772001

PROJECT A-78-60
GEO366

Cyprus Gold Australia Corporation

GEOLOGICAL REPORT

RETENTION LICENCE APPLICATION:

OCEANA - AUSTRAL

ZEEHAN

TASMANIA

P JONES

MAY 1988

REPORT 574
PART 1

CYPRUS

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SUMMARY AND CONCLUSIONS

This report accompanies a Retention Licence Application by Cyprus Gold Australia Corporation covering the Oceana and Austral prospects.

Exploration within the prospective Gordon Limestone sequence has been modelled on the Irish type carbonate hosted sedimentary exhalative lead-zinc deposit.

Intensive small scale mining was undertaken around the turn of the century for silver-lead veins. The carbonate hosted mines within the Amoco tenement were relatively poor in silver compared to the deposits in basement rocks resulting in lower production. More recent exploration was conducted by Zeehan Exploration leading to the reopening of the Oceana mine in 1954. The mine was closed in 1960 due to falling metal prices and high water inflows.

Precambrian basement sediments are overlain by Cambrian sediments which are localized within graben structures. These are in turn overlain by Lower Ordovician conglomerate. Transgressive upon these units are Ordovician to Devonian basinal units including limestones, dolomites, sandstones, shales and quartzites.

Significant galena-sphalerite mineralization has been encountered from the Oceana and Austral prospects within the Gordon Limestone. Gangue minerals are dolomite, siderite and lesser silica. The mineralization at Oceana is found in two styles: stratiform-syndigenetic material associated with chaotic slump breccias and epigenetic material associated with the possible Oceana feeder zone.

Cyprus conducted gridding, geochemical sampling, geophysical surveying (IP, EM, gravity, magnetics) programs over the major prospects culminating in the drilling of 25 diamond drillholes. Fourteen of these holes were sited on the Oceana prospect and delineated a lead-zinc-silver resource totalling 2.4 million tonnes of 9.2% lead, 4.0% zinc, 73 g/t silver. Significant lead-zinc potential remains untested on the Oceana, Austral and Pyramid grids and these need follow-up diamond drilling.

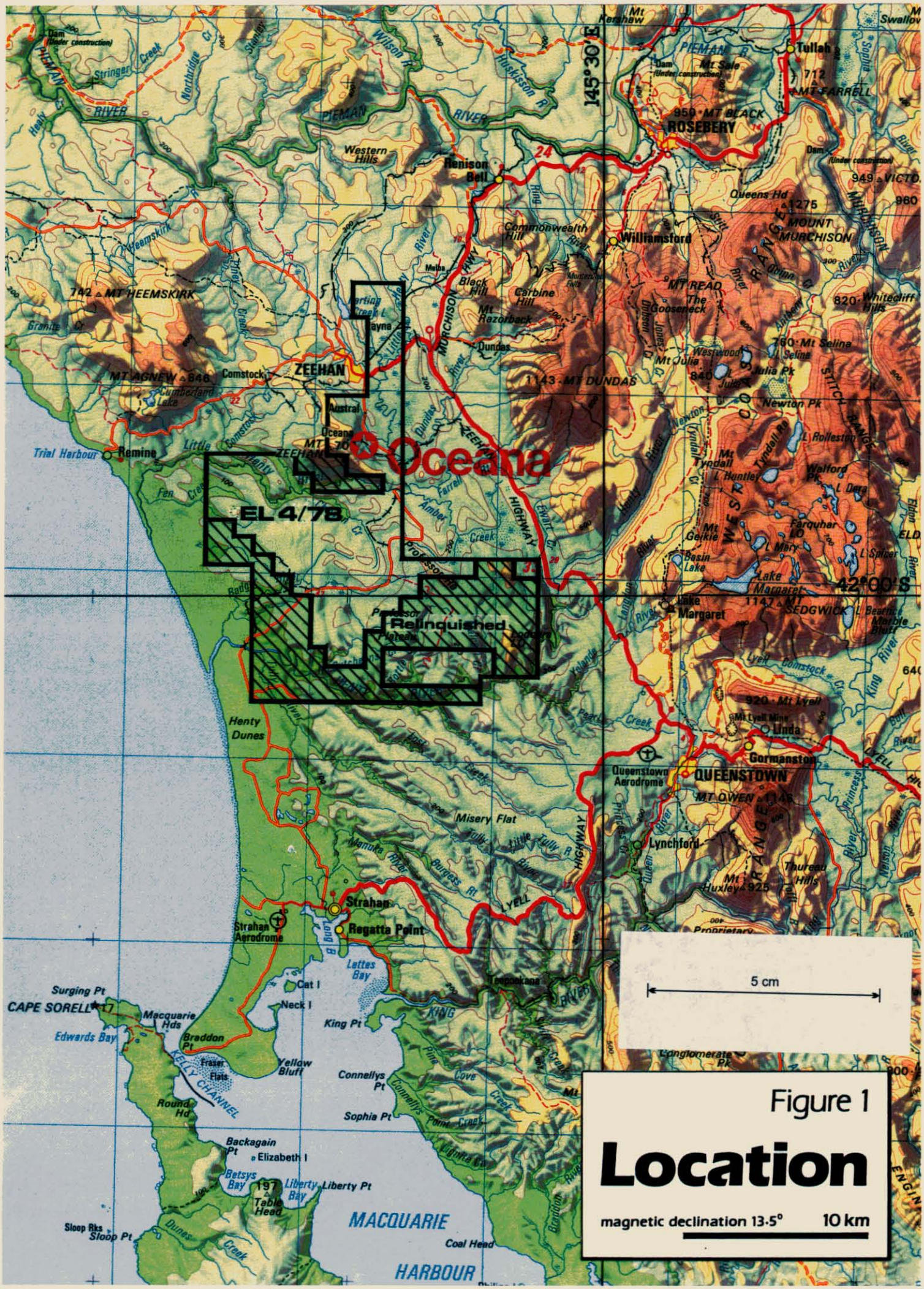


Figure 1

Location

magnetic declination 13·5°

10 km

INTRODUCTION

This report is part of a package compiled by Cyprus Gold, formerly Amoco Minerals, requesting the area outlined by the following co-ordinates:

> Datum 5360000mN:363500mE thence grid south to 5357500mN: 363500mE thence east to 5357500mN:364000mE thence grid south to 5357000mN:364000mE thence grid east to 5357000mN:364500mE thence grid south to 5356000mN:364500mE thence grid west to 5356000mN:362000mE thence grid north to 5357000mN:362000mE thence grid west to 5357000mN:361500mE thence grid north to 5359000mN:361500mE thence grid west to 5359000mN:361000mE thence grid north to 5359950mN:361000mE thence grid east to a point 5360000mN:363000mE thence grid east to the point of commencement;

be granted as a Retention Licence (RL) totalling approximately 8 square kilometers, covering the carbonate hosted Oceana deposit

and Austral Valley mineralization (Enclosure 1). The RL area at present is held under current tenure EL 4/78 but due for relinquishment on July 14, 1988. (See Enclosure A accompanying Part 2 of this Report.)

Four pre-existing Mining Leases are located within the Retention Lease Area.

MLs 38M/77, 39M/77	JNR Enraght - Mooney
60M/77, 4W/77	Electrolytic Zinc Company

Cyprus has negotiated a joint venture with EZ covering their leases which are designed to protect the zinc rich Tasmanian smelter slag dumps.

EXPLORATION PHILOSOPHY

Exploration within the prospective Gordon Limestone sequence has been modelled on the Irish type (Navan, Silvermines) carbonate hosted sedimentary exhalative lead-zinc deposit. These orebodies are structurally and lithologically controlled and are invariably located adjacent to major deep seated basement sutures as well as smaller oblique extension faults which are regarded as the mineralizing feeders (Figure 2). Epigenetic ore zones occur in local dilation zones, en echelon overlaps and bends on these faults and at intersections of these faults with the major basement sutures. Stratiform orebodies are deposited syngenetically-syndiagenetically in small downfaulted basins developed along the strike of the oblique extension faults from the mineralized solutions exhaled from the faults, probably just after a period of fault movement. These same fault movements are thought to be responsible for the coeval initiation of submarine debris flow breccias within the ore horizon.

