

CR 73/212

ANNUAL REPORT ON E.L. 247
KEEP RIVER

BY: AQUITAINE AUSTRALIA MINERALS PTY LTD

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1. SUMMARY

Exploration activity on E.L. 247 commenced in April 1973. Work concentrated on an occurrence of secondary Zn mineralization near where the Kununurra-Legune Road crosses Sandy Creek. A survey grid was pegged, the area was geologically mapped and 18 rotary-percussion drill holes were put down. Assay results indicate a limited down-dip and lateral extent of the high grade secondary Zn ore. No Pb or Zn sulphides were found.

Geological mapping along the margin of the Bonaparte Gulf Basin was carried out, concentrating on the Burt Range Formation, the only Paleozoic formation known to contain Pb-Zn mineralization in this area. Several outcrops with Pb and Zn $>5,000$ ppm were found.

Field work had to be halted in June when the Governmental approval of the joint venture between A.A.M., Conwest and Placer on this E.L. was not forthcoming.

When field work is to resume, it is recommended to concentrate on the search for sulphides. This should be done by IP in lines approximately perpendicular to the basin margin, 1000 m apart. Significant anomalies should be followed up by diamond drilling.

It is recommended to continue detailed geological mapping, which might help to locate possible stratigraphical and structural traps for ore bearing solutions. Geological mapping should be supported by shallow drilling to assist in the determination of geological boundaries and in the search for near surface secondary orebodies.

2. INTRODUCTION

On the 21st May, 1973 a progress report (MG 260) had been submitted. That report contained all results of exploration activities on this E.L. as they were available then. This Annual Report, therefore, deals only with work carried out and data obtained since then.

Exploration activity on E.L. 247 came virtually to a halt in June this year when it became apparent that the Federal Government's decision not to approve joint ventures between mining companies until a new policy had been formulated would delay also the approval of the agreement between A.A.M., Conwest and Placer. This decision caught us in the middle of our exploration work and subsequently many things had to be left incomplete. This applies particularly to mapping, but also the planned geophysical work and possible follow-up diamond drilling. We decided, however, to attach the geological maps, knowing full well that more detailed mapping would be required. But at least the maps in their current form can serve as basis for further work.

3. WORK CARRIED OUT

Since submission of report MG 260 all outstanding assay results have come in. They are plotted on the attached drill logs.

Geological mapping concentrated on areas where Burt Range Formation (Clb) was known to occur. This appears to be the only formation where Pb-Zn mineralization can be expected in this region. This formation lies disconformably on Kellys Knob Sandstone (Duk), a member of the Cockatoo Formation (Duc). It is disconformably (?) overlain by Point Spring Sandstone (Clp) or directly by Border Creek Formation (Cub).

The Burt Range Formation follows the margin of the Bonaparte Gulf Basin, i.e. it strikes NE and dips NW. It is largely eroded and approximately 90% of its expected outcropping is covered by Cainozoic black soil (Czb) or sand (Czs).

The formation is nowhere entirely exposed and it is difficult to establish a complete stratigraphical sequence. Also there often occurs a rapid facies change which complicates mapping. It appears that the lower Clb consists of sandstone and siltstone which are slightly dolomitic. This unit is overlain by fawn and grey calcareous dolomite which in turn has a transitional contact with an overlying yellow and white, siliceous sandstone.

During mapping work we tried to find more localities where secondary Zn-Pb ore outcrops, as at Sandy Creek. So far no such ore was found but in several cases we have geochemical anomalies with plus 5,000ppm Zn. These assay results need not be very significant, considering the high mobility of Zn-ions, but they indicate that in several places supergene enrichment has caused Zn concentrations, and it is quite conceivable that this process might have led somewhere to the formation of a secondary orebody.

Of the Paleozoic rocks, which are stratigraphically above Clb, only Cub has been recognized as occurring within E.L. 247. NW of the Sandy Creek crossing a ferruginous sandstone has been found, which could be Clp. We decided, however, to map it also as Cub, because there is no evidence of Clp in this area.

The question of the overlying rock unit is in any case not very important, as it does not appear to have any bearing on Pb-Zn mineralization within the Burt Range Formation.

4. CONCLUSIONS AND RECOMMENDATIONS

High grade, secondary Zn-ore has been found at the Sandy Creek crossing of the Kununurra-Legune road. Elsewhere anomalous Zn and Pb values have been found within the Burt Range Formation, giving rise to the hope that similar rich pockets as at Sandy Creek can be discovered.

The source of the supergene enriched ore is unknown; it appears to have a limited down dip extension, thickness and grade diminish rapidly. No Pb-Zn sulphides have been discovered so far. The only sulphide recognized is pyrite in dolomitic rock which underlies the mineralization at Sandy Creek.

The main objective of our exploration activity in future must be sulphide ore. Reserves of secondary ore will always be small.

Different approaches are required in the search for both ore types, particularly as there appears to be no direct connection between hypogene and supergene ore.

With weathering reaching down to 50 m and below, geophysical means followed by diamond drilling will have to be applied when searching for sulphides. IP has proved to be very successful in other parts of the Bonaparte Gulf Basin. It is therefore recommended to carry out a systematic dipole-dipole survey with lines 2,000 m long and 1,000 m apart at approximately right angles to the basin margin.

With the SE end of each line covering approximately the contact Dub/C1b, each line will give us a clear answer whether there is anywhere an accumulation of sulphides down to at least 300 m within the Burt Range Formation (the chance that a non-polarizable Sphalerite orebody could be overlooked is virtually nil, as it always would occur together with some pyrite). It might be worthwhile trying to supplement IP results with a number of readings with the so called "Mercury Sniffer", before carrying out diamond drilling.

The investigation for secondary ore would require continuation of detailed mapping, supported by auger or rotary drilling.

5. REFERENCE

Ramdohr, R. (May 1973)

Progress Report of
Exploration on E.L. 247
to 21.5.73 (MG 260).

6. EXPENDITURE

Expenditure recorded in our books from the 30th June 1972 to 29th June 1973 is as per attached sheet.

