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PINE CREEK GOLDFIELDS LIMITED

ANNUAL REPORT ON MCN 1162 AND MCN 1163

BONROOK NORTH PROJECT

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MINE GEOLOGISTS
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Abstract

This report describes the results of work on two mining claims; N1162 and N1163; granted to Pine Creek Goldfields in 1986 (Fig 1).

These leases have been gridded, and undergone detailed geological mapping. This was followed by a rock chip sampling and preliminary soil sampling program.

The work has located an apparently discontinuous quartz veined zone trending parallel to a westerly dipping greywacke ridge. Anomalous Au, Cu and As mineralisation occur along the zone and further soil sampling work and rock chip work is recommended.

If continuity of the mineralisation is established a limited percussion drilling program should be carried out.

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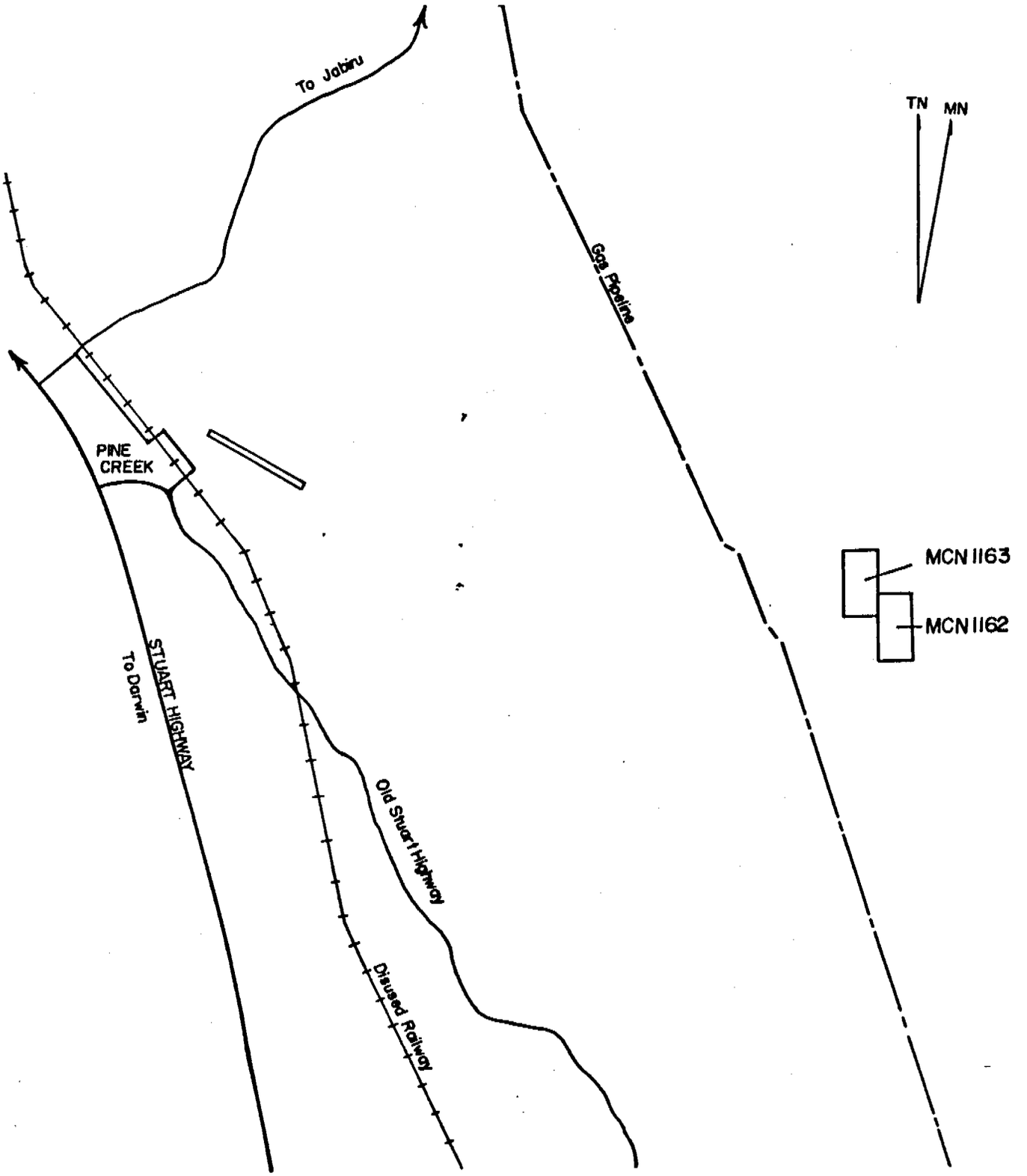
1. INTRODUCTION

During reconnaissance work Pine Creek Goldfields (PCG) geologists located significant quartz veining 7 kms east of the Enterprise mine. This was pegged and applied for under two mineral claims N1162 and 1163 (Figure 1).