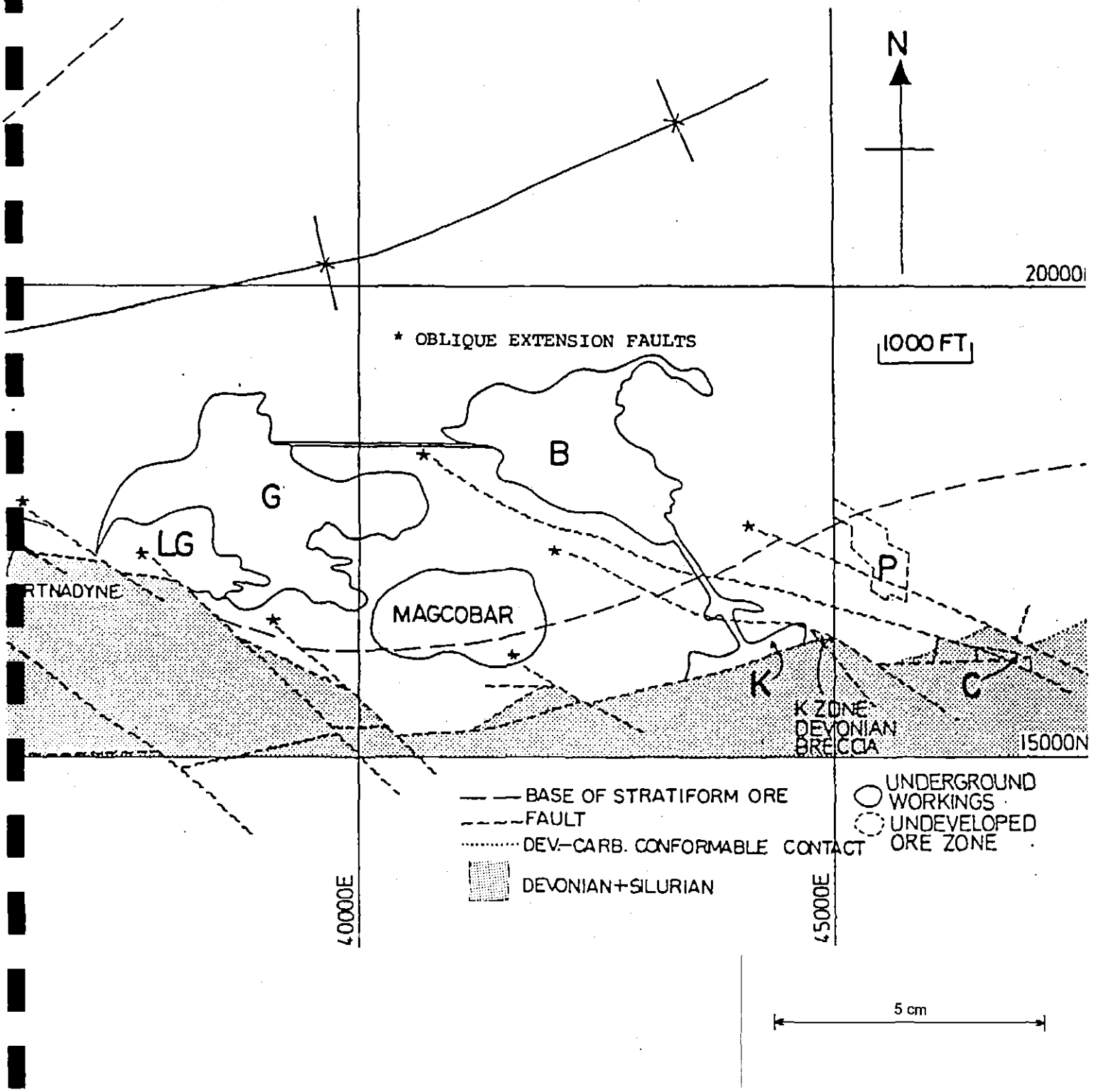


FIGURE 2

Structural plan of the Silvermines Orebody, showing the development of northwest oblique extension faults in the Terminal Dilation Zone of the Silvermines Fault eastnortheast dextral transcurrent shear. Both epigenetic and syngenetic orebodies are shown to be spatially related to these northwest oblique extension faults, which are regarded as the mineralizing feeders. In the Zeehan area the Oceana Fault is thought to be equivalent to these northwest faults, while the Balstrup Fault sinistral transcurrent shear is interpreted as equivalent to the Silvermines Fault.

HISTORY AND PREVIOUS EXPLORATION

Development of the Zeehan silver-lead-zinc mineral field commenced in 1882 after the discovery of gold and argentiferous galena near the present location of the Zeehan Post Office. Further lodes were discovered and mining operations flourished during the following 10 years. However by 1910 the field was in decline due to the exhaustion of shallow ore and following the closure of the local smelter in 1913 all major mining operations ceased in 1919.

There is a direct relationship between the life of each mine and its silver content. The carbonate hosted mines within the RL area were relatively poor in silver compared to the deposits in basement rocks resulting in poor development and lower production figures.

From 1919 until the late 1940's production was restricted to small scale tributary operations in the upper levels of abandoned

mines. However a more systematic assessment of the lead-zinc-silver mines hosted by Gordon Limestone was conducted by Zeehan Explorations (North Broken Hill/Broken Hill South joint venture) during the period 1946 to 1951. Consultant geologist, Loftus Hills, recommended the testing of a number of abandoned workings including those in the Oceana and Austral valleys. The Bureau of Mineral Resources was requested by the joint venturers to conduct gravity and electrical surveys over both these areas delineating anomalies which were later diamond drilled. An initial 5 hole diamond drilling program on the Oceana was successful in outlining significant lead-zinc-silver mineralization which led to the Oceana being reopened in 1954. Subsequent production from 1954 to 1960 yielded some 128,177 tons of ore at 11.6% lead, and 4.8 oz/t silver (146 g/t silver) until the Mine's closure due to a combination of declining metal prices and excessive water inflows (11 million liters/day pumped from the mine). A further subeconomic zone outlined north of the mine grading 5.5% lead over approximately 11 meters failed to be developed. A significant gravity response with associated siderite/dolomite alteration at South Oceana was also poorly explored.

Further workings are located within the prospective limestone sequence encompassed by the RL application. The Austral mine - Flux Quarry area was worked during the period 1909-1913 producing ferromaganiferous gossan flux, assaying approximately 5% lead with 1.5 oz/t silver (46 g/t silver) for the adjacent smelter. A number of shallow shafts adits and drives are observed south of the flux quarry testing a lead-zinc mineralized, black sulfidic carbonaceous pugh zone (decomposed limestone) occurring near the base of the limestone sequence. In 1947-50 Zeehan Explorations drilled 3 vertical and inclined holes near the Flux Quarry, the best intersection being 5 meters of 13% lead.

The Pyramid prospect located southeast and along strike from the Oceana Mine is reported to have been worked to a depth of only 13 meters, producing high grade lead-zinc ore. Five holes drilled by Zeehan Explorations in 1946-51 intersected only one narrow (1 meter wide) mineralized zone assaying 25% lead-zinc. Significant faulting was evidenced from this program.

No further systematic work appears to have been carried out in the Oceana/Austral area until the commencement of Amoco's (now Cyprus Gold) exploration in 1978. Cyprus's target is an Irish style carbonate hosted sedimentary exhalative basemetal deposit.

Subsequent to the mine closing, the Mines Department (Jack 1961) conducted an examination of the available data from the deposit and concluded only minimal tonnage ore remained and that there was little hope of delineating further economic mineralization to the north and south. Jack did however document the deposit's development including compiling cross sections, longitudinal sections as well as producing some basic level plans.

REGIONAL GEOLOGY

The basement complex in the Zeehan area is comprised of Precambrian schists, quartzites, siltstones, shales andesitic and basaltic lavas and pyroclastics which form a stable craton to the northwest of EL 4/78 (Enclosure 2). The Lower Cambrian units such as the Crimson Creek Formation are predominately shallow water volcaniclastic sediments including argillites, grits, tuffaceous arenites and minor dolomites. Cambrian sedimentation appears confined to fault bounded blocks or graben structures.

Reactivation of some of these faults during the Upper Cambrian Jukesian orogeny led to the formation of a series of northwest trending troughs into which Ordovician to Devonian sequences were deposited. Initial sedimentation during the Lower Ordovician was manifest by quartzose and hematitic conglomerates of the Mount Owen and Mount Zeehan type. These are transgressively overlain by micaceous siltstones, tubicolar sandstones, grits and minor sandstones and shales, collectively known as the Moina Formation.

The Moina Formation is overlain disconformably by the Ordovician Gordon Limestone. The disconformity is marked by a discontinuous sheared, quartz pebble conglomerate. Overlying this is the Gordon Limestone sequence which is comprised of interbedded massive to laminar fossiliferous limestones and argillaceous dolomites. Minor chaotic slump breccia horizons and zones of siliciclastic sedimentation are interbedded throughout the sequence. After minor uplift the Gordon Limestone was succeeded disconformably by Siluro-Devonian siliciclastic sediments comprising sandstones, siltstones minor quartzites and doleritic to pyritic shales and siltstones.

Igneous intrusions in the area comprise a late Upper Cambrian transgressive sill of hornblende gabbro in the Crimson Creek Formation of the Comstock area as well as a serpentinized mafic/ultramafic lead-zinc mineralized chromiferous intrusive also in the Crimson Creek Formation at Nubeena, west of North Austral. The large Devonian Heemskirk Granite which outcrops over an area of 130 square kilometers to the west of Zeehan is a prominent feature from which the majority of previous workers attribute the Zeehan silver-lead-zinc vein mineralization.

Extensive Tertiary and Quaternary sand and gravel deposits blanket much of the prospective carbonate unit.

The Zeehan area has been intensely disturbed by the Paleozoic Tabberaberan orogeny which caused major northwest folding and faulting. East and northwest trending fault systems are considered to have been contemporaneous with sedimentation. North-northeast striking faults are thought to have developed in post Permian times and are not common within the Cyprus tenement.

GEOLOGY OF THE RETENTION LICENCE APPLICATION AREA

Precambrian Oonah black shales and quartzites and Cambrian Crimson Creek argillites and volcaniclastic sediments form a faulted basement sequence outcropping over the major proportion of the North Austral grid. Within the Crimson Creek formation on the Nubeena grid, lies a circular body of intermediate to basic volcanics with minor associated altered (talc-magnesite-chromite) serpentinite. Diamond hole ZT-82N-1 tested this body for its tin potential returning only anomalous (up to 220 ppm tin) values, however a 2 meter vein style intersection of 23.4% lead, and 313 g/t silver was encountered.

These basement rocks are in fault contact with the Ordovician to Devonian sequences outcropping on the Austral grid immediately south of the North Austral prospect. Thin Ordovician to Devonian sequences are also in fault contact with Cambrian basement rocks northeast of the major (contemporaneous?) Balstrup Fault, in the vicinity of the Montagu workings. These workings penetrated

mineralized Ordovician Limestones at 50 meter depth and were later assessed by a two hole diamond drilling program (EZ as manager of joint venture) returning minor (1.5% lead, 2-3% zinc) epigenetic lead-zinc mineralization immediately adjacent to the fault on the northern down thrown side.