EXPENDITURE - E.L. 247

Accommodation and associated expenses	\$ 478.45
Motor vehicle expenses & rental	\$ 127.80
Air travel - personnel	\$ 365.51
Helicopter Tarrif 1	\$ 283.33
Map, photographs, mosaic	\$ 60.23
Miscellaneous land base expenses	\$ 411.29
Daily drilling rate/Tarrif 1	\$ 5,568.28
Other consultants - technical	\$ 25.00
Min. Geology - Lab. & associated expenses	\$ 2,246.19
Min. Geology - General expenses	\$ 336.27
Administration	\$ 3,400.12
Drating & Printing	\$ 5.80
Miscellaneous personnel expenses	\$ 26.35
Land transportation	\$ 63.42
Miscellaneous logistic expenses	\$ 10.94
Positioning (surveying)	\$ 259.18
Site & access preparation	\$ 7.24
Diamond bits & core bits	\$ 398.82
Stationery & supplies	\$ 5.12
Other analyses	\$ 102.32
Repairs & maintenance	\$ 31.46
Postage & duties	\$.56
Telecommunications (radio,phone,telex)	\$ 12.47
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	\$14,226.15
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A P P E N D I X

ABBREVIATIONS USED ON PERCUSSION DRILL LOGS.


Abbreviation

Meaning

&	and
calc	calcareous
Fe	iron (ferruginous)
l.p.h.	litres per hour
Mn	manganese (manganiferous)
N.F.A.	not for analysis
Pb	lead
pos	positive - refers to reaction with chemical reagents
qtz	quartz
qtzose	quartzose
sdst	sandstone
siltst	siltstone
Zn	zinc

DRILLING LOG


MG 260

PERMIT EL 247 STATE N.T.	P.D.H. 6000N/ 5750E Location Sandy Creek Azimuth Depression  Vertical	Hole drilled by Austral United Hole started 5/5/73 Hole completed 5/5/73 Hole logged by Peter d'Auvergne
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS		
			Pb (%)	Zn (%)	
0 - 2	NFA	yellow-red qtz sand & humic soil. Some highly weathered qtz sdst.			
2 - 4	NFA	highly oxidised qtz sdst. Much clay & qtz. sand			
4 - 6	174	yellow-brown friable qtz sdst. Much clay & qtz sand	.0034	.0010	
6 - 8	NFA	as above. Much more clay			
8 -10	175	as above.	.0016	.0034	
10-12	NFA	white clay & qtz sand.			
12-14	176	yellow qtz sand.with white clay galls.	.0028	.0024	
14-16	NFA	yellow qtz sand.			
16-18	177	as above. Rare white clay galls	.0016	.0022	
18-20	NFA	as above			
20-22	178	as above			
22-24	NFA	as above. Rare well rounded pebbles of yellow qtz sdst.			contamination suspected
24-26	179	well rounded yellow & brown qtz sdst pebbles. Qtz pebbles, sand & clay.	.0030	.0010	
26-28	NFA	as above			
28-30	180	yellow-white qtz sdst. Many pebbles as above. Much sand.	.0054	.0150	
		Hole abandoned due to lack of progress & caving Water table 14m			


DRILLING LOG

MG 260

PERMIT EL 247	P.D.H. 5700N/ 5600E Location Sandy Creek	Hole drilled by Austral United
STATE	Azimuth	Hole started 30/4/73
N.T.	Depression 	Hole completed 2/5/73
	Vertical	Hole logged by Peter d'Auvergne

DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0 - 2	NFA	red-brown clay & humic soil		
2 - 4	NFA	red-brown clay with brown qtz sdst frag- ment		
4 - 6	153	yellow-brown qtz sdst. White clay galls	.0036	.0048
6 - 8	NFA	yellow-brown qtz sdst. Some highly ferrug- inous red qtz sdst.		
8 -10	154	yellow-brown qtz sdst. Possibly Zn pos.	.043	.058
10-12	155	as above	.041	.11
12-14	156	yellow qtz sdst. Much Mn & Fe. Possibly Zn pos.	.096	.27
14-16	NFA	highly weathered & leached qtz sdst. White clay galls.		
16-18	157	as above. Much red clay	.036	.21
18-20	NFA	yellow qtz sdst. Much clay		
20-22	158	as above. Slightly Zn pos	.082	.40
22-24	NFA	yellow white qtz. sdst & qtz sand.		
24-26	159	as above. Some Mn & Fe. Slightly Zn pos	.045	.17
26-28	NFA	yellow-white qtz sdst.		
28-30	160	white-yellow & grey qtz sdst.	.11	.46
30-32	NFA	yellow qtz sdst. Partly ferruginous		
32-34	161	as above. Some Fe & Mn fragments. Slightly calc.	.30	.90
34-36	162	yellow qtz. sdst & calc. sand. Slightly Zn pos.	.39	.50
36-38	163	as above.	.22	.46
Hole abandoned. because casing dropped. Water inflow of 4500 l.ph at 22m.				

DRILLING LOG


PERMIT EL 247 STATE N.T.	P.D.H. 5600N/5550E Location Sandy Creek Azimuth Depression  Vertical.	Hole drilled by AUSTRAL UNITED Hole started 29/4/73 Hole completed 29/4/73 Hole logged by PETER D'AUVERGNE.
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0-2	NFA	red brown qtz. sand & clay. Some highly weathered qtz. sdst.		
2-4	NFA	as above.		
4-6	144	red-white highly Ferruginous qtz.sdst. A pure white qtz sdst is Zn pos.	.037	.043
6-8	145	as above	.068	.052
8-10	NFA	vuggy highly Mn & Fe yellow qtz sdst.		
10-12	146	yellow & red qtz sdst. & red clay. Clay Zn pos.	.066	.086
12-14	147	as above. Clays only slightly Zn. pos.	.09	.16
14-16	148	white-yellow ferruginous qtz.sdst & red clay.	.09	.27
16-18	NFA	as above.		
18-20	149	as above. Considerable Mn. Perhaps slightly Zn & Pb pos.	.078	.28
20-22	150	yellow qtz sand & qtz sdst Zn pos.	.096	.22
22-24	NFA	white-yellow qtz sdst.		
24-26	151	as above. Slightly ferruginous	.23	.39
26-28	NFA	yellow qtz sand with very small qtz. sdst. fragments.		
28-29	152	as above. Some grey qtz sds.fragments. Not pyritic.	.064	.14

Hole abandoned because of caving.
Water inflow of 4500 l.p.h. at 22 m.