These tenements were granted on the 20th August, 1986 for three years and lie within EL4955. The term of the claims was subsequently extended for a further 12 months to permit completion of exploration programs.



PINE CREEK GOLDFIELDS LIMITED			
MCN's 1163, 1162			
LOCATION PLAN			
FIGURE 1			
DRAWN	SJR	DATE	Dec. '86

2. WORK UNDERTAKEN DURING 1989

Early in the 1989 field season, a grid was re-established and extended. Detailed geological mapping to produce a fact map at 1:1,000 scale was undertaken. This was followed by rock chip and soil sampling.

Soil sampling was conducted at 25 m intervals along four 300-400 m long lines, spaced 250 m apart. The 5-15 cm depth interval was sampled, the top 5 cm of float and vegetation being removed.

Rock chip sampling was carried out across many of the quartz outcrops. Rock chips were taken evenly across the strike of the outcrop where possible. Otherwise grab samples of the subcrop were taken. In addition selective grab samples of strongly weathered, Fe-rich quartz, and gossanous material were also taken (Appendix 1).

3. GEOLOGY

3.1 General

Detailed mapping of both leases indicate quartz blows and veins within N.W. to S.E. striking greywackes and conglomerates of the Burrell Creek Formation. These sediments lie within an embayment of the Cullen Batholith.

Outcrop over both leases is quite variable. A strongly outcropping band of greywacke, and conglomerate runs through the central eastern area of MCN 1163 and the northern area of MCN 1162. Outcrop is rubbly with insitu boulders ranging from 30 cm to 2 m in diameter. Similar good rubbly outcrop of greywacke at the far S.W. corner of MCN 1162 and of a thick quartz blow in the centre of MCN 1163, give good exposure in the area.

Float is a mixture of quartz and greywacke rubble, which occurs over most of the area. The low relief (maximum of 10 m) suggests that much of this float is near its original location. If this is so, the large amount of quartz float could indicate more quartz bodies then are shown on the geological map (Figure 2).

Some of the extreme southern area of MCN 1163 and, much of the central and southern area of MCN 1162 is alluvium with no float or outcrop.

3.2 Stratigraphy

The leases contain south-west facing and dipping greywackes and conglomerates of the Burrell Creek Formation. The dominant lithology is greywacke with two mappable conglomerate beds of variable thicknesses in the east. Minor silt and quartzites were also observed. These sediments have been intruded by the Cullen Batholith which encloses the leases to the south and east. Isolated outcrops of granite have been found in both leases. Numerous quartz blows and veins generally parallel to bedding occur within the greywackes.

The greywackes have a hornfelsic texture being massive and crystalline with occasional layering and sedimentary structures such as cross-bedding. They generally occur in two forms, the most common crops out as dark grey, medium grained, quite siliceous, and hard rock, micas in this type coarsen considerably to 1 cm or more near the granite in the south western corner of MCN 1162. The second variety is more feldspathic and micaceous, weathering easily, and often having a spotty appearance.

The conglomerates are matrix supported, the matrix being a crystalline quartz-feldspathic mass. The pebbles are of quartzite and other lithic fragments, well rounded and generally less than 1 cm long although some are up to 30 cm across. The pebbles are flattened and aligned in a plane slightly oblique to bedding, although the coarser pebbles which are more spheroidal cut across this foliation. Inverse grading from greywacke to grit to conglomerate was observed in outcrop. Isolated float of conglomerate was also found through the greywackes.

The thicknesses of the conglomerates varies considerably suggesting a lensoidal nature. The greatest thickness observed was 12 m.

Quartz occurs as blows, pods and thick veins within the greywackes. The largest blow is approximately 170 m long with a maximum outcrop width of 20 m. The quartz is generally bedding parallel mostly occurring as large pods which are probably confined to particular stratigraphic horizons with the greywacke. Thick quartz veins generally less than 1 m in outcrop width were also observed oblique to, and occasionally cross-cutting the bedding. No stockworking was found.