The steeply east dipping Ordovician to Devonian sequences can be mapped trending south-southeast from the Austral through Oceana to Pyramid prospects with only one major interruption; that being the steeply south dipping Oceana Fault. This major fracture has offset the sequences by 750 meters to the east and drilling at the Oceana suggests it was active during deposition of the limestone and possibly the Moina Formation. Evidence for this includes chaotic, fault initiated sedimentary breccias with associated mineralized zones, epigenetic mineralization adjacent to the fault, stratiform zinc mineralization within sandy Moina Formation interbeds cut by later epigenetic lead-zinc veining. This indicates the fault possibly may have been a feeder from Moina sandstone time through to the Ordovician and beyond.

Outcrop within the Ordovician to Devonian sequences is generally adequate with the exception of the prospective host; the Gordon Limestone, which is manifest as a topographic low with extremely poor to nil outcrop. Furthermore this topographic depression is masked by variable thicknesses of carbonaceous black pugh (decomposed limestone) which has proved to be variably geochemically anomalous. Weathering of an original weakly sulfide rich parent carbonate may lead to the upgrading of the sulfides through a residual process aided by non-leaching in an extremely reducing environment, producing spurious anomalies. The lack of outcrop within the prospective rocks has made mapping extremely difficult with the majority of interpretations, especially at Oceana being made on drillhole and costean information. This information has highlighted the overall karstic nature of the weathered limestone where deep weathering to >250 meters depth occurs coincident with the epigenetic mineralized zone at the Oceana and coincident with the Flux Quarry mineralization at the Austral prospect. However areas within 100 meters of these zones may show fresh bedrock at depths

of from 1 to 5 meters making gravity surveys in particular difficult to interpret.

Geologic mapping has however shown the limestone to disconformably overlie the Moina Formation with the disconformity being marked by a lenticular, white, sheared, quartz pebble conglomerate found both at the Oceana and Austral prospects. The limestone also appears to be disconformably overlain by the Silurian Crotty Quartzite, possibly with a slight angular disconformity. Crotty Quartzite is itself conformably overlain by successive slate, quartzite and siltstone units through into the Devonian.

Detailed mapping, drilling and costeaning surveys have shown the 500 meter thick prospective limestone sequence to be comprised of a thinly bedded series of generally nodular micrites, biomicrites, sedimentary chaotic slump breccias and mudstones. These units were deposited in environments ranging from high intertidal to subtidal with localized deeper water fascies in fault activated sub-basins.

Mineralization has been worked at various stratigraphic levels within the limestone sequence since the early 1880's. Many of these shallow excavations were associated with mineralized fault and shear zones, however two significant mineralized zones outcropped prominently.

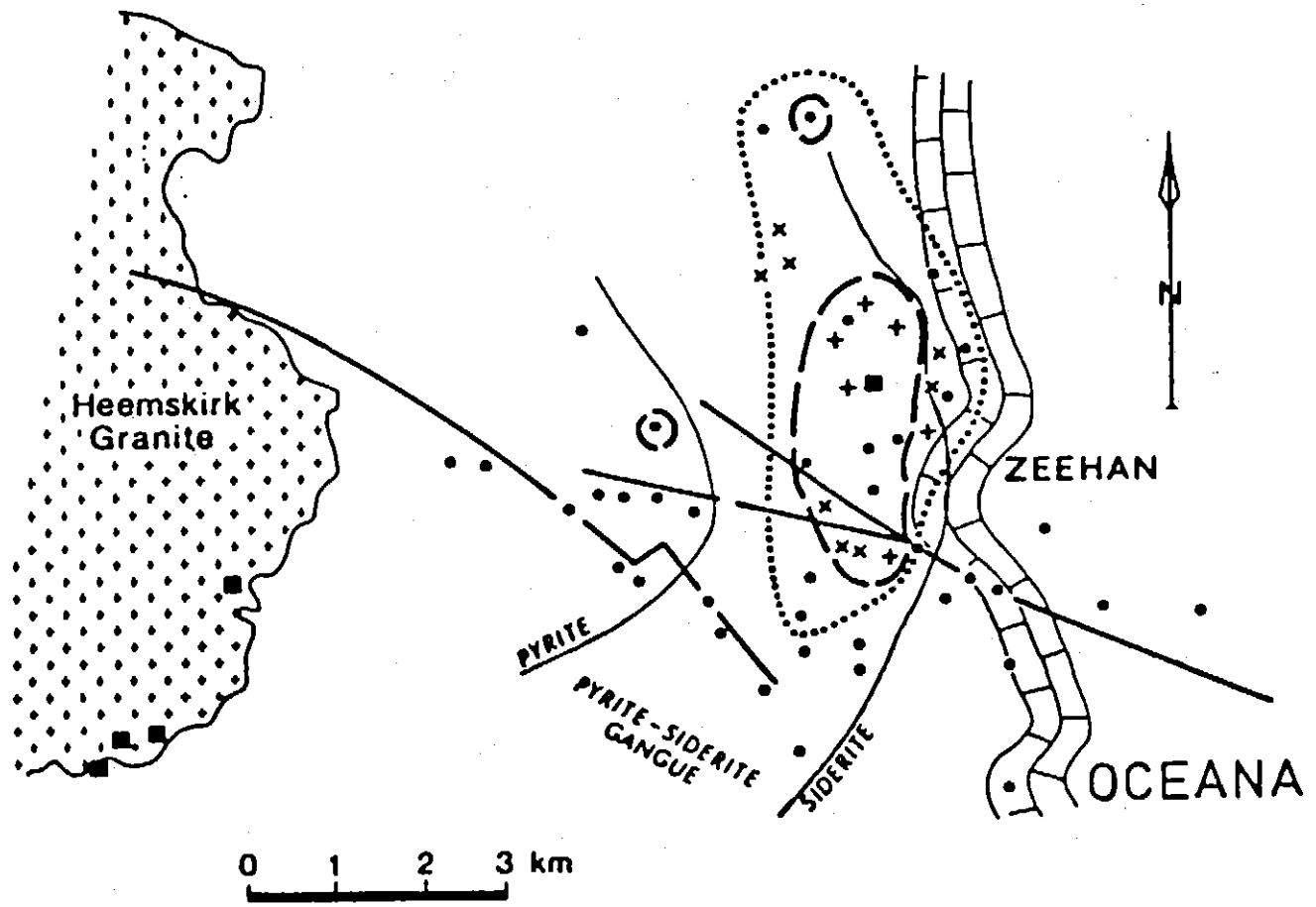
The Oceana mineralization outcropped as a prominent but subdued manganiferous gossan as does the Flux Quarry mineralization which outcrops prominently in the northwest portion of the Austral grid. Both these zones of mineralization were the focus of Cyprus's initial (1978) exploration surveys. Important minor workings including the Pyramid, South Oceana and Montagu were later discovered in thickly vegetated areas in close proximity to these major mineralized zones. Cyprus's initial surveys included geochemical, geophysical (gravity, magnetics, IP, EM) and costeaning surveys followed by diamond drilling of selected targets. By early 1983 a total of 15 diamond drill holes had outlined a resource of some 2.47 million tonnes of 9.4% lead,

4.0% zinc, plus 75 g/t silver in extensions to the Old Oceana workings. Significant lead-zinc mineralization; 3 meters of 9.5% lead, 6.6% zinc plus 71 g/t silver encountered in ZT-80A-6, was also delineated in an extensive 10 hole drilling program designed to assess a major gravity feature on the Austral prospect.

MINERALIZATION

The Zeehan tin-lead-zinc-silver mineral field to the southeast of the Heemskirk granite has traditionally been regarded as a classic example of magnetic hydrothermal zoning around a major granite intrusion. In general the mineralization occurs as small lenticular, irregular bodies infilling fissures and other structural features in zones of faulting shearing and fracturing. Mineralogically the lodes are fairly simple comprising argentiferous galena and siderite with subordinate sphalerite and pyrite and minor calcite, quartz, bournonite, boulangerite and tetrahedrite.

The pronounced eastwards zonation in lead-zinc lode mineralogy from tin minerals to pyrite to siderite away from the Heemskirk granite was first recognized by Waller in 1904 (Figure 2). Since then detailed chemical, mineralogical and isotope studies have substantiated and refined the original zonation pattern and supported the traditional interpretation that the mineralization



× Granitic dykes
+ Major silver producers (> 1 m. oz Ag)
—— Fault
— — Limit of stannite
..... Limit of > 1 oz Ag/unit Pb in galena (mine assays)
■ Tin deposits
• Lead - zinc deposits
Generalized occurrence of limestone

5 cm

(Solomon, 1981)

Zonal relationships of the Zeehan mineral field as suggested by Twelvetrees and Ward(1910) and Both and Williams(1968)

FIGURE 3

in the Zeehan field originated as a west to east flow of hydrothermal emanations from the Heemskirk granite in Devonian times.

However recent exploration by Cyprus on the Oceana deposit has demonstrated at least part of the lead-zinc-silver mineralization in the Gordon limestone is of stratiform, syndiagenetic style and of Ordovician age. Stratiform, syndiagenetic mineralized horizons intersected in diamond drill holes ZT-80-3, 4, 7 and ZT-82-10A south of the Oceana Mine are stratigraphically restricted to the base (western ore zone) and top (eastern ore zone) of a series of chaotic submarine debris flow breccias similar to those found in major Irish mines. These breccias are atypical of the shallow water Gordon Limestone sequence as their characteristics imply a deeper water depositional environment. Three separate and distinct ore lenses north of the Old Oceana Mine are characterized by epigenetic (feeder zone material) lead-zinc sulfides associated with recrystallized and weakly silicified dolomites, siderite and minor calcite. The coarse nature of the sulfides and gangue minerals suggest the feeder zone is centered on the Oceana fault.