DRILLING LOG


MG 260

PERMIT EL 247 STATE N.T.	P.D.H. 5500N/5450E Location SANDY CREEK Azimuth Depression  Vertical	Hole drilled by AUSTRAL UNITED Hole started 29.4.73 Hole completed 29.4.73 Hole logged by PETER D'AUVERGNE.
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0-2m	NFA	Red-brown qtz sand & clay		
2-4	NFA	as above. Some highly weathered ferruginous qtz. sandstone.		
4-6	137	yellow-brown fine grained qtz sdst. Some Fe & Mn fragments.	.023	.027
6-8	NFA	as above		
8-10	NFA	as above		
10-12	138	as above. Some dark brown qtz. sandst.	.22	.20
12-14	NFA	highly ferruginised yellow qtz. sandst. with qtz. filled vugs.		
14-16	139	as above	.30	.44
16-18	140	as above. May be Pb pos.	.15	.35
18-20	141	as above but less weathered & less vuggy.	.22	.31
20-22	NFA	yellow qtz sdst.		
22-24	142	as above. Minor Fe & Mn pieces. Clays slightly Zn. pos.	.59	.92
24-26	143	as above. Clays Zn pos.	.53	1.7
<p>Hole abandoned because of continuous caving. Water table at 18m Water inflow of 4500 l.p.h. at 22m</p>				

DRILLING LOG

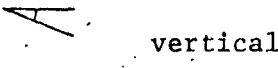
MC 260

PERMIT EL 247 STATE N.T.	P.D.H. 5200N/5210E Location Sandy Creek Azimuth Depression  Vertical	Hole drilled by AUSTRAL UNITED. Hole started 26.4.73. Hole completed 26.4.73 Hole logged by Peter d'Auvergne.
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0.2	74	Brown humic soil & clay. Fines strongly Zn pos. Slope wash likely	.15	.66
2-4	75	Brown weathered sandy dolomite. Clays & humus strongly Zn. pos.	.22	20.0
4-6	76	yellow-pink sandy dolomite Clays present.	.058	1.5
6-8	77	as above. Weathered grains with pitted surfaces strongly Zn pos	.045	1.5
8-10	78	yellow sandy dolomite. Poor Zn response	.045	1.4
10-12	79	Sandy dolomite & Calc.sdst.Zn.pos.	.048	2.9
12-14	80	Yellow, sandy dolomite strongly Zn pos.	.24	7.4
14-16	81	as above.	.29	8.5
16-18	82	as above.	.26	6.5
18-20	83	yellow sandy dolomite. Mn & Fe fragments. possibly fossiliferous.	.27	4.7
20-22	84	yellow-brown highly calc.qtz. sand. No fresh rock. Clays Zn. pos	.18	4.4
		Hole abandoned due to extremely slow progress. No water flow record available.		

DRILLING LOG


M.G.260

PERMIT EL.247 STATE N.T.	P.D.H. 5200 N 5150E Location Sandy Creek. Azimuth Depression 	Hole drilled by AUSTRAL UNITED. Hole started 16.4.73 Hole completed 16.4.73 Hole logged by R.RAMDOHR.
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0-2	1	Pale red sand...	.0018	.005
2-4	2		.002	.0048
4-6	3	White to reddish sandstone with increasing limonite, some clay	.064	.076
6-8	4		.076	.25
8-10	5		.096	.680
10-12	6	Sandstone with rounded q-grains.	.060	2.9
12-14	7	Clay matrix with much secondary Zn mineralization. 11 m water table	.064	3.4
14-16	8		.052	5.2
16-18	9	Some fa ^w n dolomite (Contact sandstone	.041	1.4
18-19	10	-dolomite ?), Zn reaction	.012	0.2
Hole abandoned due to sand wash-in from top.				

DRILLING LOG

MG 260


PERMIT EL 247 STATE N.T.	P.D.H. 5200N/5100E Location Sandy Creek Azimuth Depression  Vertical	Hole drilled by Austral United Hole started 17/4/73 Hole completed 22/4/73 (after completion of fishing for hammer bit) Hole logged by R. Ramdohr
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0- 2	11	Sand	.0024	.016
2- 4	12	grey-yellow, hard sandstone some	.0100	.04
4- 6	13	colloform limonite	.042	.16
6- 8	14	11 m seepage	.062	.35
8-10	15	glassy quartz in yellow sandy matrix	.078	.50
10-12	16	Slight Zn reaction in the clay fraction	.051	.53
12-14	17	water table ~ 15m	.068	.78
14-16	18	increasingly fresh, grey sandstone with	.049	1.25
16-18	19	some reddish shale	.038	1.1
18-20	20		.019	.35
20-22	21		.019	.28
22-24	22	friable sandstone (oxidised) with	.023	.36
24-26	23	Zn reaction in clay fraction	.045	.98
26-28	24	fresh sandstone with angular-quartz grains	.064	2.4
28-30	25	Zn-reaction in clay fraction	.068	3.0
30-32	26		.04	2.1
32-34	27		.037	.9
34-36	28		.037	1.3
36-38	29	grey-blue sandstone with clay, showing	.027	.82
38-40	30	Zn reaction (contamination ?).	.032	1.4
40-42	31		.029	.52
42-44	32		.032	1.3
44-46	33		.035	1.3

Hole abandoned because of high water inflow which hampers progress too much

DRILLING LOG


MG 260

PERMIT EL 247 STATE N.T.	P.D.H. 5200N/5050E Location Sandy Creek Azimuth Depression  Vertical	Hole drilled by Austral United Hole started 18/4/73 Hole completed 19/4/73 Hole logged by R. Ramdohr
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0- 2	34	Sand	.0016	.005
2- 4	35	red-white soft sandstone	.003	.012
4- 6	36	whitebleached sandstone, soft	.017	.044
6- 8	37	white-yellow, reddish medium grained	.108	.36
8-10	38	sandstone, slightly limonitic	.108	.27
10-12	39	increasing grey clay	.060	.22
12-14	40	fresh hard grey sandstone	.030	.24
14-16	41	17 m water table	.045	.37
16-18	42	clay within sandstone	.072	.53
18-20	43	fawn sandstone, vugs with	.064	.66
20-22	44	quartz crystals	.043	.58
22-24	45	fawn sandstone, fractured	.052	.56
24-26	46		.078	.48
26-28	47		.066	.41
28-30	48		.09	.29
hole abandoned due to collapsing of walls caused by strong water inflow				

DRILLING LOG


MG 260

PERMIT EL 247	P.D.H. 5200N/5000E	Hole drilled by AUSTRAL UNITED.
STATE	Location SANDY CREEK	Hole started 21.4.73
N.T.	Azimuth	Hole completed 23.4.73
	Depression 	Hole logged by Peter d'Auvergne.
	Vertical	

DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0-2	NFA	yellow-brown qtz. sand. Fine grained		
2-4	NFA	ditto. Some poorly consolidated sdst. particles.		
4-6	NFA	ditto. Slight increase in grain size.		
6-8	NFA	yellow-brown qtz. sdst. loosely cemented by white clay. Fe & Mn stained.		
8-10	49	ditto, but more Fe & less Mn stain.	.098	.096
10-12	50	yellow-brown sdst, (weathered) & fresh grey sdst. Zn pos.	.49	.72
12-14	51	yellow-brown sdst. much red clay, Mn & Fe fragments, Cavity qtz.	.14	.31
14-16	NFA	ditto.		
16-18	NFA	ditto		
18-20	NFA	red mud with rounded qtz. grains.		
20-22	NFA	grey calc. qtz sdst, weathered to yellow-brown.		
22-24	NFA	yellow calc. qtz. sdst. Probably highly compact. Minor Fe & Mn.		
24-26	NFA	ditto		
26-28	52	ditto	.043	.25
28-30	53	yellow calc. qtz. sdst. Cavity fillings of qtz., Mn & Fe. Zn pos.	.096	.42
30-32	54	yellow calc. fossiliferous qtz. sdst.	.034	.50
32-34	55	grey calc. qtz sdst. weathering yellow.	.066	.48
34-36	56	ditto	.023	.38
36-38	57	ditto.	.15	.94
38-40	58	white-yellow qtz. sdst. Minor Fe & Mn. Qtz lined vugs.	.28	.74
40-40.5	59	ditto.	.076	.32
<p>Holed abandoned due to slow progress and water inflow. Water table 18m Water inflow of 4500 litres p.h at 30m water inflow of 9000 l.p.h. at 33m.</p>				

DRILLING LOG


MG 260

PERMIT EL 247	P.D.H. 6200N/5750E	Hole drilled by Austral United
STATE N.T.	Location Sandy Creek	Hole started 5/5/73
	Azimuth	Hole completed 5/5/73
	Depression 	Hole logged by
	Vertical	Peter d'Auvergne

DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS		
			Pb (%)	Zn (%)	
0 - 2	NFA	yellow qtz sand. Red & yellow white qtz sdst.			
2 - 4	NFA	as above.			
4 - 6	181	yellow qtz sand. Some yellow qtz sdst & Mn fragments,	.0034	.0110	
6 - 8	NFA	yellow & red very fine grained qtz sand. Much white clay			
8 - 10	182	white & yellow qtz sand of variable grain size. Very little clay.	.0086	.0042	
10-12	NFA	as above. Much clay			
12-14	NFA	as above.			
14-16	183	as above. Large pieces white calc. material with included qtz grains.	.2100	.1600	
16-18	184	as above. Yellow brown qtz. sdst. May be Pb pos	.1200	.0900	
18-20	185	as above	.1400	.1300	
20-22	186	yellow brown qtz sdst. White calc grains. Much brown clay Zn pos.	.0740	.1900	
22-24	187	as above	.0250	.0880	
24-26	NFA	as above			
26-28	188	as above. Brachiopod fragments. Much yellow qtz sand.	.0210	.1300	
28-30	NFA	as above			
30-32	189	yellow calc. qtz. sand & yellow qtz. sdst Some Mn fossiliferous	.0270	.1700	contamination suspected
32-34	190	as above	.0074	.0410	
		Hole abandoned because of caving & lack of progress Water inflow of 9000 lph Water table 14m			

DRILLING LOG


MG 260

PERMIT EL 247 STATE N.T.	P.D.H. 5800N/5750E Location Sandy Creek Azimuth Depression  Vertical	Hole drilled by AUSTRAL UNITED. Hole started 4/5/73 Hole completed 5/5/73 Hole logged by Peter d'AUVERGNE.
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS		
			Pb (%)	Zn (%)	
0-2	NFA	red yellow qtz sand.			
2-4	NFA	as above. Some highly weathered qtz. sdst.. Some Mn.			
4-6	164	yellow qtz sdst. Mn nodules. Some white calc.. fragments.	.0036	.0032	
6-8	165	yellow qtz. sand. White clay galls. Some Mn.	.0022	.0016	
8-10	NFA	as above.			
10-12	166	as above.	.0032	.0032	
12-14	NFA	yellow qtz sdst. Slightly manganese stained. Often ferruginous.			
14-16	167	as above. White calc. pieces. Much red clay.	.1200	.3100	
16-18	NFA	as above. Calc. material appears to be a cavity or joint filling, & not a primary deposit.			
18-20	168	as above.	.1100	.3500	The interval 24-36m. was resamples to confirm earlier results. The "New" analyses are shown below
20-22	NFA	as above.. Less calc. material. Sdst. may be Zn positive			
22-24	169	white-yellow qtz sdst. White calc. pieces becoming manganiferous.	.1100	.2800	
24-26	NFA	as above.			Depth Sample Pb Zn (m) No. (%) (%) 24-26 438 .2900 1.2
26-28	170	white-yellow qtz. sdst. White calc. Cavity fill. Much Fe & Mn.	.3900	2.0	26-28 439 .3800 1.95
28-30	NFA	highly weathered yellow qtz sdst. Highly hematitic.			28-30 440 .3300 1.9
30-32	171	as above. Rare fresh grey qtz sdst. Pyrite in limonitic material.	.2000	1.1	30-32 441 .1700 1.15
32-34	172	as above. Minor white calc. material.	.2400	1.4	32-34 442 .1800 1.3
34-36	173	as above. Much fresh grey highly pyritic qtz. sdst.	.2100	1.1	34-36 443 .1600 1.0
		Hole abandoned because of very hard rock and extremely high water inflow. Water table 14 m.			

DRILLING LOG

MG 260

PERMIT EL 247 STATE N.T.	P.D.H. 5400N/5300E Location Sandy Creek Azimuth Depression  Vertical	Hole drilled by Austral United Hole started 25/4/73 Hole completed 25/4/73 Hole logged by Peter d'Auvergne
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0- 2	85	red brown soil with small qtz sdst frag- ments	.14	.05
2- 4	86	fine grained yellow-pink sparsely fossil- iferous qtz sdst	.10	.10
4- 6	87	yellow-pink qtz sdst	.098	.12
6- 8	88	brown-red clay with yellow qtz sdst frag- ments. Some Mn	.35	.29
8-10	89	yellow qtz sdst. Much Fe & Mn. Zn & Pb pos	.40	1.2
10-12	90	as above, highly weathered. Zn & Pb pos	.56	1.8
12-14	91	brown qtzose clay. Highly ferruginous & weathered qtz sdst. Zn & Pb pos	.39	1.4
14-16	92	as above	.46	1.2
16-18	93	as above	.91	2.1
18-20	94	as above	1.02	4.0
20-22	95	as above	.91	6.0
22-24	96	yellow-brown silt with highly weathered Fe material. Zn (?Pb) pos	.95	6.0
24-26	97	yellow-brown calc silt & sandy dolomite grains. Strongly Zn pos	.67	4.3
26-28	98	yellow-brown mixture of dolomite & qtz rock. Strongly Zn pos	.35	2.7
28-30	99	as above. grain size of sandstone increas- ing. Zn pos	.22	1.9
30-32	100	as above. Only slightly Zn pos. Galls of white clay	.26	2.5
32-34	101	white slightly calc. fine grained qtz sdst. Rare dolomite. Zn pos	.22	1.5
34-36	102	white calc. qtz sdst. Only weakly Zn pos	.26	1.6
36-38	103	as above	.24	1.1
38-40	104	yellow-grey slightly sand dolomite	.18	1.0
40-42	105	white calc. qtz sdst. Slightly Mn & Fe weathered. Weekly Zn pos	.11	.42
42-44	106	as above	.19	1.4
44-46	107	as above	.12	.73


