Bremar Minerals Pty Ltd

ANNUAL and FINAL REPORT FOR EPM14719 (COEN)

FOR THE YEAR ENDING 8th NOVEMBER 2012

BY

BH DUCK

FOR SECO RESOURCE FINANCE PTY LTD

Cairns
8 January 2014

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Extract from Grant Document

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METADATA

Tectonic:	Coen Inlier
Stratigraphy:	Coen Metamorphics, Kintore Supersuite, Cape York Peninsula Batholith
Age:	Devonian, Permian, Carboniferous
1:100,000	Ebagoola, Coen
Locality:	Coen
Key Words:	Diamond drilling, assaying, structural geology, data processing, mylonite
Prospects:	Great Northern, Stockholm, The Bend, Wilson, Louis Tunnel
Pages:	44

INTRODUCTION

The EPM was granted 9th November 2005 for two years and was finally renewed on 21 August 2012 until 8th November 2012

At the start, when the database was reviewed it was so big and none of it was in a digital format, that it was decided to compile as much information as possible and this took much longer than expected due to large numbers of location errors of prospects, drilling compared to the soils targeted and stated drill hole locations compared with maps of the same prospects.

An airborne geophysical survey was planned and budgeted for, however it was discovered that the State would fly the area and we saw Wild Rivers legislation passed and were unsure of its impact – so for these reasons the planned airborne program was cancelled. When the data from the survey became available – it was purchased.

Work in the last period included:

- Satellite imagery review,
- A study of the Wild Rivers legislation and its impact on the MRA and exploration financing
- Discussions in Coen with a local Aboriginal group about employment, exploration and possible development,
- A one week field trip was conducted in September 2009 to locate some of the satellite imagery targets, and evaluate the potential conceptual targeting that has developed.

It is concluded that breccia style targets can be found, however Wild Rivers legislation, potential World Heritage listing and now at the time of writing the draft Cape York Plan has significantly increased the Sovereign Risk in this area.

Work in the previous period included prospecting around the Wilson to the north west of Coen, with the discovery of a significant quartz rich zone that was considered to have potential due to similarities with previously seen siliceous zones. Assays and petrology showed that it's potential is limited.

The EPM was not renewed until 21 August 2012, and there was no work conducted in the current reporting year.

TENURE

The EPM14719 was granted on 9th November 2005 for two years.

This initial grant included:

Mitchell 1:1,000,000 Block Identification Map

Blocks	Sub Blocks	
1719	abcghnostyz	11
1720	v	01
1790	tuyz	04
1791	e	01
1792	a	01
1862	dejk	04
1863	af	02

		24

Table 1 Granted Sub Blocks

Application was made to renew in August 2007 and eight sub blocks were relinquished on 21st January 2008.

The eight blocks relinquished were (on Block Identification Map Mitchell 1:1,000,000):

Sub Blocks	
1719	g
1790	tuyz
1862	dj
1863	a
	--
Total	8

Table 2 Sub Blocks Relinquished January 2008

This left the 16 sub blocks as shown in Table 3.

Blocks	Sub Blocks	
GROUP 1		
1719	abchnostyz	10
1720	v	01
1791	e	01
1792	a	01
GROUP 2		
1862	ek	02
1863	a	01

		16

Table 3 EPM14719 Sub Blocks

A renewal application was submitted 6th August 2007. A second renewal was submitted on 15th October 2010, was not renewed in the current year but renewed on 21st August 2012 to expire on 8th November 2012 (See Extract below).

It is to be noted that the entire EPM is underlain by the Archer and Stewart Wild River Basins, and is contiguous with a National Park to the east and the south western side of Group 1 of the EPM.

Wild Rivers areas were first declared in February 2007 and it became apparent that Cape York River basins were being targeted by non elected organisations that became Stakeholders in Government decisions. This Company became concerned that there would be an impact on exploration and development potential and so a study was made of the two acts of Parliament that carried the direct effects. The Archer and Stewart River basins were declared in April 2009

We have had concern about the effect of the Wild Rivers legislation and although we believe that Sovereign Risk is high we consider the geology and potential is too high to allow the potential resources to fall into even more National Parks or to permit the continuation of the Wild Rivers basin to stop exploration when there was a Bill before Federal Parliament calling for the repeal of the Wild Rivers legislation.

Below is our reasoning for taking the view that exploration and the Wild Rivers legislation are mutually exclusive.

Under Section 383 3(b) and 4 of the MRA 1989 (quoted below) and the definition of a Nominated Waterway (from the EPA 2005, Section 6, Page 7 – below) it is our interpretation that a Nominated Waterway can be taken to mean any wrinkle in the ground and falls within the catchment limits of the Declared River basin. If the project could be declared of State Significance it may be approved – but if millions of dollars are spent (on exploration and proving the viability) and it cannot make that classification then the money is lost, alternatively should the same millions of dollars be spent on the project and the report (by unidentified personnel or Departments) assessing the EIS not accept the value of the Project (MRA 383 4(b)) then again the money is lost. Exploration risk is a well known and accepted condition of exploration, however this new Sovereign Risk resulting from these two pieces of legislation take the risks too high.

Sect 383

(3) If a mining lease is granted over land that includes a wild river area, mining lease activities must not be carried out—
(a) on the surface of the land in the wild river high preservation area; or
(b) in a nominated waterway.

Sect 383

(4) Subsection (3)(b) does not apply if—
(a) the mining lease is, or is included in, a project declared under the State Development and Public Works Organisation Act 1971, section 26, to be a ***significant project;*** *and*
(b) ***the report evaluating the EIS*** *for the project shows—*
(i) the natural values of the wild river, included in the

wild river preservation area, will be preserved; and
(ii) it is not reasonably feasible to take the natural resource under the lease by underground mining; and
(iii) the value of the natural resource is sufficient to warrant the grant of the lease over the nominated waterway.

Our query is - who assess the EIS? When our Company personnel met with Wild Rivers staff in Brisbane - we were told that the Wilderness Society is a "Stakeholder" - does this mean that personnel from the Wilderness Society could assess the EIS - an investor when looking at Government processes needs to take in the cynical view if large sums of investment monies are involved. It is one thing to take the risk on exploration - but it is something again and additional to consider the increased sovereign risk

From Wild Rivers Act 2005 Section 6, page 7

*(1) A **nominated waterway**, for a wild river declaration, is the part of a drainage channel in the preservation area that—*
(a) is between the upstream and downstream limits, described in the wild river declaration, of the drainage channel; and
(b) extends laterally to the outer banks of the drainage channel.

This could mean any wrinkle that can at some time carry water.

We had believed the State Government when it was said that they wanted to encourage mining and exploration. We believed the Department that is responsible for mines, when they were encouraging mining particularly when that same Department spent large sums of money in flying airborne surveys over Cape York. However, we see that the reality of the situation is that other Departments are stronger and this can be seen by the increase of 13 National Parks during 2009 (9 with Declared dates and 4 with no declared dates (as per the Interactive maps on the Departmental Website) in Cape York, many of them now have the same boundaries as Exploration Permits. Thus we believe that when any of the Cape York EPMs are relinquished, all mineral value of the State within those boundaries will be lost by the resumption of land by National Parks – for detailed examples look at the contiguous boundaries as outlined in Table 4 below. It is totally unacceptable to a taxpayer that one Department of our State Government can be spending large sums of money paying for geophysical surveys while at the same time other Departments are locking it up from exploration with National Parks and Wild Rivers areas.