Lead isotope studies by B Gulson of the CSIRO on Oceana core have shown the leads to be of Cambro-Ordovician age and less radiogenic than leads from Tasmanian Devonian granite related mineralization. Additional isotope studies including carbon, oxygen and sulfur, were conducted by Dr G Green of the Tasmanian Department of Mines on Cyprus's request. Carbon and oxygen isotopes were shown to become progressively lighter towards the mineralized zones which is typical of some of the Irish deposits in particular the Tynagh Deposit. The carbon values are quite light in comparison to the majority of Irish style deposits, however this may be a function of the oxidation of organic carbon within the system. This may also have aided the partial reduction of Ordovician sea water sulfate (barite at Grieve giving a value of 30‰ - close to average Ordovician sea water) by organic matter as stated above giving rise to sulfur isotopes of the range 5 to 15‰ within lead and zinc sulfides. Small basemetal sulfide clasts have also been reported by Green within

chaotic slump breccias at the Grieves prospect south of Oceana indicating an Ordovician age for the sulfides.

The mineralization of the Zeehan field has therefore had a composite origin, involving the early formation of sedimentary exhalative lead-zinc-silver (barium) mineralization in Ordovician sediments as at Oceana, and the subsequent addition in Devonian times of structually controlled tin-lead-zinc-silver vein deposits due to the west to east flow of hydrothermal solutions emanating from the Heemskirk Granite intrusion at the end of the Tabberabberan Orogeny.

WORK CONDUCTED BY CYPRUS

In 1978 Amoco Minerals Australia Company, now Cyprus Gold Australia Corporation, commenced an exploration program designed to detect carbonate hosted lead-zinc-silver mineralization within the Gordon Limestone sequence in the Zeehan area.

The early surveys were concentrated on the already recognized and previously worked mineralized Gordon Limestone sequences in the Austral and Oceana Valleys. Initially the areas were gridded, hand auger sampled, geophysically surveyed (IP, magnetics, EM) geologically mapped and selected targets diamond drilled.

The first 2 holes; one on the Austral and the other on the Oceana, proved highly encouraging and a second more detailed program was commenced. Infill gridding to 50 meter spaced lines was completed over portions of the Oceana grid and the grid extended to cover the Pyramid mineralization to the south.

Subsequent to a joint venture being negotiated, gridding surveys were completed over Electrolytic Zinc's Mining and Water Leases south of the Flux Quarry mineralization. Bedrock auger sampling surveys followed by a costeaning program were completed and detailed geophysical surveys undertaken. Surveys included gravity, EM, IP and downhole EM, however this data base proved to be of little value as the drilled mineralization at Oceana and Austral appears to be unresponsive to electrical or electromagnetic geophysical techniques. By early 1983 a total of 15 diamond drillholes had outlined a resource of 2.4 million tonnes of 9.2% lead, 4.0% zinc plus 73 g/t silver in extensions of the Old Oceana workings, while in the Austral Valley immediately to the north, thin horizons of lead-zinc-silver mineralization (best interval being 3 meters of 9.5% lead, 6.6% zinc plus 71 g/t silver) had been delineated by a program of 11 holes (Table 2).

A more detailed account of Cyprus's program can be found in the following reports:

Report	Title	Project
151	Progress Report June '78-June '79	Zeehan Project EL 4/78
179	Progress Report June '79-June '80	Zeehan Project EL 4/78
249	Progress Report June '80-June '81	Zeehan Project EL 4/78
279	Progress Report July '81-Jan '82	Zeehan Project EL 4/78
282	Progress Report July '81-Jan '82	EZ/Amoco Joint Venture 60M/77, 4W/77
309	Progress Report Jan '82-July '82	Zeehan Project EL 4/78
320	Progress Report Jan '82-July '82	EZ/Amoco Joint Venture 60M/77, 4W/77
347	Progress Report July '82-Dec '82	Zeehan Project EL 4/78
353	Progress Report Jan '83-July '83	Zeehan Project EL 4/78
395	Drillhole Information - Oceana	ZT-82-10 to ZT-82-14
398	Part Relinquishment Report	Zeehan Project EL 4/78

held in the Mines Department Data Base.

The following is a brief summary of the geological, geochemical and geophysical data from these reports which led to the

definition of the geologic resource at the Oceana Mine and highlighted the further potential for mineralization on the Austral grid.

It should be noted that Cyprus's work was significantly curtailed at Zeehan after 1983 due to poor metal prices for lead-silver-zinc world wide and Cyprus viewed the future of the metals, in particular lead in the long term, pessimistically.

Geochemistry

Oceana-Pyramid

A strong, but erratic hand auger anomaly previously outlined north of the Oceana Mine (Enclosure 5, Report 151) was delineated further using the bombadier mounted jackro hydraulic auger. The anomalous zone with dimensions of 175 by 125 meters at its widest point, averages upwards of 0.1% lead plus 0.25% zinc, however, analyses ranged up to 8.9% lead, 3.21% zinc and 78 g/t silver. A further moderately strong, 100 by 125 meters, coincident lead-zinc anomaly was outlined south of the Oceana Mine with values assaying up to 3.12% lead, 3.69% zinc and 62 g/t silver (Enclosures 13 and 14, Report 249).

Nebulous but high tenor lead-zinc responses were returned proximal to the South Oceana workings, between lines 2700N and 2900N. Augering here was hampered by fluvioglacial erosion which has partly removed the soil profile, hence a number of bedrock samples were taken using a hydraulic excavator.

A number of strong, but limited sized anomalies were also observed on lines 3650N, 3700N and 3200N averaging 0.1% lead and 0.25% zinc.

Spotty, moderate to strongly anomalous lead-zinc geochemistry was also returned coincident with the Pyramid workings southeast of South Oceana.

Austral

A number of highly anomalous zones of coincident lead-zinc geochemistry were delineated at various stratigraphic levels within the limestone sequence. Assays ranged up to 10.5% lead and 1.8% zinc (Enclosures 6 and 7, Report 279), however drilling later proved the bulk of these to be due to low grade mineralization occasionally enhanced through residual geochemical processes. The western most anomalous trend which, lies along strike to the south of the Flux Quarry mineralization, averages +1000 ppm lead and +1000 ppm zinc over approximately 400 meter strike.

Costeaning

Oceana-Pyramid

Numerous trenches, varying in depth from 0.15 to 6.0 meters were excavated over the Oceana, South Oceana and Pyramid prospects. The trenching proved to be extremely difficult and hazardous to map and sample due to thick, unconsolidated fluvioglacial gravels, sink holes and zones of unweathered hard limestone occurring near surface making chip sampling extremely difficult. However assays from many of the trenches were strongly anomalous and outlined a continuous mineralized zone (Enclosure 4, Report 347) 325 meters in length with widths varying from 4 to 100 meters coincident with the Oceana mine area. A geochemical tail is observed (assaying >1% lead plus zinc) for a further 300 meters south of the mineralized body and lies directly on strike from strongly anomalous results coincident with the South Oceana workings. Here a mineralized zone 150 meters in length averaging from 2 to 4 meters width assayed up to 33.8% lead, 8.5% zinc and 303 g/t silver. Similarly encouraging mineralization, 6 meters of 7.2% lead, 2.1% zinc was encountered from a trench sited immediately north of the Pyramid workings.

Austral

Seven of the eleven costeans excavated on the Austral prospect delineated moderate to strongly anomalous mineralized zones even though the trenches were designed primarily to gain geological information on the overturned beds of the western flank of the

valley (Enclosure 8, Report 249). Significant mineralization was encountered over 200 meters in length and up to 20 meters in width lying immediately south of the Flux Quarry (Costean K, 20 meters of 2.8% lead, 1.8% zinc, 9.9 g/t silver, and costean H, 10 meters of 4.3% lead, 0.2% zinc, 20 g/t silver and 2 meters of 7.9% lead, 17.5% zinc, 53 g/t silver). A further narrow mineralized zone some 100 meters south of the above was also delineated coincident with old shallow workings. (Costean F, 4 meters of 5.5% lead, 1.2% zinc, 63 g/t silver; Costean E, 2 meters of 4.2% lead, 1.1% zinc, 9 g/t silver and Costean D, 2 meters of 2.6% lead, 1.6% zinc, 15 g/t silver and 2 meters of 19.4% lead, 0.03% zinc and 8 g/t silver).

Geophysics

Oceana-Pyramid-Austral

IP Techniques: Gradient array and dipole IP surveys initially appeared to highlight the known mineralized horizon at Oceana. However after physical property testing surveys were conducted on drillcore it was obvious the IP had failed to delineate the drilled mineralization and that barren pyritic host rocks proved to be more chargeable. Drilling also confirmed the pyritic nature of the host limestone in the Austral Valley and only the chargeable zone coincident with the Flux Quarry can be attributed to mineralization.

EM Techniques (Surface and Downhole): Results from physical property testing (Appendix 5, Report 249) of mineralized core suggested electromagnetic surveying may have aided the definition of the mineralized zones. In response to this, helicopterborne Dighem, roving and large fixed loop PEM, EM-37 and downhole PEM and SIROTEM surveys were implemented over portions of the gridded areas. These surveys showed inconclusive results with some appearing to map the mineralization in one particular area and not in another and vice versa. From this it is apparent that the drilled mineralization at Oceana in particular, to be unresponsive to electrical or electromagnetic geophysical techniques. This is almost certainly due to the lack of continuity in electrical properties as evidenced from the

physical property tests conducted by Geoterrex and from field tests on mineralization indicating poor to nil conductivities over core lengths greater than approximately 10 centimeters.

Gravity: A broad 0.55 milligal anomaly was delineated south of the mine fault at the Oceana mine. This anomaly correlates well with massive and stringer style stratiform lead-zinc mineralization encountered in holes ZT-80-4, 7 and 10A.