The quartz is white-grey generally massive though occasionally vughy. Some of these vughy areas contain gossanous (Fe-rich) material and hematite. No sulphides were found in the quartz. Late stage milky white quartz veining with hematite was observed in several blocks at GR 380E 745N. Apart from these veins, hematite and gossanous material is quite common here. Boxwork texture were also observed on some hematite.

Outcrop of granite occurs to the northeast, east and south of the leases as well as isolated outcrops within both leases. At GR 660E 165N is a granite outcrop 1 m across and surrounded by quartz and greywacke. These outcrops, and nearby outcrops to the northeast and southwest suggests that the roof of the granite is not far beneath the surface.

Petrologically the granite is coarse grained equigrainular with an average grainsize of 3 mm, the coarsest being 10 mm. Modal composition is 50% quartz, 10% biotite and 40% feldspar (white-pale green-plagioclase?). The northern outcrops of granite are strongly weathered, finer grained and contain pink K-feldspar.

3.3 Structure

The beds maintain a constant NW-SE strike and south westerly dip. In the far southwest corner of N1162 the strike of the beds trends east-west with a southerly dip. Cleavage is developed in the more micaceous greywackes being subparallel to bedding. A strong foliation shown by alignment of pebbles is found in the conglomerates.

In the north east of MCN 1163 at GR 660E 940N is an outcrop of strongly foliated greywacke with near-horizontal slicken sides suggesting movement along a penetrative plane (fault plane?) striking 106° Mag and subvertically dipping.

The line of good rubbly outcrop of greywacke and conglomerate ends abruptly in the south. This may reflect stratigraphic changes or perhaps faulting.

4. GEOCHEMISTRY

4.1 Rock Chip Sampling

Rock chip sampling indicates the majority of quartz is essentially barren, yielding values of 0.2-0.1 g/t. Only three samples assayed 0.7 g/t. These were samples from the main quartz blow (one carrying 8.56 g/t) and samples separate but along strike from this quartz blow.

4.2 Soil Sampling

The results of preliminary soil sampling indicates that the majority of the area is barren of gold. Most samples are 0.1 g/t gold. One anomalous value of 0.56 g/t from the SW corner of the grid appears to be due to supergene effects.

Copper values range from 17 to 116 ppm. The higher values of 30-50 ppm are from the west side of the ridge, possibly indicating, dispersion from the quartz blow as a source. There was no obvious correlation with Au grade.

Arsenic values range from 115 to 1337 ppm and reflect a high background value of 100-300 ppm. The highest values are on the southernmost sample line. There is no proportional correlation with anomalous gold values.

5. RECOMMENDATIONS

Further rock chip sampling, of the centres and selvages of quartz veins, to better determine the gold distribution is recommended. In addition more intensive soil sampling on infil lines 50 m apart within current lines and also to the south of the current sample lines.

If it can be established that the mineralisation is a continuous zone along the S.W. side of the greywacke ridge then a limited program of open hole percussion drilling (10 holes) to ascertain depth, continuity and grade should be undertaken.

APPENDIX 1

SAMPLE DESCRIPTION FORMS

SAMPLE RECORD SHEET

COLLECTED BY: M. HOUSE

DATE:

PROJECT

1:250 000 SHEET

SAMPLE NUMBER	TYPE	LOCATION		DESCRIPTION	ANALYSES				
					Au	Au(R)	As		
		BONROOK							
95033	Grab Samp. of Subcrop	595 N	455 E	QUARTZ	0.10		210		
95034	Rock Chip	580 N	480 E	QUARTZ	0.86		145		
95035	Grab Samp. of Subcrop	520 N	425 E	QUARTZ	0.05		129		
95036	Rock Chip	490 N	355 E	QUARTZ	0.01		-100		
95037	Rock Chip	480 N	445 E	QUARTZ	0.03	0.02	120		
95038	Rock Chip	530 N	500 E	QUARTZ	0.05		131		
95039	Rock Chip	525 N	690 E	QUARTZ	0.01		113		
95040	Grab Sample	285 N	610 E	LAYERED STRONGLY WEATHERED SULPHIDES (?) VIA SILTSTONE ?	0.40	0.36	3440		
95041	Rock Chip	290 N	600 E	QUARTZ	0.05		631		
95042	Rock Chip	345 N	450 E	QUARTZ	0.01		268		
95043	Grab Samp. of Subcrop	455 N	590 E	QUARTZ	< 0.01		137		
95044	Rock Chip	150 N	590 E	QUARTZ	0.01		149		
95045	Grab Samp. of Subcrop	085 N	605 E	QUARTZ	0.01		-100		