EPM	Date Granted	Date Applied For	NP Declared Date
14124	28 Sep 2006		21 Jul 2009
17275		22 Jan 2008	21 Jul 2009
16963		30 Oct 2007	No date yet
14719	9 Nov 2005		14 Feb 2007
16747		6 Aug 2007	20Jul2009

Table 4 EPM's with National Park Contiguous Boundaries

The following plan (Figure 1) has been taken from the Queensland Mines and Energy web page Interactive Maps and:

- The Blue Areas show the Wild River Basins
- The Green areas show national parks
- The brown areas show the Exploration Permits
- The red dots show historic gold producers

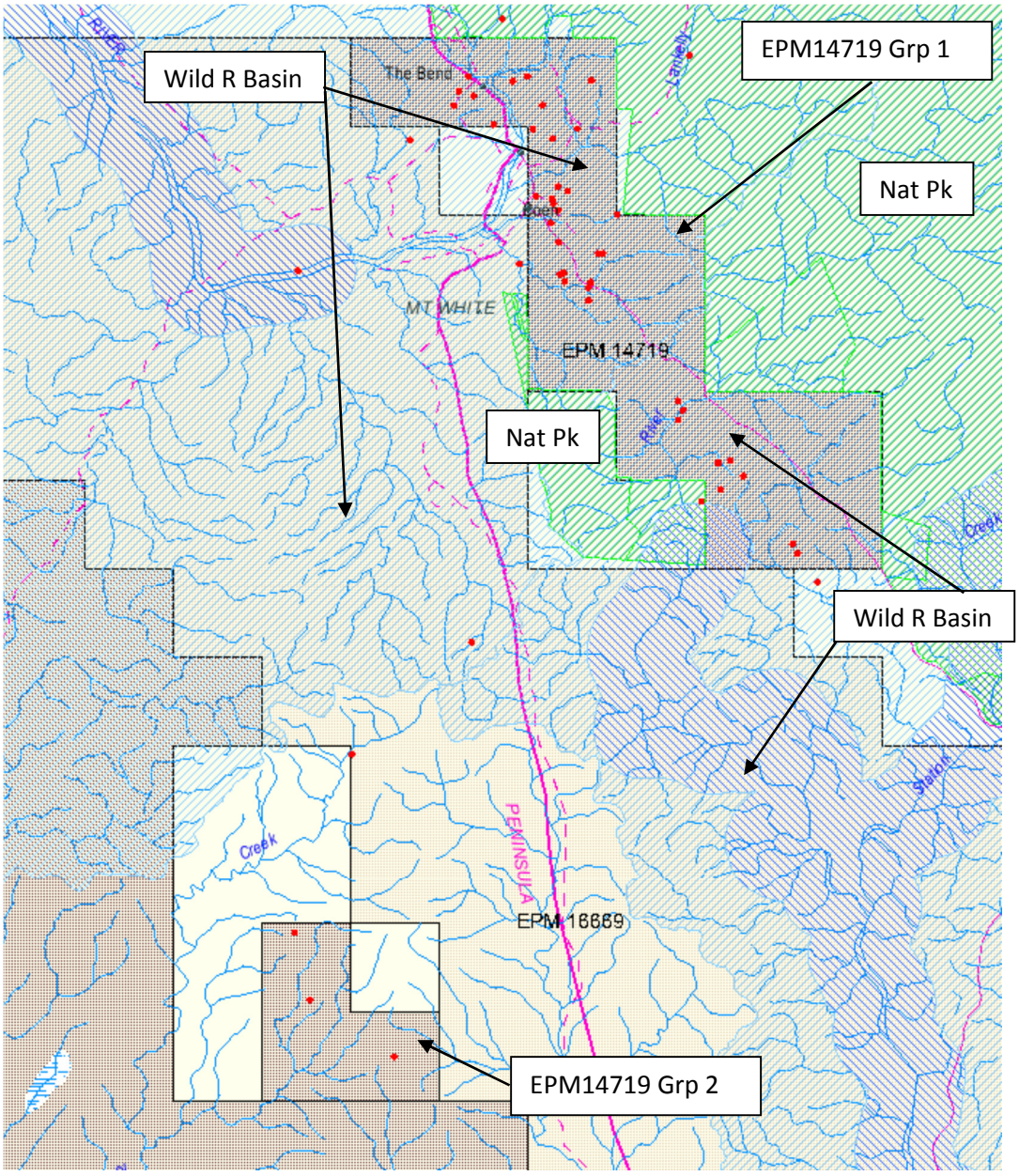


Figure 1 EPM14719 in two Groups, with Contiguous National Park and Overlying Wild River Basins of the Archer and Stewart

All of the 13 sub blocks of Group 1 of the Exploration Permit fall within a Wild Rivers basin – either the Archer or the Stewart. Our interpretation of the MRA 1989 sections relating to

Wild Rivers and the Wild Rivers Act 2005 lead us to conclude that the grant of permission to mine in a Wild River Basin is unlikely as outlined above.

Queensland Government

Queensland Mines and Energy
MINERAL RESOURCES ACT 1989

22 Aug 2012 08:53 am
Page: 6 of 6
EPR_236 3.0.0

Renewal Endorsement
Exploration Permit No. EPM 14719

The term of this Exploration Permit is renewed as follows:-

1. Date Approved : 21-AUG-2012

2. Date Commences : 10-NOV-2010

3. Term : 2 years

4. Date Expires: 08-NOV-2012

Provided that the number of sub-blocks held during the term of the Exploration Permit shall not exceed the number specified in the table hereunder unless otherwise approved in writing.

Year	Specified Sub-Blocks
6	16
7	16

Dated this the twenty-second day of August 2012

DEPARTMENT OF NATURAL RESOURCES & MINES QUEENSLAND BRISBANE

for ANDREW CRIPPS
Minister for NATURAL RESOURCES AND MINES

Extract from the Grant Document as per renewal of 21 August 2012.

GEOLOGY

The Coen area is underlain by Proterozoic Coen Metamorphics that have been intruded by Devonian granitoids of the Kintore Supersuite – particularly the Lankelly Adamellite, Kintore Adamellite and Flyspeck Granodiorite of the Cape York Peninsula Batholith. The contact of these rock types in the Coen area is of a northwest trend, and the contact zone is marked by a zone of shearing and mylonite formation - the Coen Shear. Both metamorphics and granite are sheared and in places, mylonitised. Just in the immediate area of the Coen township, within the Coen River valley, and then again further to the north, the Coen Shear is covered by Tertiary sediments.

The detailed work of Saracen and CRA highlighted the presence of a swarm of rhyolite dykes both within the Coen Shear and surrounding rocks. The dykes are younger than the hosting rocks and are likely Permian in age.

The narrow vein gold mineralisation occurs as simple quartz veins +/- galena and arsenic. These veins are in the Shear or surrounding rocks but close to the Shear. The general belief was that the Coen gold mineralisation was related to a deformation along the Shear soon after the early Devonian intrusions. The detailed work from Saracen/CRA highlighted a further close relationship of gold to the rhyolite dykes. Following on from their work, it was realized that there were at least two ages of gold mineralisation at Coen. This is important as the Coen field starts to have a resemblance to the Charters Towers field in terms of style and ages of gold deposit formation. The Coen field has to date nowhere near the reported gold production of Charters Towers – but may have that potential which is being lost through increase of Sovereign Risk.

In the south western area (Group 2) of the EPM, lies the old mines of Thornbury deposits – previously recorded as the Lockinvar Provisional Goldfield. The area is underlain by the Coen Metamorphics consisting of a sequence of quartzite (also described as meta-acid volcanics (RT Gardiner & Assoc – 1990) and pelitic schist and gneiss. To the south there is a large probably intrusive body of potassic ultramafic rock and associated marble and calc-silicate.

At the Thornbury deposits gold is known from a number of quartz veins, dipping 45^0 to 50^0 to the west and striking 300^0 to 330^0. There is minor associated pyrite, arsenopyrite and a trace of galena and sphalerite. The quartz is often a massive white, dogs tooth variety. There is record of gold associated with a highly graphitic and pyritic schist. This is on the footwall of an essentially unmineralised quartz reef, but this has not been confirmed by more recent field work.