At the South Oceana prospect a minor nebulous 0.4 to 0.6 milligal response is observed directly coincident with high grade, narrow lead-zinc mineralization cut during costeaning. A strong gravity response of 0.5 milligals was also delineated coincident with the Pyramid workings.

A large elongate gravity response was also delineated on the Austral grid coincident with the swampy portion of the valley. Drilling surveys later failed to explain this large response, however differential weathering profiles may be part of the answer.

Results from the gravity surveys, physical property tests, diamond drilling and from costeaning surveys would indicate the technique responded, but not uniquely to the mineralization. The lack of data for two of the major parameters; the weathering profile and karstic features made the bouguer computation somewhat unreliable.

Magnetics: The CSIRO documented weakly magnetic, although unidentified, minerals present in the Oceana ore. Magnetic susceptibility tests conducted on mineralized core showed the manganoan siderite gangue to be weakly magnetic. This magnetic component seems to be retained upon oxidation to manganiferous ironstones and modelling suggests that this technique may be useful in locating gravel or humic covered mineralized zones near surface.

Gamma/Density Logging - Downhole Surveying: These techniques were employed to aid the compilation of the complex carbonate

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TABLE 1

OCEANA PROSPECT - SUMMARY OF DIAMOND DRILLING — FEBRUARY 1984

HOLE	CO-ORD	BEARING	DECLIN	DEPTH (m)	COORDINATES AZIMUTH DEFLECTION (at terminal depth)	RESULTS (* including)
ZT-79-2	3700N 1500E	270°G	-60°	235.90	Unknown (acid)	65-218=153m @ 5.10% Pb + 3.50% Zn + 41.7g/t Ag * 65- 96= 31m @ 0.66% Pb + 3.28% Zn + 1.0g/t Ag 96-122= 26m @ 22.26% Pb +11.69% Zn + 203.4g/t Ag *103-118= 15m @ 33.29% Pb +19.22% Zn + 336.7g/t Ag 122-204= 82m @ 0.68% Pb + 1.01% Zn + 3.0g/t Ag *204-218= 14m @ 8.37% Pb + 2.95% Zn + 56.7g/t Ag
ZT-80-3	3200N 1515E	270°G	-60°	399.70	3075N 1335E	237-238= 1m @ 8.25% Pb + 0.39% Zn + 73.6g/t Ag
ZT-80-4	3420N 1490E	270°G	-66°	360.30	3370N 1350E	247-258= 11m @ 12.00% Pb + 4.0% Zn + 89g/t Ag *250-258= 8m @ 15.00% Pb + 5.40% Zn + 113g/t Ag 302-307= 5m @ 22.30% Pb + 1.99% Zn + 323g/t Ag *304-307= 3m @ 36.0% Pb + 3.2% Zn + 530g/t Ag
ZT-80-5	3600N 1590E	270°G	-65°	475.30	3530N 1350E	No visible mineralization
ZT-80-6	3650N 1350E	90°G	-60°	330	3658N 1506E	69- 72= 3m @ 1.52% Pb + 0.28% Zn + 13.3g/t Ag 112-117= 5m @ 1.76% Pb + 1.20% Zn + 6.6g/t Ag 126-134= 8m @ 1.22% Pb + 0.24% Zn + 5.5g/t Ag 212-220= 8m @ 0.45% Pb + 1.39% Zn + 1.0g/t Ag
ZT-80-7	3420N 1250E	037°G	-50°	250	3383N 1420E	167-169= 2m @ 12.0% Pb + 11.0% Zn + 70g/t Ag
ZT-80-8	3700N 1575E	270°G	-55°	228	3722N 1424E	160-167= 7m @ 0.6% Pb + 3.12% Zn + 13.7g/t Ag *165-167= 2m @ 1.7% Pb + 7.7% Zn + 29.0g/t Ag
ZT-80-9	3600N 1400E	006°G	-50°	200.20	3722N 1424E	1- 24= 23m @ 2.82% Pb + 2.12% Zn + 9.9g/t Ag * 4- 9= 5m @ 7.30% Pb + 1.88% Zn + 16.8g/t Ag 120-186= 66m @ 2.45% Pb + 0.82% Zn + 12.5g/t Ag *148-162= 14m @ 3.25% Pb + 0.4% Zn + 8.7g/t Ag 172-186= 14m @ 5.80% Pb + 1.28% Zn + 21.7g/t Ag *182-186= 4m @ 12.95% Pb + 3.09% Zn + 76.0g/t Ag
ZT-82-10	3415N 1560E	270°G	-67.5°	190.7	3411N 1595E	120.5-121=0.5m @ 0.08% Pb + 2.64% Zn + 4.0g/t Ag
ZT-82-10A	3415N 1562E	270°G	-65°	574.6	3369N 1346E	76- 77 = 1.0m @ 0.09% Pb + 5.8% Zn + 1.0g/t Ag 430-434 = 4.0m @ 3.5% Pb + 0.5% Zn + 41.5g/t Ag 445-447 = 2.0m @ 4.2% Pb + 0.3% Zn + 55.0g/t Ag 398.5-399.5 = 1.0m @ 2.15% Pb + 0.27% Zn + 13.0g/t Ag
ZT-82-11	3602N 1374E	090°G	-45°	87.9	Unknown	6- 11 = 5.0m @ 3.5% Pb + 2.7% Zn + 24.6g/t Ag 22- 26 = 4.0m @ 1.08% Pb + 1.06% Zn + 9.8g/t Ag 54- 70 =16.0m @ 3.0% Pb + 2.1% Zn + 14.0g/t Ag * 57- 59.5 = 2.5m @ 13.0% Pb + 1.3% Zn + 49.2g/t Ag 82- 83 = 1.0m @ 2.2% Pb + 2.3% Zn + 20.0g/t Ag
ZT-82-12	3605N 1230E	090°G	-64°	481.6	3594N 1444E	24-27 = 3.0m @ 0.02% Pb + 1.82% Zn + 1.0g/t Ag *374-377 = 4.0m @ 11.6% Pb + 0.3% Zn + 80.3g/t Ag 374-376 = 2.0m @ 18.6% Pb + 0.3% Zn +131.5g/t Ag 380-384 = 4.0m @ 1.4% Pb + 0.5% Zn + 7.0g/t Ag
ZT-82-13	3685N 1250E	090°G	-60°	346	N/A	146-148 = 2.0m @ 0.28% Pb + 0.3% Zn + 110g/t Ag 264-286 = 22m @ 7.5% Pb + 0.55% Zn + 65.9g/t Ag *272-286 = 14m @ 10.75% Pb + 0.74% Zn + 96.7g/t Ag *278-283 = 5m @ 21.16% Pb + 1.62% Zn + 205g/t Ag 335-336 = 1m @ 0.6% Pb + 2.2% Zn + 3.0g/t Ag 341-343 = 2m @ 1.0% Pb + 1.5% Zn + 34.0g/t Ag
ZT-83-14	3670N 1575E	090°G	-61°	172.2*	N/A	Not at target
ZT-W2	3600N 1415E	228°M	-45°	15 (abandoned)		3- 14 =11.0m @ 10.2% Pb + 3.3% Zn + 21.5g/t Ag *6.0m @ 16.2% Pb + 3.0% Zn + 31.7g/t Ag

stratigraphy both at the Oceana and Austral prospects. A good correlation was achieved in the Austral holes, however logging in the latter Oceana holes failed to aid the geological understanding. This was more than likely due to the epigenetic mineralization and its hydrothermal dolomite/silica overprint.

Physical Property Tests: Eight selected samples of mineralized and unmineralized drill core were submitted for physical property testing.

Densities of unmineralized material ranged from 2.5 to 3.0 g/cc (averaging approximately 2.6 g/cc) while mineralized core ranged in density from 3.3 to 5.5 g/cc (a sample of massive lead-zinc which was partly crushed in transit was estimated to have been 6.0 g/cc). Ore reserve calculations for the Oceana have been based on an average density for the mineralization of 4.5 g/cc.

Resistivities of unmineralized rock are generally >500 ohm meters, however mineralized material is always <10 ohm meters with the lowest measurement of 0.2 ohm meters.

As stated previously chargeabilities are opposite to what would normally be expected. The mineralized core showed low chargeability and the unmineralized core returned high chargeabilities due to large amounts of disseminated pyrite.

Diamond Drilling

Oceana

To date 13 diamond holes plus 1 precollar (ZT-83-14) and an abandoned hole (ZT-82-10) have been completed on the Oceana project (Enclosure 3) details of which are listed in Table 1. Of these holes 10 in number assessed part of, or the entire mineralized section with holes ZT-80-5, 8 and 9 either cutting a faulted and barren section, deviating or sited to test a different geologic premise.

North of the Mine Fault the drilling has outlined at least four separate discordant epigenetic lenses of lead-zinc-silver

mineralization with an associated siderite-dolomite-silica gangue. The mineralization occurs as coarse grained infillings of veins, cavities etc in a coarse, recrystallized partly silicified dolomite which is occasionally brecciated. Host carbonate fabrics are totally obliterated by the dolomitization and silicification and weathering in this area is intense and deep. It would appear the Oceana Fault has been the mineralizing feeder and there is evidence to suggest this fault zone may have been active during Moina Sandstone time through to Gordon Limestone times (see Geology of the RL Area). The triangular shaped zone of mineralization has been subject to an open pit feasibility study.

South of the Mine Fault fresh, unweathered limestones as well as two basemetal mineralized zones were encountered associated with a large thickness of sedimentary chaotic breccias. The massive to stringer style lead-zinc-silver mineralization lies in two distinct horizons at the base and at the top of the breccias, with the western most lens showing a marked asymmetrical zonation of a basal lead rich layer succeeded by a zone richer in siderite and depleted in galena. The breccias exhibit strong angularity of clasts, a high clast to matrix ratio and relatively little transport and intermixing of lithologically variable clasts. In their general characteristics they would appear to be equivalent to the carbonate breccias occurring in the hanging wall of the Silvermines Deposit in Ireland. Here the breccias are interpreted as submarine gravitational debris flow breccias triggered by coeval tectonism on hinge faults at the margins of their depositional basins.