Hole abandoned because of lack of progress

Water inflow of 2800 lph at 20 m

Water inflow of 4500 lph at 30 m

DRILLING LOG


MG 260

PERMIT EL 247 STATE N.T.	P.D.H. 5300N/5225E Location Sandy Creek Azimuth Depression  Vertical	Hole drilled by Austral United Hole started 26/4/73 Hole completed 29/4/73 Hole logged by Peter d'Auvergne
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS		
			Pb (%)	Zn (%)	
0-2	108	red-brown humic soil. Some vuggy Fe/qtz fragments	.023	.10	
2-4	109	highly weathered yellow ferruginous qtz sdst. Some vuggy material	.058	.35	
4-6	110	highly weathered yellow qtz sdst. Some clay Strongly Zn pos	.051	3.3	
6-8	111	yellow sandy dolomite. Fine strongly Zn pos	.094	3.2	
8-10	112	fresh grey & yellow weathered calc. qtz sdst. Weakly Zn pos	.041	.84	
10-12	113	yellow weathered qtz sdst. Much clay. Weathered material Zn pos	.32	6.0	
12-14	114	as above	.23	4.0	
14-16	115	highly calc qtz sand. Some weathered qtz sdst & minor dolomite. Zn pos	.09	1.7	
16-18	116	yellow & grey slightly sandy dolomite. Minor sdst Zn pos	.058	1.1	
18-20	117	as above	.048	1.6	
20-22	118	yellow sandy dolomite. Clays are Zn pos	.14	3.0	
22-24	119	as above. Large pieces of (?)hemimorphite. Zn pos	.16	3.0	
24-26	120	as above	.11	3.4	
26-28	121	as above. Grains fresh grey qtz sdst with disseminated pyrite	.07	1.5	
28-30	122	yellow sandy dolomite with minor grey qtz sdst. Slightly Zn pos	.05	1.6	
30-32	123	as above	.066	1.6	
32-34	124	as above. Increase in grey qtz sdst. Some calc grains. Clays Zn pos	.040	1.1	
34-36	125	as above	.043	1.2	
36-38	126	hard grey pyritic qtz sdst. Some calc grains. Clays Zn pos	.038	.75	
38-40	235	as above. Some highly weathered qtz sdst is strongly Zn pos	.036	1.0	
40-42	127	hard grey qtz sdst. Pyrite rare. Very few dolomite grains. Zn pos	.035	1.0	
42-44	236	as above	.028	.72	
44-46	128	sandy dolomite with hard grey qtz sdst. Weathered sdst Zn pos	.031	0.72	
46-48	237	hard grey qtz sdst. No visible mineralisation	.024	.58	dolomitic material likely to be due to contamination from higher levels in the hole
48-50	129	as above. Increasing dolomite. Some clay galls Zn pos	.046	1.3	
50-52	238	as above. Very finely disseminated pyrite. Calc sand. Clays Zn pos	.027	.64	
52-54	130	as above. Euhedral pyrite suggests open nature or cavity fill	.035	0.82	
54-56	239	hard dark grey qtz sdst. Possibly pyritic	.029	.54	
56-58	131	as above but no visible mineralisation. Some calc. sand & weathered sdst. Zn pos	.035	.88	
58-60	240	dark grey pyritic qtz sdst. Some weathered sdst. Zn pos	.037	.70	

Cont.


DRILLING LOG

PERMIT EL 247 STATE N.T.	P.D.H. 5300N/5225E (Cont) Location Sandy Creek Azimuth Depression  Vertical	Hole drilled by Austral United Hole started 26/4/73 Hole completed 29/4/73 Hole logged by Peter d'Auvergne
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
60-62	132	as above but no visible pyrite	.025	.47
62-64	NFA	as above. Considerable amount of calc sand		
64-66	133	slightly pyritic grey qtz sdst. Some calc sand & highly weathered rock. Zn pos	.025	.48
66-68	NFA	as above		
68-70	134	grey qtz sdst probably with very finely disseminated pyrite. Zn pos clays	.033	.38
70-72	NFA	as above		
72-74	135	grey qtz sdst. Disseminated & vein pyrite. Calc sand. Zn pos clay galls	.026	.50
		Sample 136 was prepared by washing sandy material from a sample of the grey pyritic qtz sandstone to remove the calcareous and clay fractions which are often Zn mineralised. The sample was taken from 36-74 metres.	.027	.35
		Hole abandoned as rig settled obliquely and could not be reset due to soft ground. Water flow of 900 l.ph at 22 m.		