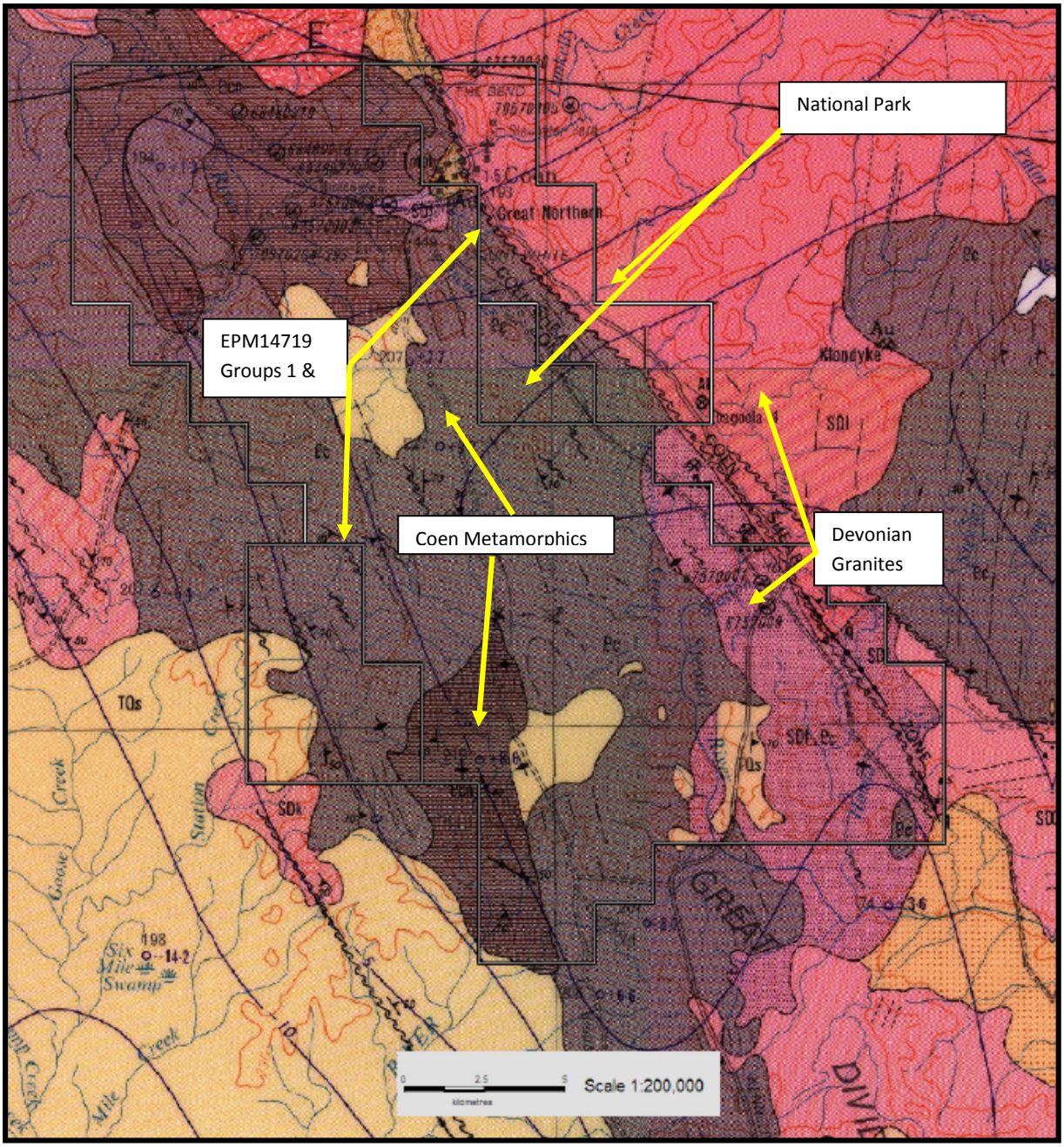


Figure 2: EPM14719, Location and 1:250,000 geology,

PROGRAM

The work that was started in the first year was entirely a review of the available data. During that period some 178 Company Reports plus another 17 QLD Geological Survey reports were accessed from QDEX and a major study initiated to transfer the hard copy data into a retrievable data systems. In doing this a large number of location errors were encountered and many of these are still unresolved waiting possible field resolution.

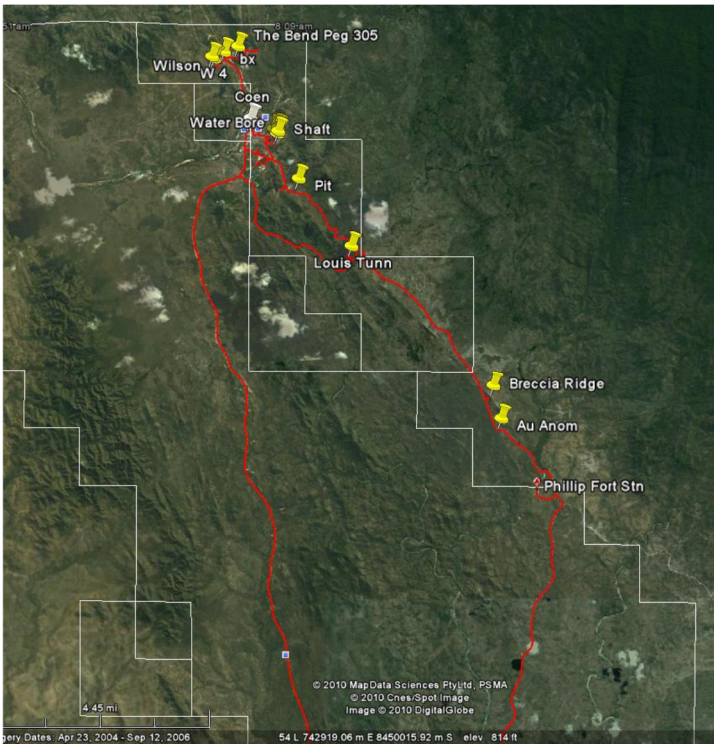
The transfer to digital availability has taken much longer than anticipated due to location problems (see Table 5 below) and the correction of these will depend on field studies even redoing some of the earlier work to confirm those earlier results.

A desk based Structural Review of the Coen Inlier was carried out by Dr Bob Findlay at the end of the 2007 year and this report was reviewed in the 2008 period. This report was included in the 2007 and 2008 Annual Reports.

A planned airmag survey was deferred until the 2008 field year, however as time went on it was realised that The Queensland Geological Survey was planning to carry out an airborne survey over this area so the planned program by this Company was cancelled in favour of a much larger Government funded survey. The other reason to cancel the planned expenditure on the airborne was the encroachment of the Wild Rivers as mentioned above.

In the 2008 year, the review and the compilation to digital was continued but on a reduced scale and covered only the two targets known as The Bend, and Stockholm.

During the 2009 year some two months was spent on evaluating satellite images from Google Earth and Microsoft Virtual Earth resulting in over 1800 images with a selection of those presented in this report.



A one week field trip was conducted in September 2009 to locate some of the satellite imagery targets, evaluate the potential conceptual targeting that has developed, and ground truthing so a plan for further work could be advanced.

At the same time discussions were held with personnel from Cape York Partnerships representing the Aboriginal Communities of the Coen area. Discussions revolved around future exploration programs, and employment for the Aboriginal people.

Figure 3: EPM14719, Coen and coverage of Field Trip Sep 2009

The routes traversed are shown on the attached Fig 3 with sites looked at:

- Old mines including Wilson, Stockholm, Great Northern, Louis Tunnel, Sirdar, Breccia Ridge
- Breccias close to the Wilson
- The Coen shear including cemented breccias, white quartz (extreme mylonite??) black silica with fine disseminated sulphides
- Rhyolites and breccias adjacent to the Great Northern
- Broad areas of quartz scree with known gold anomalism
- The Ridge and its associated auriferous breccias (pers comm. R Gardiner) and rhyolites which was later discovered to be on the boundary of the National Park