In general the drilled mineralization south of the Mine Fault resembles that of the stratiform syngenetic ore zones at Silvermines with the exception that the majority of the mineralized zones show some signs of preconsolidation deformation which may indicate subsea floor syndiagenetic replacement of thinly bedded limestone/shale sequences.

To summarize the ore horizons to the south of the Mine Fault are regarded as stratiform-syndiagenetic in origin while the ore to

the north of the Mine Fault is interpreted as an epigenetic stratabound discordant feeder zone occupying an altered zone of dolomitization-silicification.

Austral

Eleven diamond holes were completed on the Austral prospect (Enclosure 4) 7 of which were designed to test a large, gravity 0.5 milligal gravity anomaly lying within the EZ joint venture area. Details of the drilling are listed in Table 2. The gravity response failed to be satisfactorily explained (other than possible differential weathering giving rise to the anomaly) and only narrow weak lead-zinc-silver mineralization was encountered.

However significant mineralization was cut by the four drillholes sited on the geochemical anomalous zone extending from the Flux Quarry south for a distance of some 400 meters. Costeans in this area had returned highly significant results which were duplicated by one of the holes, ZT-80A-6, which intersected 3 meters of 9.5% lead, 6.6% zinc, 71 g/t silver. The two holes sited to test the Flux Quarry mineralization failed to cut an unweathered sequence and both holes were terminated early due to bad drilling conditions after cutting a number of ironstone zones which assayed from 2 to 4% combined lead-zinc. Deeper drilling is necessary to cut the entire mineralized sequence preferably in fresh bedrock.

Further drilling surveys are also needed to test the potential outlined by costeaning and drilling on the area immediately to the south of the Flux Quarry. Hole ZT-80-6 was also terminated early due to drilling conditions and may have failed to cut the entire mineralized sequence.

Metallurgy

Electrolytic Zinc Industries conducted minor tests on 3 representative 1 kilogram samples from the Oceana mineralization to ascertain their compatibility with the standard Rosebery/Que River mill feed. EZ metallurgists stated they do not consider

TABLE 2 - AUSTRAL PROSPECT - SUMMARY OF DIAMOND & WINKIE DRILLING

HOLE	CO-ORD	BEARING	DECLIN	DEPTH (M)	COORDINATES AZIMUTH DEFLECTION (at terminal depth)	RESULTS (* including)
ZT-79A-1	1800N 1225E	270°G	-50°	163	Unknown (acid)	76-82= 6m @ 1.06% Pb + 1.66% Zn + 1.6g/t Ag 130-143=13m @ 2.61% Pb + 0.62% Zn + 13.8g/t Ag
ZT-80A-2	1850N 1300E	270°	-60°	331	1850N 1135E	40- 46= 6m @ 0.69% Pb + 1.62% Zn + 5.8g/t Ag 284-299=15m @ 0.80% Pb + 0.86% Zn + 4.8g/t Ag *284-290= 6m @ 1.44% Pb + 0.65% Zn + 5.1g/t Ag and 294-299= 5m @ 0.29% Pb + 1.40% Zn + 3.8g/t Ag
ZT-80A-3	1610N 1300E	270°	-65°	373.50	1535N 1097E	294-296= 2m @ 0.42% Pb + 2.05% Zn + 15.5g/t Ag 341-355=14m @ 0.86% Pb + 0.23% Zn + 4.4g/t Ag *347-351= 4m @ 2.25% Pb + 0.28% Zn + 9.0g/t Ag
ZT-81A-4	1300N 1530E	270°G	-50°	259		No significant mineralization
ZT-81A-5	897.5N 1373E	270°G	-50°	340		201-202= 1m @ 0.63% Pb + 1.15% Zn + 5.0g/t Ag 278-281= 3m @ 0.57% Pb + 0.59% Zn + 2.3g/t Ag
ZT-81A-6	1695N 1050E	090°G	-55°	194.2		42-43 = 1m @ 0.63% Pb + 5.00% Zn + 18.0g/t Ag 74-77 = 3m @ 9.50% Pb + 6.60% Zn + 71.3g/t Ag 153-167=14m @ 2.54% Pb + 0.35% Zn + 40.4g/t Ag 181-183= 2m @ 4.20% Pb + 0.18% Zn + 40.0g/t Ag
ZT-81A-7	750N 1535E	250°G	-50°	254		50.2-52.2= 2m @ 1.40% Pb + 0.16% Zn + 42.5g/t Ag 122-125= 3m @ 4.34% Pb + 0.29% Zn + 17.0g/t Ag *124-125= 1m @ 10.60% Pb+ 0.27% Zn + 42.0g/t Ag *244-245.8= 1.8m @ 0.06% Pb + 1.89% Zn + 1.0g/t Ag
ZT-81A-8	1030.5N 1340E	270°G	-45°	150		12-13 = 1m @ 3.30% Pb + 5.30% Zn + 23.0g/t Ag
ZT-81A-9	555N 1500E	242°G	-45°	149.5		No significant mineralization
ZT-81A-10	550N 1598E	255°	-45°	100		52-58 = 6m @ 1.79% Pb + 0.58% Zn + 14.8g/t Ag * 52-55 = 3m @ 2.57% Pb + 0.67% Zn + 20.0g/t Ag
ZT-W1	630N 1555E	249°	-45°	28(abandoned)		19-23 = 4m @ 1.60% Pb + 0.80% Zn +118.0g/t Ag

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the tests sufficient to form any firm conclusions on the compatibility or otherwise of the Oceana material with Rosebery/Que River feed. A detailed account of the three tests can be found in the Feasibility Study accompanying this report.

FURTHER POTENTIAL

Oceana Grid

Oceana Mine Area (May upgrade reserves)

- Infill drilling of the deposit is necessary as there are gaps of 200 meters between holes

- No drilling has been conducted beneath the worked portion of the stratiform ore zones

- Diamond drillhole ZT-83-14 drilled to 172 meters as a precollar should be completed to test for high grade mineralization beneath ZT-79-2

- Drill off stratiform ore zone south of section 3400N bearing in mind possible steep plunges to ore shoots

38

. Drill test limestone sequence adjacent to Oceana (feeder) fault east and west of known epigenetic mineralized zone

Oceana South Zone (May augment reserves at Oceana)

. Drill test large area of siderite/dolomite alteration hosting narrow high grade (up to 4 meters width assaying up to 33.8% lead, 8.5% zinc and 303 g/t silver) mineralization encountered through costeaning (lines 2750N, 2800N, 2850N)

. Mineralization to 2.5% lead-zinc plus 11 g/t silver encountered in costean 3100N at a similar stratigraphic level to the stratiform sulfides at Oceana should be diamond drilled

. Mineralization to 4.3% lead-zinc and 23 g/t silver encountered in costean 3250N at a similar stratigraphic level to the stratiform sulfides at Oceana should be diamond drilled.

Pyramid Prospect (May augment reserves at Oceana)

. Drill test beneath an EZ costean on line 1750N which assayed 7.2% lead, 2.1% zinc over 6 meters. Narrow mineralization; 1 meter width, assaying up to 25% lead-zinc was encountered by Zeehan Explorations in a drillhole cut by numerous faults.

Austral Grid

Flux Quarry (May augment reserves at Oceana)

. Drill beneath holes ZT-79-1 and 80A-2 to test the weakly mineralized zone at a depth designed to penetrate unweathered bedrock

. Drilling should be completed from west to east to enable a complete section of the prospective sequence to be cut as well as guarding against the unit being overturned to the west (evidenced from 80A-2).

39

Austral Mine (May augment reserves at Oceana)

- Drill test beneath and along strike from hole ZT-80A-6 which encountered 3 meters of 9.5% lead, 6.6% zinc, plus 71.3 g/t silver within decomposed limestone

- Costeans 50 meters and 60 meters north and south of ZT-80A-6 assaying:

K (north)	20 meters of	2.8% lead,	1.8% zinc,	9.9 g/t silver
inc	2 meters of	8.4% lead,	1.1% zinc,	37 g/t silver
and	6 meters of	5.7% lead,	0.4% zinc,	14 g/t silver
H (south)	10 meters of	4.3% lead,	0.2% zinc,	20 g/t silver
and	2 meters of	7.9% lead,	17.5% zinc,	53 g/t silver

  remain untested.

- A 100 meter long narrow mineralized zone encountered in 3 costeans immediately south of ZT-80A-3 also remains untested:

Costeans F	4 meters of	5.5% lead,	1.2% zinc,	63 g/t silver
E	2 meters of	4.2% lead,	1.1% zinc,	9 g/t silver
D	2 meters of	2.6% lead,	1.6% zinc,	15 g/t silver
and	2 meters of	19.4% lead,	0.03% zinc,	8 g/t silver

  A 7 meter interval between the two intercepts from costean D was unsampled due to the smelters track.

- Significant lead-zinc mineralization has been intersected in costeans and drilling over 400 meters in strike from the Flux Quarry south to Costean D yet its full potential has not been assessed.

North Austral Grid

Montagu Area (May augment reserves at Oceana)

- Concealed Gordon Limestone below Silurian strata to the north of the northwest trending Balstrup Fault remains highly prospective as EZ drillholes have intersected minor

(1.5% lead, 2-3% zinc) epigenetic mineralization within carbonates adjacent to the fault.

This remains only partially drill tested and requires further drilling.