DRILLING LOG


MG 260

PERMIT EL 247 STATE N.T.	P.D.H. 5300N/5100E Location Sandy Creek Azimuth Depression  Vertical	Hole drilled by Austral United Hole started 23/4/73 Hole completed 25/4/73 Hole logged by Peter d'Auvergne
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0- 2	NFA	brown clay & organic layer		
2- 4	NFA	qtz sand. Lumps of sand loosely aggregated by a white clay		
4- 6	NFA	white-yellow fine grained qtz sand		
6- 8	NFA	ditto. Minor Fe & Mn fragments. Some qtz grains loosely Fe cemented		
8-10	NFA	Highly ferruginised yellow-brown qtz sdst. Nodular. Much white clay		
10-12	NFA	red mud with white qtz sdst & Mn fragments		
12-14	232	ditto	.6800	.7600
14-16	233	red brown mud with minor qtz grains	.3600	1.4
16-18	234	ditto	.2000	1.6
18-20	60	ditto	.22	2.5
20-22	61	white-yellow qtz sdst. Some vuggy qtz. Slightly Zn pos	.15	1.0
22-24	62	ditto but with a stronger Zn reaction	.13	.79
24-26	63	fresh grey & yellow weathered qtz sdst	.09	.58
26-28	64	ditto Fe & Mn present. Cubic cavity in qtz gave Zn pos	.12	.50
28-30	65	fresh grey & yellow weathered qtz sdst	.080	.48
30-32	66	yellow qtz sdst. Some limonite grains. Zn pos	.045	.26
32-34	67	as above. Some vein qtz present	.047	.31
34-36	68	yellow qtz sdst	.026	.27
36-38	69	compact grey pyritic qtz sdst	.023	.19
38-40	NFA	grey & yellow calc qtz sdst. Minor pyrite		
40-42	70	yellow qtz sdst. Vuggy, with Fe & Mn	.037	.48
42-44	NFA	yellow calc. qtz sdst. Considerable limonite		
44-46	71	yellow calc qtz sdst. Vuggy qtz crystals	.032	.30
46-48	NFA	as above. Minor Fe staining. Slightly Zn pos		
48-50	72	white-yellow qtz sdst. Vuggy qtz	.027	.18
50-52	NFA	yellow-brown calc qtz sdst. Some Fe staining		
52-53.5	73	yellow-brown slightly calc qtz sdst	.01	.12
Hole abandoned due to lack of progress and caving				
Water table 14 m.				
Water inflow of 2800 l.ph at 20 m.				


DRILLING LOG

MG 260

PERMIT EL 247 STATE N.T.	P.D.H. 5000N/5100E Location Sandy Creek Azimuth - Depression  Vertical	Hole drilled by Austral United Hole started 8/5/73 Hole completed 9/5/73 Hole logged by Peter d'Auvergne
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DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0- 2	NFA	Yellow qtz sand & humic soil. Some highly Mn qtz sdst		
2- 4	NFA	Highly oxidised qtz sdst. Clay cemented qtz aggregates		
4- 6	218	as above	.0060	.0062
6- 8	NFA	as above. White clay galls. Much red clay		
8-10	219	highly Fe qtz sdst. Loosely clay cemented qtz aggregates. Red clay	.0410	.0420
10-12	NFA	white-yellow medium grained qtz sdst. White clay galls. Some Mn		
12-14	220	as above	.0520	.0640
14-16	221	as above. Highly Mn. Red clays may be Zn pos	.1200	.1500
16-18	222	as above. No zinc reaction	.0820	.1500
18-20	NFA	white fine grained qtz sdst. Much red clay & Mn. White clay galls		
20-22	223	as above	.0480	.5500
22-24	NFA	as above		
24-26	224	as above	.0640	1.3
26-28	NFA	yellow fine grained qtz sdst. Very little Mn & red clay		
28-30	225	yellow highly calc qtz sdst. Grey qtz sdst. Very little clay	.0480	.5100
Hole abandoned because of slow progress				
Water table 20 m.				

DRILLING LOG


PERMIT EL 247	P.D.H. 5000N/ 5300E	Hole drilled by Austral United
STATE	Location Sandy Creek	Hole started 6/5/73
N.T.	Azimuth	Hole completed 6/5/73
	Depression  Vertical	Hole logged by Peter d'Auvergne

DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0 - 2	NFA	red very fine grained sandy soil		
2 - 4	NFA	as above		
4 - 6	191	as above. Some white clay galls Mn fragments.	.0330	.0520
6 - 8	192	yellow very sandy dolomite. Some Mn	.2500	.4000
8 - 10	193	as above	.1000	.4200
10-12	194	red-yellow clay with white clay galls. Minor dolomite & qtz.	.0058	.1800
12-14	195	as above. May be Zn pos.	.0070	.3000
14-16	196	red clay & highly decomposed sandy dolomite Zn pos.	.0072	2.4
16-18	197	highly zinciferous red clay. Rare sandy dolomite	.0048	5.4
18-20	198	Micaceous dolomite with very little qtz. Some clays highly Zn pos	.0046	2.3
20-22	199	yellow dolomite. Minor clays. Fossil frag- ments. Zn pos.	.0082	1.2
22-24	200	as above but not fossiliferous.	.0260	1.5
24-26	201	as above. Mn dendroids on the dolomite. Highly decomposed.	.0330	.7200
26-28	202	as above	.0640	.5500
28-30	203	as above. Laminated micaceous grey calc. siltst. Nz pos.	.0640	.6000
30-32	204	as above. Siltstone a minor constituent. Zn pos	.2300	.5000
32-34	205	as above. Only weakly Zn pos	.0430	.7200
34-36	206	as above. Highly manganiferous. Zn pos.	.0720	.6000
36-37	207	as above. Less Mn. Only weakly Zn pos.	.2600	.6000

Hole abandoned due to lack of progress
Water table at 14m
Water inflow of 9100 l.p.h. at 30m.

DRILLING LOG

MG 260

PERMIT EL 247 STATE N.T.	P.D.H. 4900N/5100E Location Sandy Creek Azimuth - Depression  Vertical	Hole drilled by Austral United Hole started 9/5/73 Hole completed 10/5/73 Hole logged by Peter d'Auvergne
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
DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS	
			Pb (%)	Zn (%)
0- 2	NFA	brown humic soil yellow qtz sand Fe & clay cemented qtz aggregates		
2- 4	226	yellow fine grained qtz sand. Some yellow qtz sdst. Minor Fe & Mn	.0022	.0014
4- 6	NFA	white fine grained qtz sand. Yellow Mn cemented qtz sdst. Minor clay		
6- 8	227	white qtz sand. White clay galls clay cemented qtz aggregates Zn pos	.0054	.0056
8-10	228	as above. Some Mn qtz sdst & Mn fragments	.0120	.0104
10-12	NFA	as above. Some Fe material		
12-14	229	as above. Yellow highly Mn qtz sdst	.0250	.0250
14-16	NFA	white-yellow qtz sand. Yellow qtz sdst. White qtz. white & red clays		
16-18	230	red clay. White-yellow highly calc. qtz sdst. White clay galls	.0086	.0370
18-20	NFA	red clay. White-yellow highly calc. qtz sdst. White clay galls		
20-22	231	red clay. Highly leached white calc. siltst white calc grains	.0240	.2400

Hole abandoned because of slow progress

Water table 20'm.