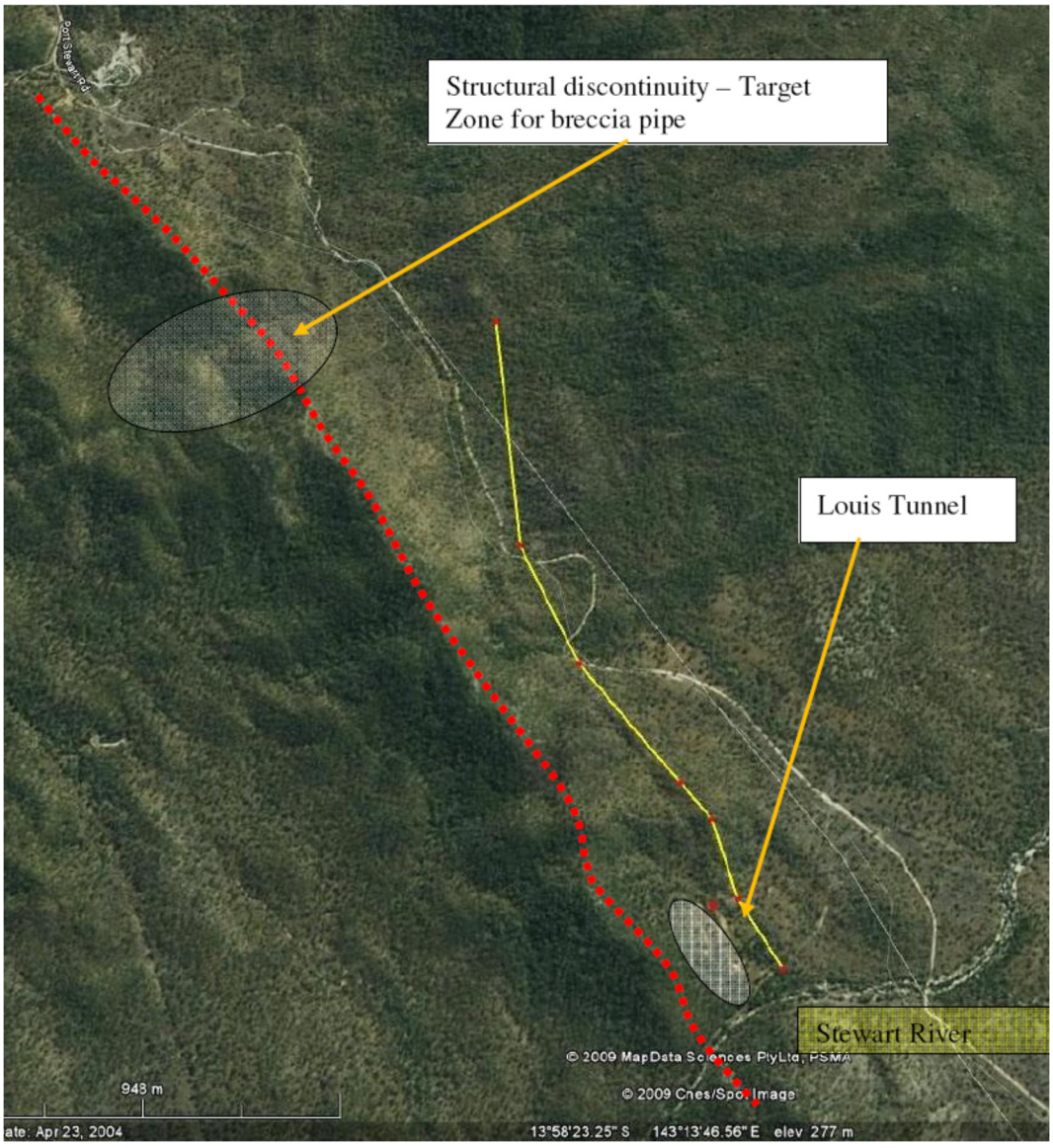


Fig 4: Coen Shear – Louis Tunnel North: Marked by white silica that has been described as quartzite after "ultra mylonite" although the presence of black undefined silica with very fine disseminated sulphides suggests formations as part of the mineralising fluid sequence.

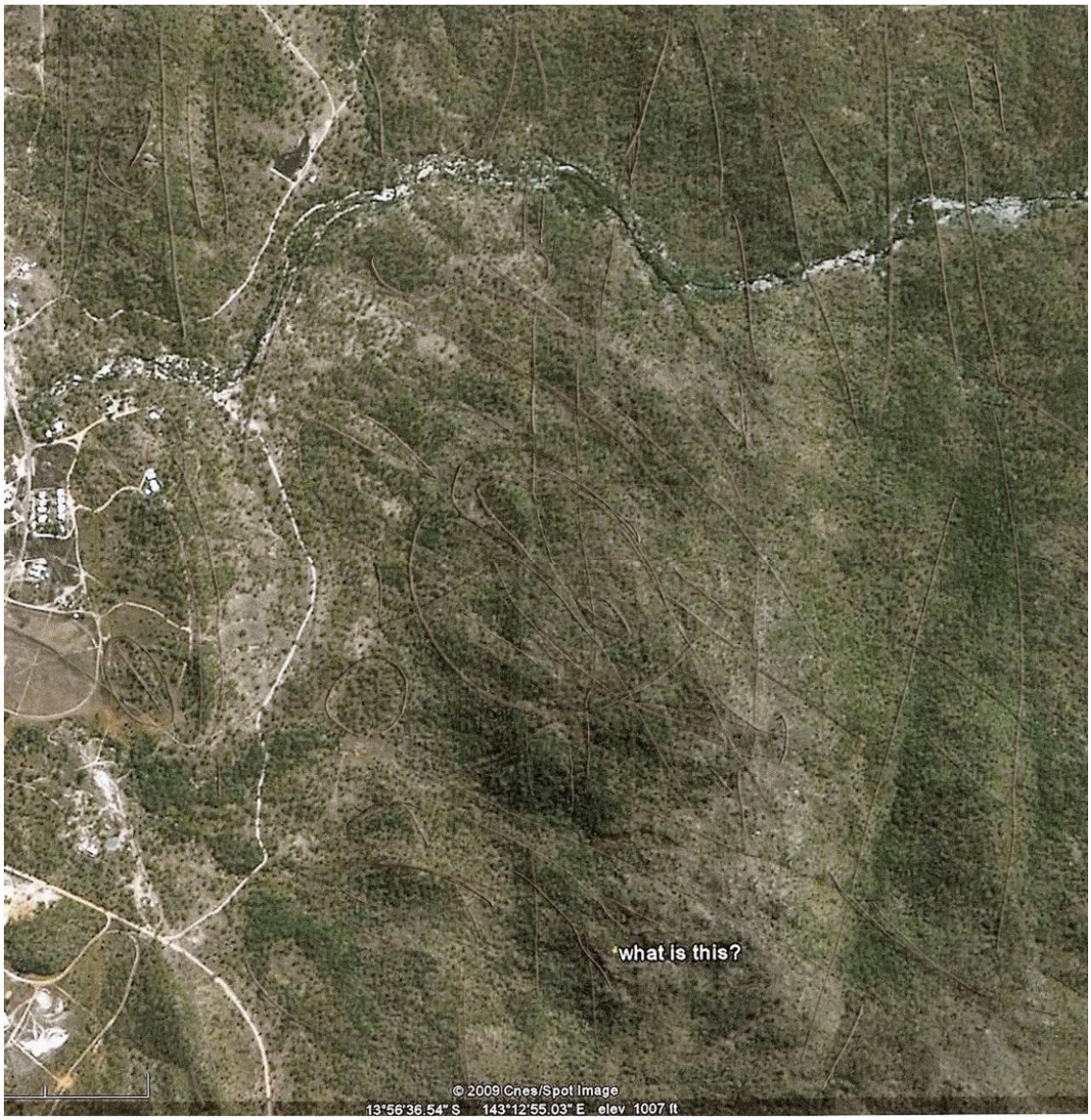


Figure 5: Fracture Pattern East of Coen – still to be investigated

2010 Programs

In the 2010 year the geologist R Gardiner who has been living in Coen since he carried out extensive work for Saracen in the 1980's and extensively referenced in the Bibliography, was consulted for his views and assistance in evaluating the potential of the area, and his summary of the area is attached as Appendix 2.

In 2009, a "black" quartz was locally crushed and found to contain very fine sulphide so when (in the 2010 programs) a large siliceous zone of dark "mylonitised" silica was located in the north west of the EPM (co-ordinates 734,570E 8,460,443N) it was sampled. The zone located is some 240 metres wide with individual veins to 4m, over a N-S strike of 1200m. A sequence of 12 grab samples were taken on these veins and assayed a well as sent for petrological studies looking for precursor lithologies or indicator mineralisation. The results are attached as Appendices 3 (assays) and 4 (petrology).