Signed _____ for

P JONES

within **EL4/78**

60M/77
Electrolytic Zinc

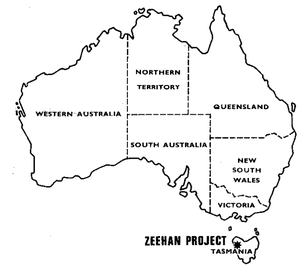
4W/77
EZ

See Appendix 1 of Report 347 for detailed costean information
(and Appendix 2, Report 353)

41°55'30" S

145°21'00" E

Location



Notes

ZT-80- (etc) prefix omitted from hole numbers

Contour Intervals

1% — 2
4% — 7
10% — 12

TN 11° MN

1:2500
0 100 200 meters

5 cm

88-2819

Cyprus Gold Australia Corporation

772042

Project	ZEEHAN			Nº	A-78-60B
Project Partner					
Oceana					
COSTEAN GEOCHEMISTRY					
LEAD/ZINC [COMBINED]					
Map Ref. ANG	K-55-5	Latitude	41°55'S	Longitude	145° 20' E
Surveyed	J. Supree	Date	1982	Scale	1:2500
Drawn	SF, R. SK	Date	January 1983	Drawing Nº	M83-1975

Report 574 (1)

7937 Enclosure 1

145°20'E

Zeehan

EL 47/71
Gippsland Minerals

SPL 129
Mt Lyell

EL 4/78
Cyprus Gold

RELINQUISHED

North Austral (Maxim)

Austral

Oceana

Queen Hill

Nike Creek

Golf course

Manganese Hill

MANGANESE HILL

Grubbs

Track

Tramway (abdn)

SPRAY

STH SPRAY

CENTRAL BALSTRUP

Adit

12M/78
Renison

Amoco Field Office

Built-up area

Zeehan Rivulet

ZEEHAN – DUNDAS RAILWAY (abdn)

EMU BAY

RAILWAY (abdn)

Landing ground

ZEEHAN HIGHWAY

Queenstown Rosebery

SILVER KING

STH KING

Oval

LITTLE HENTY RIVER

38M/77
JNR Enraght-Moony

39M/77
JNR Enraght-Moony

SILVER BELL

NEW SILVER BELL

29M/75
Renison

MONTE CRISTO

SUNRISE

MONTAGU No 1

MAXIM

WATT & McAULIFFES

NTH AUSTRAL

Balstrup

Fault

ZT-80A-2

ZT-79A-1

ZT-80A-3

ZT-81A-6

AUSTRAL

DUFFS

NUBEENA

60M/77
Electrolytic Zinc

COATES

Smelter ruins

Dump

ZT-79-2

ZT-80-8

ZT-82-14

ZT-80-5

ZT-80-9

ZT-80-4

ZT-82-10, 10A

ZT-82-13

ZT-82-6

ZT-82-11

ZT-82-12

ZT-80-7

ZT-80-3

4W/77
EZ

STH OCEANA

Pyramid Fault

Pyramid Creek

PYRAMID 9b

ZEEHAN – STRAHAN ROAD

Strahan

Walking track

MOUNT ZEEHAN

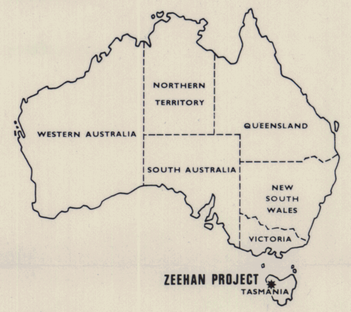
Creek

5361000N
5360000N
5359000N
5358000N
5357000N
5356000N

361000E
362000E
363000E
364000E

41°55'S

Location



Legend

Quaternary
- Alluvium — 1
- Conglomerate talus — 2 (2)

Devonian
- Bell Shale — 3 (42)
- Florence Quartzite — 4 (26)

Silurian
- Austral Creek Siltstone — 5 (9)
- Keel Quartzite — 6 (51)
- Amber Slate — 7 (68)
- Crotty Quartzite — 8 (6)

Ordovician
- Gordon Limestone — 9 (33)
  - Interbedded calcareous sandstone — 9a (63)
  - Ironstone — 9b (14)
- Moina Sandstone — 10 (64)
- Mt Zeehan Conglomerate — 11 (58)

Cambrian
- Crimson Creek Formation — 12 (20)

Proterozoic
- Oonah Quartzite and Slate — 13 (60)
  - Volcanics — 13a (6)

Geology from the Zeehan 1:63 360 Geologic Sheet, field surveys and limited air photo interpretation

TN 11° MN

1:10000
0 100 500 meters

5 cm

772043
88-2819

Cyprus Gold Australia Corporation

Project	ZEEHAN			Nº A-78-608	
Project Partner					
Austral/Oceana					
GEOLOGY showing drillhole locations					
Map Ref. ANG	K-55-5	Latitude	41°55'S	Longitude	145°20'E
Surveyed	P. Jones	Date	1980	Scale	1:10000
Drawn R. SK	S. Fowler	Date	198	Drawing Nº	M80-1449

Report 574 (1)

Legend

QUATERNARY

Alluvium etc	GR	

TERTIARY

Basalt	2C	2

DEVONIAN

Florence Quartzite	4A	26
Undifferentiated quartzites, sandstones, siltstones		

SILURIAN

Amber Slate	4D1	68
Siltstone interbedded with shales		
Crotty Quartzite		
Undiff. sandstones, siltstones and grits	4B1	6
Sandstone, massive	4B2	6
Sandstone, cross bedded	4B3	9
Sandstone, tubicolar	4B4	44
Sandstone, white, friable	4B5	6
Siltstone	4D2	51
Conglomerate	411	6
Grits	4J1	6

ORDOVICIAN

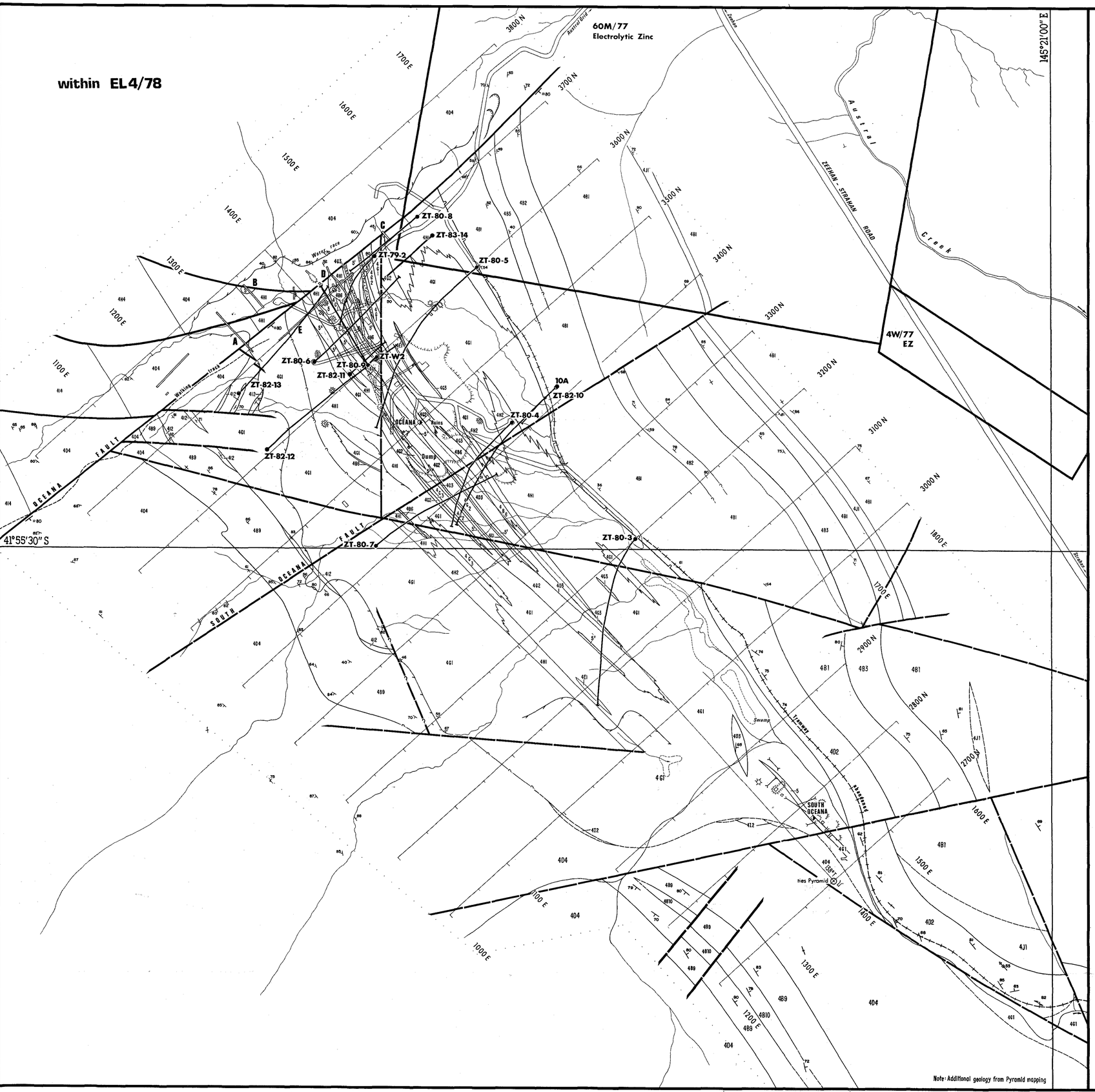
Gordon Limestone		
Sandstone	4B6	63
Sandstone, fossilliferous	4B7	63
Sandstone breccia	4B8	63
Siltstone	4D3	63
Shale	4E1	63
Claystone	4F	63
Limestone	4G1	33
Limestone, fossil breccia	4G2	46
Limestone, slumped	4G3	41
Dolomite, black	4H1	35
Dolomite breccia	4H2	35
Dolomite, silicified	4H3	35
Conglomerate	412	66
Ironstone	5	14
Mineralization	51	12
Moina Formation		
Sandstone, tubicolar	4B9	10
Sandstone	4B10	64
Undifferentiated	4D4	64
Siltstone, tubicolar	4D5	64
Dolomite	4H4	64
Conglomerate	413	64
Grit	4J2	64
Ironstone	5	14
Mt. Zeehan Conglomerate		
Conglomerate	414	58