SAMPLE RECORD SHEET

COLLECTED BY: M. HOUSE

DATE:

PROJECT

1:250 000 SHEET

SAMPLE NUMBER	TYPE	LOCATION		DESCRIPTION	ANALYSES				
					Au	Au (R)	As		
		BONROOK							
95010	Rock Chip	700 N	400 E	QUARTZ	0.07				
95011	"	750 N	400 E	QUARTZ	< 0.01	0.01			
95012	Selective Grab Sample	750 N	400 E	GOSSANOSS MATERIAL IN QUARTZ WITH HEMATITE	8.23				
95013	Rock Chip	820 N	550 E	QUARTZ	0.08				
95014	"	800 N	510 E	QUARTZ	0.05				
95015	"	100 N	290 E	QUARTZ	0.03				
95016	Grab Samp. of Subcrop	175 N	630 E	SLIGHTLY GOSSANOUS QUARTZ	1.38				
95020	Rock Chip	970 N	545 E	QUARTZ	0.19		107		
95021	"	900 N	580 E	QUARTZ	0.03		100		
95022	"	1040 N	445 E	QUARTZ	0.02		113		
95023	"	945 N	430 E	QUARTZ	< 0.01		108		
95024	"	900 N	580 E	QUARTZ	< 0.01	< 0.01	< 100		
95025	"	900 N	560 E	QUARTZ	< 0.01		100		
95026	"	845 N	600 E	QUARTZ	0.01		122		
95027	"	755 N	595 E	QUARTZ	< 0.01	< 0.01	120		
95028	"	860 N	400 E	QUARTZ	0.03		129		
95029	"	860 N	380 E	QUARTZ	< 0.01		154		
95030	Grab Samp. of Subcrop	850 N	380 E	GOSSANOUS QUARTZ VEIN	< 0.01		235		
95031	Rock Chip	780 N	360 E	QUARTZ	< 0.01	< 0.01	109		
95032	"	750 N	310 E	QUARTZ	< 0.01		180		

APPENDIX 2

ASSAY SHEETS

ANALYSIS REPORT

Australian Assay Laboratories Group

REPORT : PC 019094

Sample	Au	Au(R)	Cu	As
1000N 400E	0.02		30	237
1000N 425E	<0.01		29	209
1000N 450E	0.02	0.02	42	226
1000N 475E	0.02		36	251
1000N 500E	<0.01		30	303
1000N 525E	0.04		30	266
1000N 550E	<0.01		23	230
1000N 575E	<0.01		21	247
1000N 600E	<0.01		22	217
750N 300E	0.04	0.02	35	315
750N 325E	0.06	0.06	39	256
750N 350E	0.06	0.04	52	308
750N 375E	0.07	0.06	34	131
750N 400E	0.04		40	181
750N 425E	0.04		54	207
750N 450E	<0.01		48	241
750N 475E	<0.01		33	132
750N 500E	<0.01		31	152
750N 525E	0.04	0.06	35	191
750N 550E	<0.01		33	182
750N 575E	<0.01	<0.01	24	142
750N 600E	<0.01	<0.01	27	209
750N 625E	<0.01		36	198
750N 650E	<0.01		31	115
500N 300E	<0.01		23	118

Data in ppm unless otherwise stated.

ANALYSIS REPORT

Australian Assay Laboratories Group

REPORT : PC 019094

Sample	Au	Au(R)	Cu	As
500N 325E	<0.01		22	193
500N 350E	<0.01		29	186
500N 375E	0.06	0.08	32	278
500N 400E	<0.01		39	293
500N 425E	<0.01	<0.01	33	302
500N 450E	<0.01		31	296
500N 475E	0.01		38	270
500N 500E	0.05	0.04	37	271
500N 525E	<0.01	<0.01	39	271
500N 550E	<0.01		33	194
500N 575E	<0.01	<0.01	17	178
500N 600E	<0.01		25	149
500N 625E	<0.01		21	173
500N 650E	<0.01		27	148
500N 675E	<0.01		25	133
500N 700E	<0.01	<0.01	20	206
250N 400E	0.56	0.54	23	239
250N 425E	0.04		28	343
250N 450E	0.04		29	500
250N 475E	0.06		25	502
250N 500E	0.06		21	216
250N 525E	0.04		26	404
250N 550E	0.02	<0.01	35	535
250N 575E	0.08		58	642
250N 600E	0.04	0.04	49	785

Data in ppm unless otherwise stated.