Gold Mineralization Intersected in Percussion Holes C-1, C-3
(Cook Shire Water Bores)

Hole #	Sample # (ACA)	Assay Results Au g/t)	Ag(g/t)	Widths	Comments
C-1	None Sent For Assay				0-91 metres - silicified slate
C-3	06621	0.123	-	All Samples 1 metre intervals	
	06622	0.125	-		
	06623	2.28	-		
	06624	0.284	-		
	06625	0.167	-		
	06626	0.395	-		
	06627	5.77 5.20 (5.48)	5		
	06628	1.06	1		
	06629	0.050	-		crushed greisen zone
	06630	0.017	-		
	06631	-	-		
	06632	0.153	-		
	06634	-	-		
	06671	0.010	-		
	06672	0.017	-		
	06673	0.018	-		
	06674	14.7 13.3 (14.0)	10		
	06675	7.47 8.20 (7.8)	6		
	06676	121 119 (120)	83,105,126,71,137 (104)		
	06677	6.08 7.03 (6.56)	9		
	06678	2.55	3		
	06679	0.919	1		
	06680	0.333	1		
	06681	0.107	-		
	06682	0.137	-		
	06683	0.647	-		
	06684	1.09	-		
	06685	0.492	1		
	06686	0.340	1		
	06687	0.118	-		
	06688	0.032	-		

\- Below detection limits
(5.28) Average value

Figure 6: Table extract Showing assay results from sampling of a water bore drilled by the Cook Shire

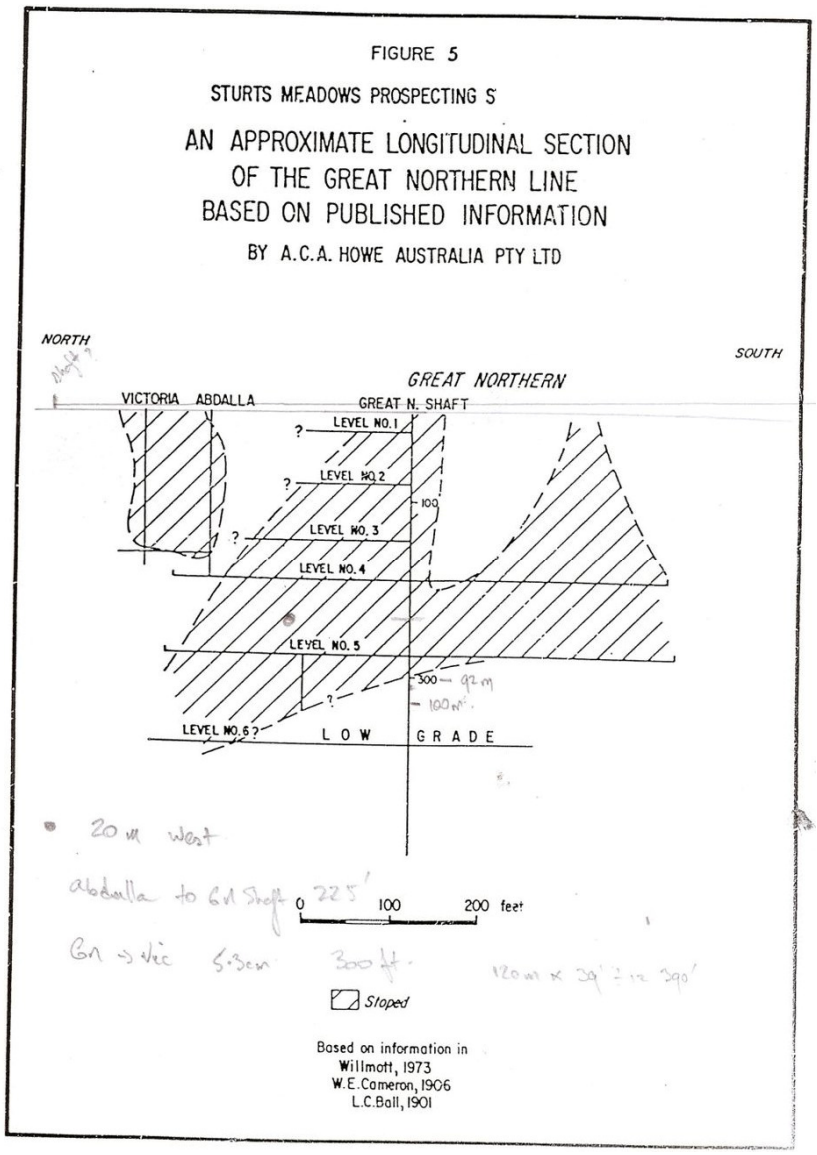


Figure 7: Great Northern Long Section

Photo 1: Great Northern Breccia: Quartz veins, brecciated and re-cemented by silica in at least two differing phases. Country rock granites – sericitic altered.

Photo 2: Great Northern Breccia: Multiphase silica including low temperature quartz.

