAL 206·45 ON FLIGHT LINE

5 cm

396246

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GEOTERREX E.M. TEST LINES AND DRAINAGE SAMPLE NUMBERS

E. L. 15/76 – North Sheet 245

DUNDAS, WEST TASMANIA

	Qra	Alluvium	
	Qrg	Gravels	
Q	Qt	Conglomerate talus	QUATERNARY
	Qt	Dolerite talus	
	Qrs	Older alluvium marsh deposits, downwash etc.	
	Qpf	Fluvioglacial & lacustrine deposits	
	Qpm	Moraine	
P	Pt	Zeehan Glacial Formation	PERMIAN
D	Db	Bell Shale	DEVONIAN
	Df	Florence Quartzite	
	Sac	Austral Creek Siltstone	SILURIAN
	Sk	Keel Quartzite	
S	Sa	Amber Slate	
	Sc	Crotty Quartzite	
	S	Unassigned	
	Og	Gordon Limestone	ORDOVICIAN
O	Om	Moina Sandstone	
	Oz	Mt. Zeehan Conglomerate	
	Em	Misery Conglomerate	CAMBRIAN
	Ecl	Climie Formation	
	Ef	Fernflow Formation	
	Eco	Comet Formation	
€	Efe	Fernfields Formation	
	Eb	Brewery Junction Formation	
	Era	Razorback Conglomerate	
	Eh	Hodge Slate	
	Er	Red Lead Conglomerate	
	Ed	Dundas Group unassigned	
	Ec	Crimson Creek Formation	
	€	Cambrian unassigned	
P	Puo	Oonah Quartzite & Slate	PROTEROZOIC
	Pc	Concert Schist	
	Pw	Whyte Schist	

IGNEOUS ROCKS

	Jdl	JURASSIC Dolerite	JURASSIC
D	Dqp	Quartz porphyry	DEVONIAN
€	Eg	Gabbro, norite and dolerite	CAMBRIAN
	Es	Serpentinite and pyroxenite	

- Stream sediment (M)
- Panned concentrate (P)
- Rock chip, Float (R, F)
- Limonite (L)

181· 182· GEOTERREX BARRENGER SYSTEM AIRBORNE TEST E.M LINE 15E (1978)

MH 208·20 MAGNETIC HIGH AT FIDUCIAL 208·20 ON FLIGHT LINE

EM 206·45 E.M ANOMALY AT FIDUCIAL 206·45 ON FLIGHT LINE

6 cm

396246

PACMINEX PTY. LIMITED

GEOTERREX E.M. TEST LINES AND DRAINAGE SAMPLE NUMBERS

E. L. 15/76 - North Sheet 245

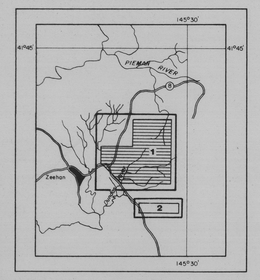
DUNDAS, WEST TASMANIA

SCALE	1 : 10 000
DRAWN	P.M.M. / P.H.
DATE	Jan '79
REVISED	May '81, Oct. '81

K 555 - 6

84-2.161 vol 2/2

LOCATION MAP



Scale 1:250,000

ANOMALY GRADE	EM SYMBOL SYMBOL	MMU RANGE
5	●	28 - 110
4	●	50 - 99
3	●	20 - 49
2	○	10 - 19
1	○	5 - 9
0	·	40 - 4
	Possible conductor	

Identifier	mho value
Depth to conductor in metres: 0-30 30-60 60+	Conductance (Conductivity-thickness) in mhos: 1-5 5-10 10-20 20-40 40+

Note: In lieu of anomalies, survey lines may be annotated with mho values and/or conductor depths

Conductive area. Surface response usually conductive overburden, but includes conductive response from broad expanses of weathered and fractured rock, and from clay or graphite which gathers current from conductive ground.	DIGHEM maps are designed to provide a correct impression of conductor quality by means of the conductance grade symbols. The symbols can be used alone with geology when planning a follow-up program. The actual mho values are plotted for those who wish quantitative data. The anomaly axis and depth are indicated by micropunctuate dots which should not be filled from the conductor patterns, while being helpful to those who want this information. The map provides an interpretation of all conductors in terms of length, strike direction, conductance and depth. The accuracy is comparable to an interpretation from a ground EM survey, having the same line spacing.
Possible surface response	
Culture usually a line such as a fence, power or telephone line, but also includes buildings, etc.	
Possible culture	
Questionable anomaly	
Apparent thickness - in 10m	
Dip direction	
1765 Direct magnetic correlation of 100 gammas	

JOB	DATE	DRAWN BY	CHECKED BY
355	APRIL 82		

Flight line

Fiducials and numbers

DIGHEM^{II} SURVEY

ZEEHAN REGION, TASMANIA

ELECTROMAGNETICS

FOR

C.S.R. LIMITED

SCALE 1:10,000

1/2 0 1/2 1 Kilometres

1/4 0 1/4 1/2 Miles

SHEET 1

396247

5 cm

CSR LIMITED-AMCD

E.L. 15 76 DUNDAS, TASMANIA

DIGHEM EM ANOMALIES & VLF TRAVERSES

246

RL-2161 vol 2-12

SCALE	1:10000
DRAWN	
DATE	
REVISED	P.D.E June '84

DRG. No. K555-46

PACMINEX PTY. LIMITED

GEOTERREX E M TEST LINES AND DRAINAGE SAMPLE NUMBERS

E.L. 15/76 - South Sheet

DUNDAS, WEST TASMANIA

247

SCALE	1:10000
DRAWN	P.M.M. / P.H.
DATE	December 1977
REVISED	Jan '79, May '81, Oct '81

K555-7

EL-2161 vol 2/2

396248