DRILLING LOG

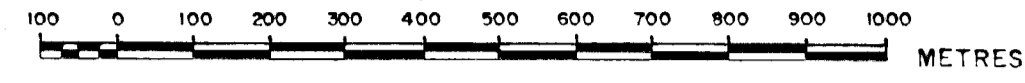
MG 260

PERMIT EL 247	P.D.H. 4900N/5300E	Hole drilled by Austral United
STATE	Location Sandy Creek	Hole started 7/5/73
N.T.	Azimuth	Hole completed 7/5/73
	Depression  Vertical	Hole logged by Peter d'Auvergne

DEPTH (metres)	SAMPLE NUMBER	DESCRIPTION	ASSAYS		
			Pb (%)	Zn (%)	
0 - 2	NFA	very fine grained humic soil & qtz sand			
2 - 4	NFA	as above. Increasing grain size			
4 - 6	208	yellow qtz sand, irregular grain size. Grains angular & rounded	.0046	.0080	
6 - 8	209	as above. Some white clay galls	.0024	.0024	
8 - 10	NFA	as above. Some Mn fragments			
10 - 12	210	Manganiferous highly decomposed fossilifer- ous qtz sdst.	.0480	.0760	
12 - 14	NFA	as above, possibly calcareous. Some white clays			
14 - 16	211	as above, calcareous	.0240	.1100	
16 - 18	NFA	yellow qtz sand. White clay galls			
18 - 20	212	as above. Fossil fragments	.0038	.0400	
20 - 22	NFA	as above			
22 - 24	213	yellow qtz sdst & white yellow qtz. sand white clay galls	.0066	.1200	
24 - 26	NFA	as above. Some brown qtz. sdst.			
26 - 28	214	White poorly indurated qtz sdst. Grey very fine grained calc. qtz siltst.	.0028	.0350	
28 - 30	NFA	highly calc. yellow qtz sdst. Some grey siltst.			
30 - 32	NFA	white qtz sand. Yellow qtz sdst. Some Mn staining			Contamination sus- pected.
32 - 34	215	grey micaceous highly calc siltst. Yellow qtz sdst.	.0028	.0360	
34 - 36	216	Yellow-brown very poorly indurated highly calc. sdst.	.0040	.0560	
36 - 38	NFA	as above. Grey micaceous calc. sdst.			
38 - 39	217	grey micaceous calc. siltst. Yellow-brown poorly indurated calc. qtz sdst.	.0086	.0800	
		Hole abandoned because of slow progress Water table 18m Water inflow of 9100 lph at 36m.			

EL 247
NORTHERN TERRITORY
KEEP RIVER PROSPECT
GEOLOGICAL MAP

SCALE — 1 : 10 000

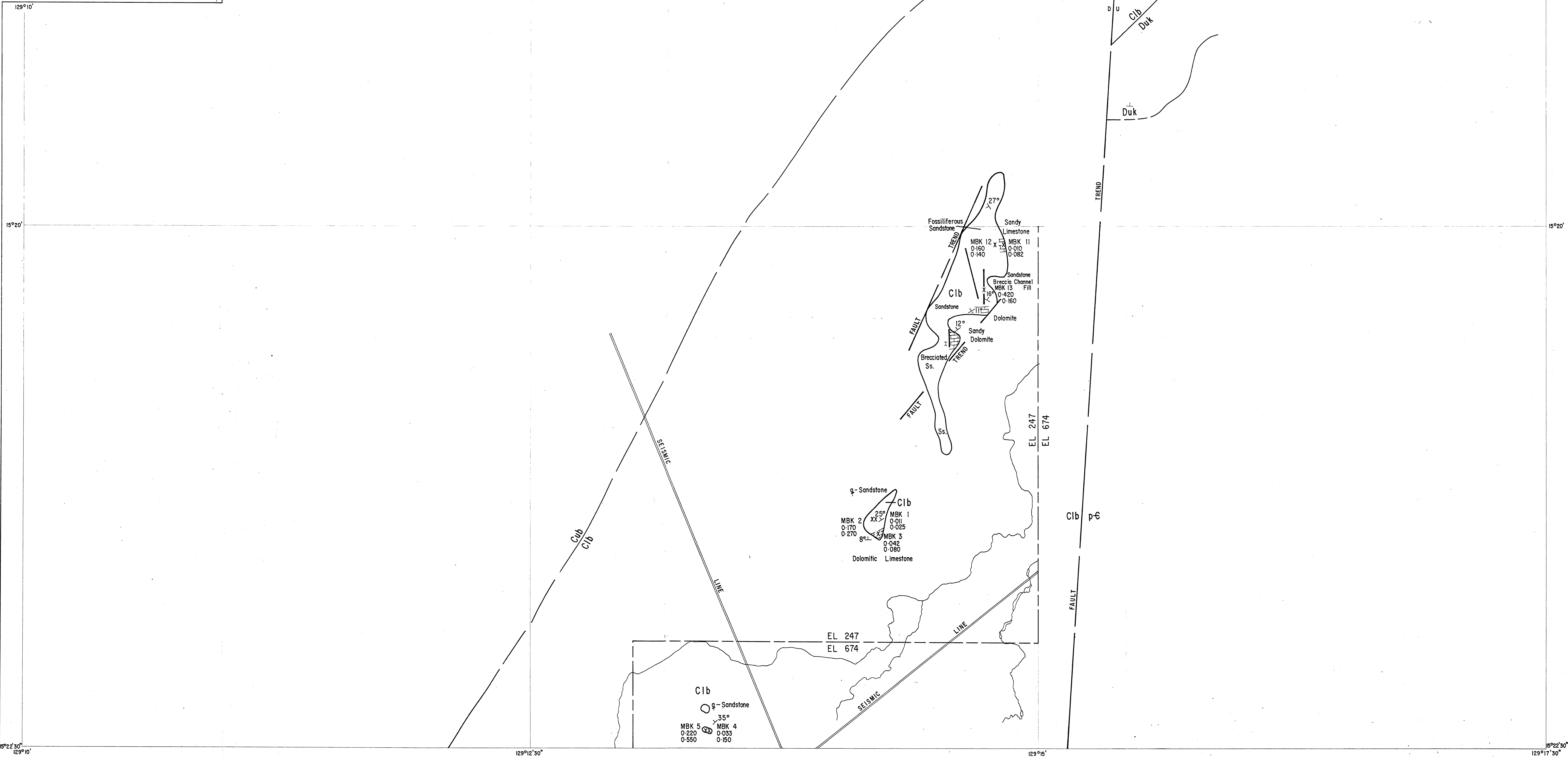


- OUTCROP BOUNDARY
- - - GEOLOGICAL BOUNDARY
- - - INFERRED GEOLOGICAL BOUNDARY
- FAULT
- U UP - FAULTED
- D DOWN - FAULTED
- - - INFERRED FAULT
- EL 247
EL 674 EL BOUNDARY
- - - TRACK
- GRAVEL ROAD
- + STRIKE AND DIP OF STRATA