Figure 8: Great Northern headframe

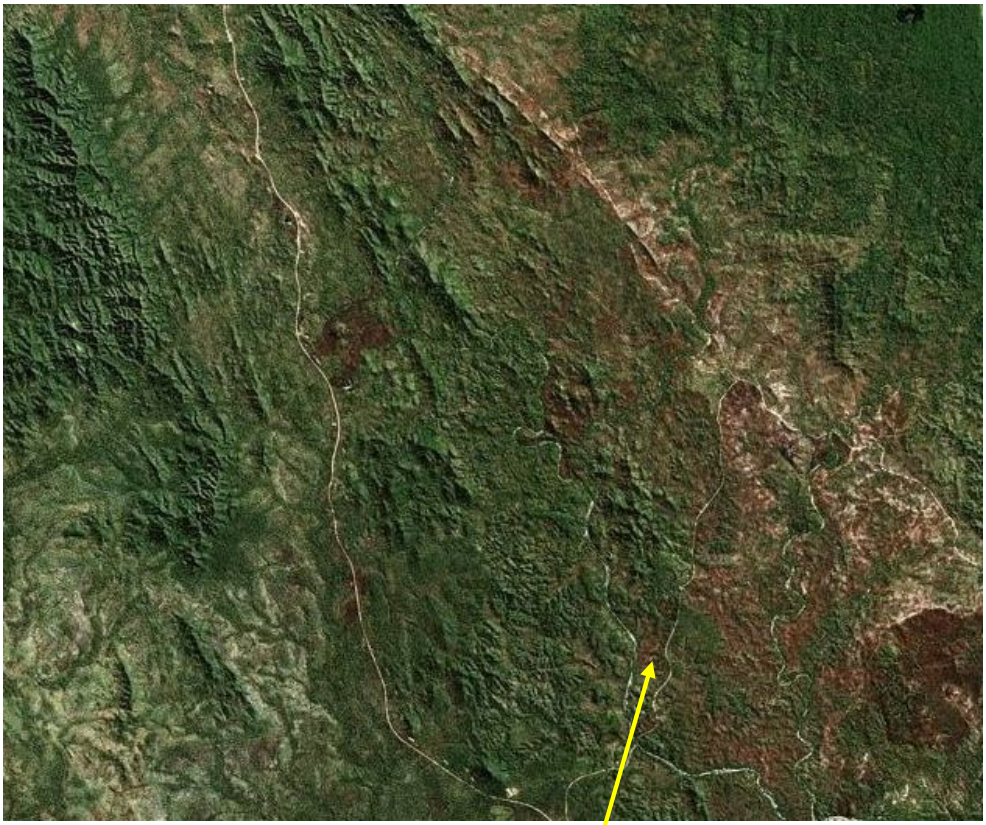


Figure 9: Breccia Ridge on southern end of the Coen Shear

Photo 3: Breccia Ridge: Silica cemented brecciated Coen Shear

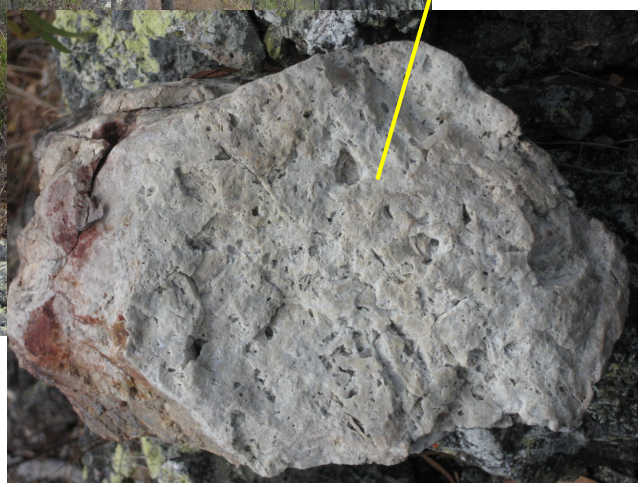


Photo 4: Breccia Ridge: Etched silica cemented Breccia

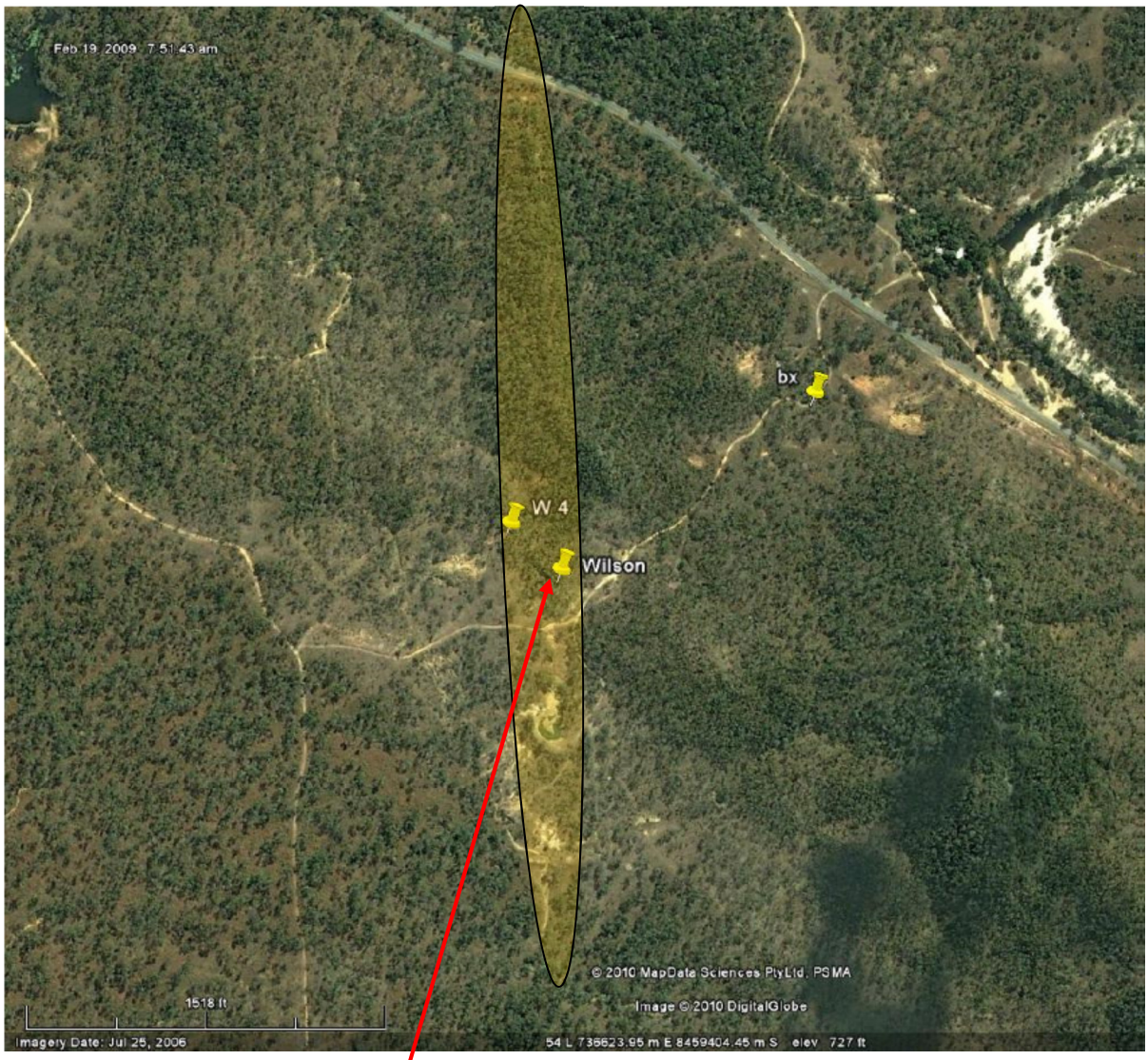


Figure 10: The Wilson Trend with adjacent Breccia

Photo 5: The Wilson: North trending ridge with a series of pits and shafts within the Coen Metamorphics

		Resource 1		Higher Grade Resource					
Prospect	**Classification**	**Tonnes**	**Grade**	**Tonnes**	**Grade**	**Oz Au**	**To Depth (m)**	**Author**	**Date**
4 Mile Stewart	Inferred	234000	2.5	100000	6	18,808	80	Gardiner and McGeough	Apr-90
The Bend	meas & Ind	110000	2.6			9,195	30	Gardiner & Assoc	Apr-90
The Bend	indicated	19700	6.14			3,889	50	Gardiner & Assoc	Apr-90
The Bend	inferred	22000	7.2			5,093	50	Gardiner & Assoc	Apr-90
Louis Tunnel	meas & Ind	87520	3.95			11,115	30	Gardiner & Assoc	Apr-90
Louis Tunnel	inferred	3744	5.98			720	50	Gardiner & Assoc	Apr-90
Louis Tunnel	inferred	50000	3			4,823	30	Gardiner & Assoc	Apr-90
Nelson	broad zones of low grade with spot highs					0		Gardiner and McGeough	Apr-90
Stockholm	Meas, Ind + Inf	93257	3.48			10,434	30	Gardiner & Assoc	Apr-90
Stockholm	indicated	11368	5.48			2,003	50	Gardiner & Assoc	Apr-90
Stockholm	inferred	17576	7.68			4,340	50	Gardiner & Assoc	Apr-90
Thornbury	Meas+Ind+Inf	72800	2.75			6,437	30	Gardiner & Assoc	Apr-90
Sirdar	Broad zone with spot highs					0		Gardiner and McGeough	Apr-90
						76,855			

Table 5: Resource Estimates in the Coen Area – references as stated

Comment:Dr R Child (1992):	Summary of Prospects:
	1 x moderate = potential of .100,000 oz Au ie Sirdar East - epithermal
	6 x low = <50,000 oz Au each
	Others
P. Ravencroft:	linear "quartzite" ridges are probably ultra mylonite
(in Gardiner Jan 86)	

Table 6: Comments on Potential by Previous Workers

There was no field work conducted in the 2011 or 2012 years, and a Statutory Declaration is presented with this submission accordingly.

TARGETS

The area has been well known for narrow gold bearing quartz veins, with most significant production from the Great Northern Mine at Coen. This style of mineralisation is no longer the major target for programs to follow but are the third choice to add in higher grades if and when mining starts on the larger targets. The most detailed review program was done by John Sainsbury in 2002 when he reviewed all of the literature available that he could locate. Our work has recognised the value of that, then gone further and entered all data into a digital database to make the next step into following up all of the results of interest.

The very comprehensive work carried out by Saracen (1986 – 1990) and CRA (1992-1994) is comprehensively summarised by Sainsbury attached as Appendix 1. These programs were essentially concentrated on the narrow high grade targets but those same programs have also found gold in rhyolites, gold in sheared sediments and the more recently postulated target is the breccia pipe.