CAMBRIAN

Crimson Creek Formation		
Undifferentiated	1E1	20
Tuff, volcano lith-arenite	1E 2	20
Sandstone-tuff	4B 11	20
Shale	4E 2	20
Ironstone	5	14
Siltstone	4D6	20

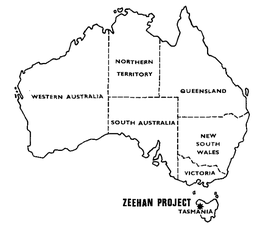
PRECAMBRIAN

Oonah Quartzite		
Undifferentiated	4A1	60
Micaceous quartzite	4A2	60
Sandstone, brown	4B12	60
Siltstone	4D7	60



Note: Additional geology from Pyramid mapping

Location



Symbols

- Geologic contact, position accurate
- Geologic contact, position approximate
- Fault, position accurate
- Fault, position approximate
- Fault, inferred
- Unconformity
- Facies change
- Shear zone
- Zone of intense cleavage
- Brecciation
- Overturned bedding
- Measured dip and strike
- Plunging anticline (minor)
- Quartz vein
- Outcropping Pb/Zn mineralization
- Shaft/prospecting pit
- Adit
- Underground workings
- Costean
- Cutting or quarry
- Dump
- Amoco rock chip location
- Amoco costean
- Amoco drillhole

TN 11° MN

1:2500

0 100 200 meters

5 cm

88-2819

Cyprus Gold Australia Corporation

772044

Project	ZEEHAN			Nº	A-78-60B
Project Partner					
Oceana					
FACTUAL GEOLOGY					
Map Ref. ANG	K-55-5	Latitude	41°55'S	Longitude	145° 20' E
Surveyed	P. Jones	Date	1981	Scale	1:2500
Drawn	R. SK	Date	1981	Drawing Nº	M81-1705

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7940

Legend

QUATERNARY
- Alluvium etc — GR

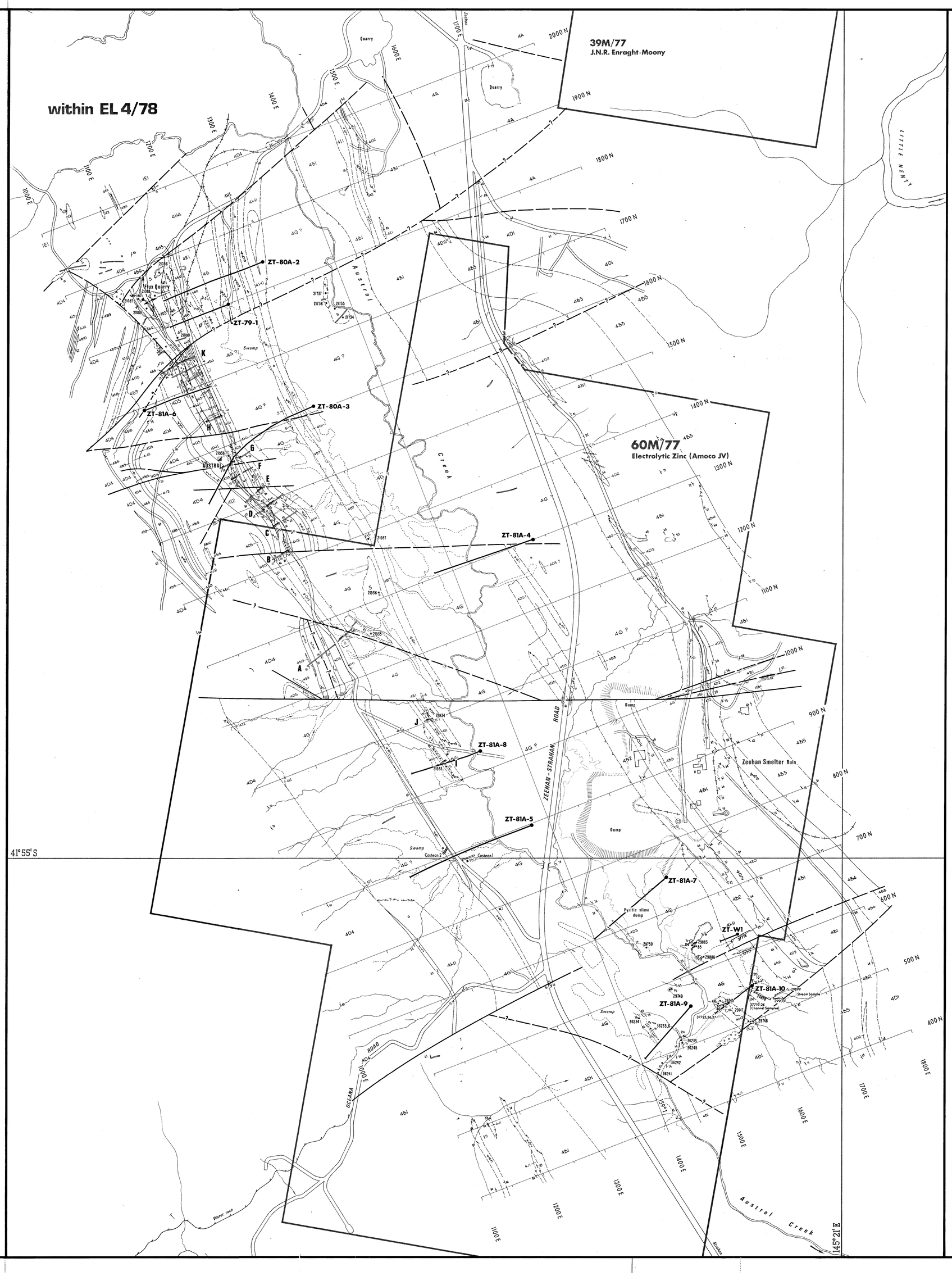
TERTIARY
- Basalt — 2C 2

DEVONIAN
- Florence Quartzite — 4A 26
  - Undifferentiated quartzites, sandstones, siltstones
- Amber Slate — 4D1 68
  - Siltstone interbedded with shales
- Crotty Quartzite
  - Undiff. sandstones, siltstones and grits — 4B1 6
  - Sandstone, massive — 4B2 6
  - Sandstone, cross bedded — 4B3 9
  - Sandstone, tubicolar — 4B4 44
  - Sandstone, white, friable — 4B5 6
  - Siltstone — 4D2 57
  - Conglomerate — 4I1 6
  - Grits — 4J1 6

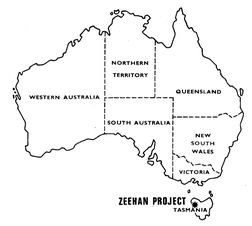
ORDOVICIAN
- Gordon Limestone
  - Sandstone — 4B6 63
  - Sandstone, fossiliferous — 4B7 63
  - Sandstone breccia — 4B8 63
  - Siltstone — 4D3 63
  - Shale — 4E1 63
  - Claystone — 4F 63
  - Limestone — 4G1 33
  - Limestone, fossil breccia — 4G2 46
  - Limestone, slumped — 4G3 41
  - Dolomite, black — 4H1 35
  - Dolomite breccia — 4H2 35
  - Dolomite, silicified — 4H3 35
  - Conglomerate — 4I2 66
  - Ironstone — 5 14
  - Mineralization — 5' 12
- Moina Formation
  - Sandstone, tubicolar — 4B9 10
  - Sandstone — 4B10 64
  - Undifferentiated — 4D4 64
  - Siltstone, tubicolar — 4D5 64
  - Dolomite — 4H4 64
  - Conglomerate — 4I3 64
  - Grit — 4J2 64
  - Ironstone — 5 14
- Mt. Zeehan Conglomerate
  - Conglomerate — 4I4 58

CAMBRIAN
- Crimson Creek Formation
  - Undifferentiated — 1E1 20
  - Tuff, volcano lith-arenite — 1E 2 20
  - Sandstone-tuff — 4B 11 20
  - Shale — 4E 2 20
  - Ironstone — 5 14
  - Siltstone — 4D6 20

PRECAMBRIAN
- Oonah Quartzite
  - Undifferentiated — 4A1 60
  - Micaceous quartzite — 4A2 60
  - Sandstone, brown — 4B12 60
  - Siltstone — 4D7 60



Location



Symbols

- Geologic contact, position accurate
- Geologic contact, position approximate
- Fault, position accurate
- Fault, position approximate
- Fault, inferred
- Unconformity
- Facies change
- Shear zone
- Zone of intense cleavage
- Brecciation
- Overturned bedding
- Measured dip and strike
- Plunging anticline (minor)
- Quartz vein (qtz)
- Outcropping Pb/Zn mineralization
- Shaft/prospecting pit
- Adit
- Underground workings
- Costean
- Cutting or quarry
- Dump
- Amoco rock chip location (36242)
- Amoco costean (B)
- Amoco drillhole

TN 11° MN

1:2500

0 100 200 meters

5 cm

88-2819

Cyprus Gold Australia Corporation

772045

Project	ZEEHAN			Nº A-78-608	
Project Partner					
Austral FACTUAL **GEOLOGY** showing rockchip locations					
Map Ref. ANG	K-55-5	Latitude	41°55'S	Longitude	145°20'E
Surveyed	P. Jones	Date	1981	Scale	1:2500
Drawn	S. Fowler	Date	1981	Drawing Nº M81-1725	

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