ANALYSIS REPORT

Australian Assay Laboratories Group

REPORT : PC 019094

Sample	Au	Au(R)	Cu	As
250N 625E	0.06		116	1337
250N 650E	0.02		56	485
250N 675E	0.04	0.04	25	324
250N 700E	0.02		32	310
250N 725E	<0.01		23	318
EXTRA 250N 750E	0.02	0.02	20	136

Data in ppm unless otherwise stated.

ANALYSIS REPORT

Australian Assay Laboratories Group

REPORT: PC 08296

Sample	Au			
52448	0.05		13	35
52449	0.12	0.18	16	4
52450	0.18	0.16	10	4
52451	0.03	0.01	10	2
52452	0.01		12	3
52453	0.01		13	5
NR 8	0.43	0.38	36	330

Data in ppm unless otherwise stated.

ANALYSIS REPORT

Australian Assay Laboratories Group

REPORT : PC 019095

Sample	Au	Au(R)	As
95036	0.01		<100
95037	0.03	0.02	120
95038	0.05		131
95039	0.01		113
95040	0.40	0.36	3440
95041	0.05		631
95042	0.01		268
95043	<0.01		137
95044	<0.01		149
95045	<0.01		<100
STD D 1	0.66	0.71	—

Data in ppm unless otherwise stated.

GN MN

250 E 500 E 750 E

1000 N

0·2, 30, 237 | 0·01, 29, 209 | 0·02|0·02|42, 226 | 0·02, 36, 251 | -0·01, 30, 303 | 0·04, 30, 266 | 0·01, 23, 238 | -0·01, 21, 247 | -0·01, 22, 217

95020 0·19
95023 -0·01
95021 0·03
95025 -0·01
95024 -0·01
95029 -0·01
95028 0·03
95030 -0·01
95026 0·01
95013 0·08
95014 0·05
95013 -0·01

750 N

0·04, 0·01, 35, 315 | 0·06, 0·04|39, 256 | 0·06, 0·04|52, 308 | 0·07, 0·06, 134, 131 | 0·04, 40, 181 | 0·04, 54, 207 | -0·01, 45, 241 | -0·01, 33, 132 | -0·01, 31, 152 | 0·14, 0·06, 35, 191 | -0·01, 33, 182 | -0·01|-0·01, 24, 142 | -0·01|-0·01|27, 209 | -0·01, 36, 198 | -0·01, 31, 115

95010 0·7

95033 0·10
95034 0·86
95038 0·05
95039 0·01

500 N

-0·01, 23, 118 | -0·01, 27, 193 | -0·01, 29, 186 | 95036 0·01 | 0·06, 0·08|32, 278 | -0·01, 39, 293 | -0·01|-0·01|33, 302 | 95035 0·05 | -0·01, 31, 296 | 0·01, 38, 270 | 0·05|0·04|37, 271 | -0·01|-0·01|39, 271 | -0·01, 33, 194 | -0·01|-0·01|17, 178 | -0·01, 25, 149 | -0·01, 21, 173 | -0·01, 27, 148 | -0·01, 25, 133 | 0·01|0·01|20, 206

95037 0·03
95043 -0·01

95042 0·01
95041 0·05
95040 0·40

250 N

0·56, 0·54|23, 239 | 0·04, 28, 343 | 0·04, 29, 500 | 0·06, 25, 502 | 0·06, 21, 216 | 0·04, 26, 404 | 0·02|-0·01|35, 535 | 0·08, 58, 642 | 0·04|0·04|49, 785 | 0·06, 116, 1337 | 0·02, 56, 484 | 0·04, 0·04, 25, 324 | 0·02, 22, 310 | -0·01, 23, 318 | 0·02, 0·02|21, 20, 136

95016 1·38

0 N

79

KEY:
• Au(Au R),Cu,As
× SAMPLE N°
Au

CR90/185

PINE CREEK GOLDFIELDS LTD.

BONROOK NTH.

GEOCHEMISTRY

FIGURE 3.

SCALE 1:1000
0 200 400 600 800 1000m

Geo:	Date : OCT '89	Drawn : S.J.H.