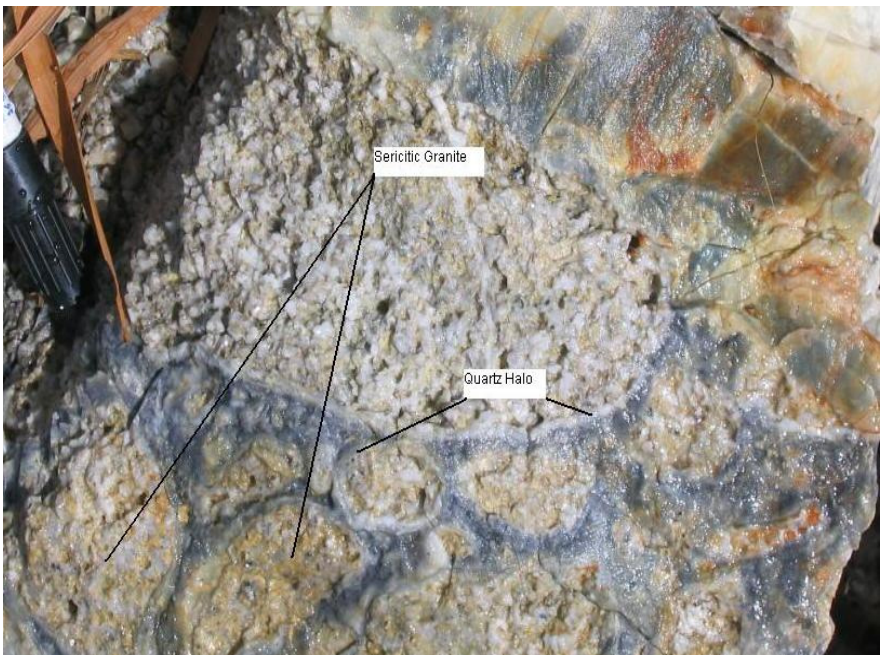


Photo 6: Target breccia style

The significant breccia pipe model is put forward because the author located a breccia in a vein swarm that suggests targets of the order of in excess of 3m oz Au – in the style of Mt Leyshon, Welcome and Mt Wright near Charters Towers. This is based on the rounded nature of the fragments which have a slightly different lithology to the surrounding country rock (both granitoids), and the matrix of the breccia is an auriferous very fine stibnite rich flow banded black silica cement. This example was located in a structural setting outside this EPM but is considered significant for the exploration potential of this EPM. See photo above.

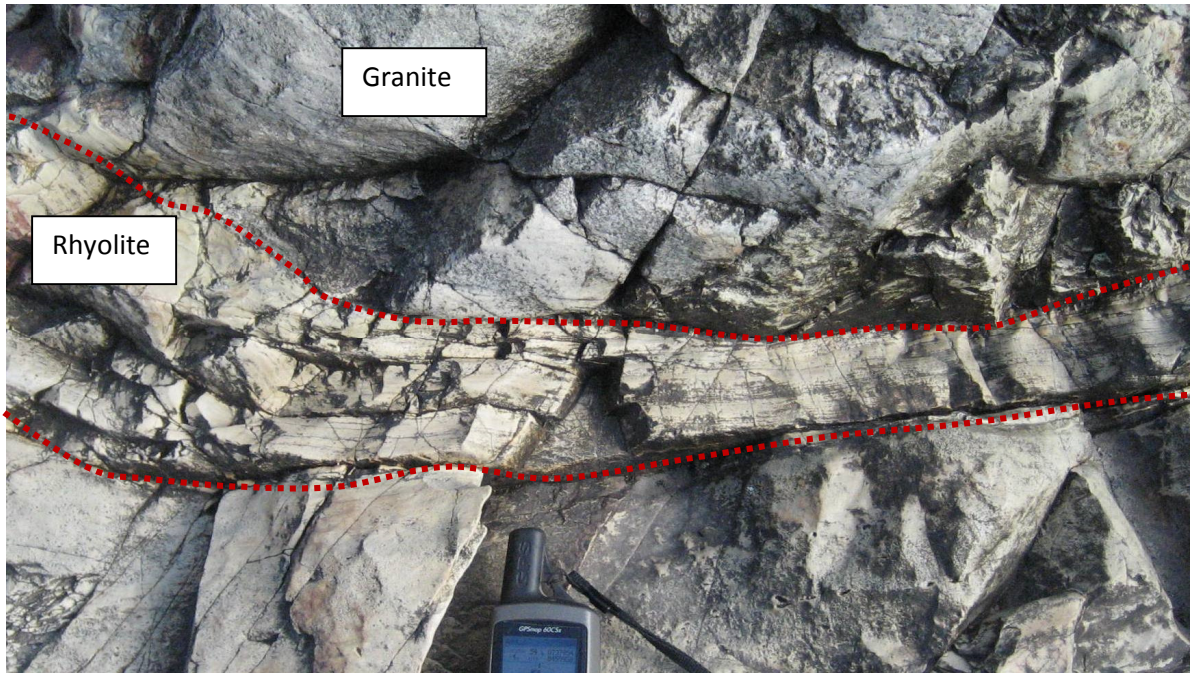


Photo 7: Rhyolite in Granites in Coen River Gorge – the Bend.

Black sulphidic silica has been found extensively within the Coen Shear during the September 2009 reconnaissance visit. These occurrences need to be mapped, sampled and studied to evaluate their significance or lack of.

The aim of the work in the early part of the 2009 year was to review readily available satellite imagery to look at:

- structural context,
- vegetation anomalies, and
- recognise possibly previously unreported old mining areas.

The main targets are now potential breccia pipes and the auriferous rhyolites but the very high grades of the Great Northern are still of interest.

Great Northern Mine – Coen

From "Gold and Ghosts, Vol 4" by DW de Havelland (1989)

De Havelland (1989) describes the Great Northern as being a single quartz vein occurring over the strike length of 250m with a shaft depth of 150m and a maximum of 15m width. Clearly these dimensions cannot be used to calculate volumes however they do point to the potential for more ore - either as stope remnants or below cut-off grades.

Consider the other data from de Havelland (1989):

Production was 26,234t for 69,531.5 oz Au (for a calculated 82gm/t Au average recovered) including some 20,000t (obviously a guess) for 13,196 oz Au from ***waste (at a grade of 20.5gm/t Au) – does this indicate that the "cut-off grade" in the mine was 20gm/t Au??*** *By subtracting the "Waste" gold from the "Production" gold gives* ***6,234t at a grade of 281gm/t Au (9 oz Au/t)****. This cannot be taken as the exact figure but it suggests that the head grade of the mined had been very high*

Gold bullion from Great Northern Mine, Coen, 1905 ('Collection: John Oxley Library, Brisbane'.)

Considering the dimensions mentioned above, and the production, there appears to be considerable room for significant remnants at what is probably very high grades. Verbal comments have recently been received (J Quinn pers comm. June 2007) that during the

Fig 11: Production at the Great Northern

Saracen era two drill holes were put down into a parallel structure some 50m to the east. Results reported were 20gm/t Au over 2m thickness. This was near-surface results (<50m) and could possibly be accessed from re-opening the Great Northern shaft and mining the target underground. These drilling results need to be located and confirmed.
This, together with the rough estimates above suggests that the Great Northern is a significant target, with potential for parallel veins.

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Below (in Table 6) is a list of Company Reports (CR's) from QDEX

No	CR's	No	CR's	No	CR's	No	CR's
1	145	47	10257	93	17242	139	23330
2	235	48	10298	94	17257	140	23375
3	392	49	10357	95	17368	141	23439
4	404	50	10367	96	17472	142	23626
5	1854	51	10628	97	17677	143	23650
6	2840	52	11562	98	17826	144	23905
7	2905	53	11563	99	17872	145	23958
8	3374	54	11564	100	17902	146	24197
9	3418	55	11565	101	18075	147	24405
10	3419	56	11798	102	18098	148	24550
11	3431	57	12358	103	18312	149	24605
12	3440	58	12474	104	18380	150	24658
13	3712	59	12910	105	18450	151	25191
14	3800	60	13112	106	18563	152	25558
15	3921	61	13661	107	18582	153	25593
16	4006	62	13825	108	18600	154	25753
17	4189	63	14228	109	18639	155	25826
18	4208	64	14864	110	18771	156	26063
19	4237	65	14984	111	18780	157	26064
20	4601	66	15406	112	18829	158	26193
21	4639	67	15407	113	18842	159	26201
22	5733	68	15472	114	19260	160	26717
23	6542	69	15484	115	19330	161	26975
24	6654	70	15485	116	19693	162	27796
25	6753	71	15605	117	19882	163	27818
26	6846	72	15723	118	19947	164	28572
27	6966	73	15724	119	20005	165	28615
28	7074	74	15733	120	20010	166	28993
29	7092	75	15993	121	20041	167	29169
30	7141	76	16125	122	20044	168	29284
31	7182	77	16126	123	20171	169	29298
32	7390	78	16147	124	20232	170	29350
33	7522	79	16148	125	20432	171	29351
34	7542	80	16149	126	20771	172	29762
35	7607	81	16259	127	21033	173	30340
36	7613	82	16488	128	21397	174	30407
37	7645	83	16489	129	21428	175	30444
38	7785	84	16618	130	21509	176	30632
39	7825	85	16728	131	21752	177	31639
40	7837	86	16746	132	22088	178	31667
41	7881	87	16973	133	22216	179	32448
42	8016	88	16988	134	22495	180	34002
43	8022	89	17086	135	22535	181	34007
44	8693	90	17087	136	22537	182	40142
45	9046	91	17100	137	22872		
46	9074	92	17101	138	23028		