- | | | | |
|---------------------|---|-------------------------------------|---|
| CAINOZOIC | UNDIFFERENTIATED | Czs SAND | Czb BLACK SOIL |
| UPPER CARBONIFEROUS | BORDER CREEK FM. | Cub CONGLOMERATE, QUARTZ SANDSTONE | |
| LOWER CARBONIFEROUS | BURT RANGE FM. | Cib QUARTZ SANDSTONE | Cib DOLOMITIC, DOLOMITIC AND CALCAREOUS SANDSTONE |
| UPPER DEVONIAN | BUTTON BEDS
GOKATOO SANDSTONE
KELLYS KNOB SANDSTONE | Dub COARSE-GRAINED QUARTZ SANDSTONE | Duf FERRUGINOUS SANDSTONE, CONGLOMERATE |
| PRECAMBRIAN | UNDIFFERENTIATED | Duk PEBBLY QUARTZ SANDSTONE | p-g QUARTZITE |

- | | |
|----------|--------------------------------|
| X MBK 13 | SAMPLE LOCATION AND SAMPLE NO. |
| 0-420 | Pb. VALUE (%) |
| 0-160 | Zn. VALUE (%) |

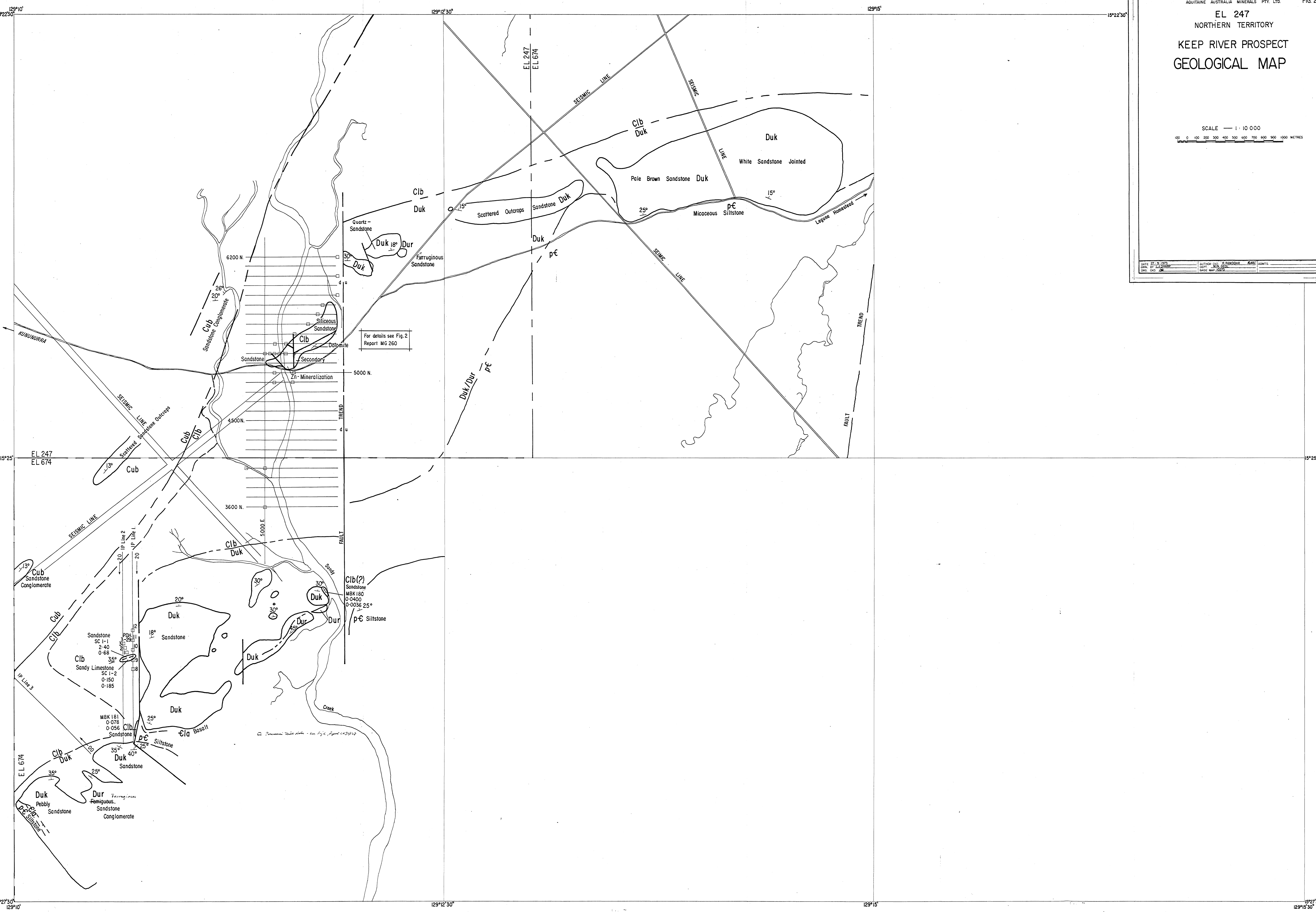
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DRAWN BY M. GIBSON	DATE 22/9/73	
CHKD. C.D. R.	BASE MAP 10072	



EL 247
NORTHERN TERRITORY
KEEP RIVER PROSPECT
GEOLOGICAL MAP

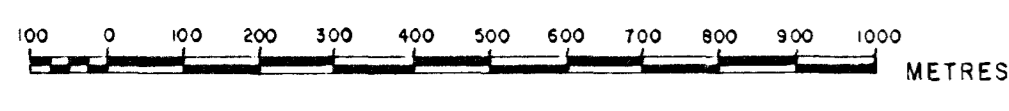
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DRAWN BY: J.J. 2018
CHKD: J.R.
AUTHOR: G.C. R. RAMSAY
DEPT: MIN. SEC.
SCALE: 1:10,000
DATE: MAR 1972



EL 247
NORTHERN TERRITORY
KEEP RIVER PROSPECT
GEOLOGICAL MAP

SCALE — 1 : 10000



DATE: 27/11/73	AUTHOR: C.D. RAMCOOR	ADMTS:
DRAWN BY: C. RAMCOOR	CHECKED BY: M. GILL	
ORIG. NO.:	BASE MAP: 2874	