Table 7: QDEX Company Reports Accessed for Coen & Cape York Studies

APPENDIX 1

COEN PROJECT

EXPLORATION PERMIT APPLICATION 11809 HELD BY JIM QUINN & ROD SILLER

HARDROCK GOLD POTENTIAL WITHIN EPM AREA BASED ON REVIEW OF PREVIOUS EXPLORATION WORK

JOHN SAINSBURY
OCTOBER 2002

1 INTRODUCTION

I have been requested to review and comment on the gold mineralisation potential of the immediate Coen area, in far north Queensland. The area is covered by an Exploration Permit for Minerals (EPM) application, no. 11809, held by Jim Quinn and Rod Siller.

A data package was made available to me, comprising a number of reports of the companies that explored the Coen area in the time up to 1994. I was informed no further exploration work has occurred since 1994. The two major exploration efforts were undertaken by Saracen Minerals NL in the 1986-1990 period and by CRA Exploration in the 1992-1994 period. From the data package, Saracen undertook their exploration effort on a number of Authorities to Prospect up to 1990. These exploration titles were conditionally surrendered into a new single EPM title, no 7118, in Sept 1991. CRA entered into a joint venture with Saracen on the EPM in July 1992 and continued work through to 1994, or rather that is the last report date I have in the data base.

The Quinn/Siller EPM application was made in July 1997. This application area covers 36 sub blocks. The CRA joint ventured EPM in 1994 consisted of 139 sub blocks. The Quinn/Siller EPM application covers the immediate Coen area, along the controlling northwest-southeast mineralisation control. The Saracen/CRA EPM did contain those sub blocks now held by Quinn/Siller, and indeed the main effort by Saracen/CRA was within that area now held by Quinn/Siller.
The data package mainly consisted of the CRA open file reports, however only the text of those reports. There were none of the detailed diagrams commented upon within the texts. Within these CRA reports are comments of the Saracen work, again only text comments with no supporting diagrams. There were nominal Saracen open file reports in the data package. The Saracen and CRA work were initially regional stream samplings and then detailed prospect studies of soil and rock chip sampling, trenching and drilling. Not having those detailed diagrams limits what can said at present. However reasonable comments of mineralisation potential can be made in the review that follows. Some more regional maps were available from the CRA reports and these are included in this review.

I have been asked to make comment on the hard rock gold potential of the area held by Quinn/Siller and I do so by drawing from the available reports in the data package. The Coen field has been a high grade, small tonnage field, with production to date of approx 77,000 ozs gold. Approx 70,000 ozs gold has come from the Great Northern mine. Saracen and more particularly CRA, explored the Coen field for large tonnage gold targets. They both reported very interesting alterations and wide zones, in places, of sub economic gold.

There are many targets within the Quinn/Siller tenement that warrant follow up
for both large tonnage targets and small tonnage high grade targets.

2 REGIONAL GEOLOGY

In summary, the Coen area is underlain by Proterozoic Coen Metamorphics that have been intruded by Siluro-Devonian granitoids. The contact of these rock types in the Coen area is of a northwest trend, and the contact zone is marked by a zone of shearing and mylonite formation, known as the Coen Shear. Both metamorphics and granite are sheared and in places, mylonitised. Just in the

immediate area of the Coen township, within the Coen River valley , and then again further to the north, the Coen Shear is covered by Tertiary sediments.
The detailed work of Saracen and CRA highlighted the presence of a swarm rhyolite dykes both within the Coen Shear and surrounding rocks. The dykes are younger than the hosting rocks and are likely Permo-Carboniferous in age.
The gold mineralisation occurs as simple quartz veins +/- galena and arsenic. These veins are in the Shear or surrounding rocks but close to the Shear. The general belief was that the Coen gold mineralisation was related to a deformation along the Shear soon after Siluro-Devonian intrusions. The detailed work from Saracen/CRA highlighted a further close relationship of gold to the rhyolite dykes. Following on from their work, it was realized that there were at least two ages of gold mineralisation at Coen. **This is important as the Coen field starts to have a resemblance to the Charters Towers field in terms of style and ages of gold deposit formation. The Coen field has to date nowhere near the gold production.**

3) COMMENTS FROM THE DATA PACKAGE

The Saracen work, as available from the CRA reports, outlined the Coen gold mineralisation over a 16 kilometre northwest strike extent and generally close to the Coen Shear. Initially, Saracen undertook stream sediment sampling and using pan concentration results, they defined a continuous set of gold anomalous drainages. Saracen then sampled within these drainages to outline the source of the gold. Most drainages contained workings of varying extent, some known in the records, others not.
CRA, using the BCL stream sediment sampling method, confirmed the same strike length of drainages as being gold anomalous. CRA only followed up what they considered a limited number of priority drainages, and undertook the detailed work in those drainages. Some of the CRA work was within the same drainages that Saracen had earlier worked within, and it is of interest to see the differing exploration results. It may be worthwhile to revisit some of the areas Saracen worked on. Saracen outlined 28 named prospects on which they undertook work of varying extent. As mentioned, CRA did some work within the same prospect areas, they using the same naming system. What follows is a review, on a prospect basis, of the work of Saracen and where relevant, CRA. In this way, the known gold mineralized trend within the Quinn/Siller EPM is reviewed at the regional to prospect scale. I make comment under each prospect heading, of the hard-rock gold potential.

Accompanying A3 maps with this report, locate the prospects. Two A3 maps, of 1:20,000 scale are dated from a CRA report as April 1993. They are called the April North Sheet and the April South Sheet. The sheets cover the northwest trend of the Coen Shear, and contain the highlighted prospects that are discussed below. These sheets contain the stream gold geochemistry of both Saracen (pan con results) and CRA (BCL). A further A3 sheet is provided, and believed to date from mid 1993. This sheet contains only CRA stream results, but a greater number than on the first two sheet (reflecting the further sampling of CRA). It also displays a greater area of that investigated by Saracen/CRA. This third sheet is called the Mid Sheet. The prospects reviewed are from taken from the northwest to southeast.

3.1 ISLAND PROSPECT (April North Sheet)

Saracen Data

- Located 4.5 kilometres NNE of Coen,

- 2.5 kilometres long, shear in granite, trend of 320 mag, mineralized quartz vein and narrow breccia. 68 pan con samples, highlighting anomalous area
- 12 rock chip all less than 1 g/t
- 5 trenches with only trace gold
- 3 drill holes along trend, with only trace gold

CRA Data

- three BCL results of low order, no follow up work recorded

J Sainsbury Comment

The prospect is on a parallel structure to the Coen Shear and in granite. It has a long reported length yet has had very limited exploration along this length. **It is worthy of follow up.**

3.2 WELLINGTON PROSPECT (April North Sheet)

Saracen Data

- Located 3 kilometres N of Coen
- Gold mineralisation associated with rhyolite dyke in granite, to east of Coen Shear, and believed the northern strike extent on from the Bend prospect
- A number of shallow workings and scratchings
- Three soil sampling lines with trace gold, 5 trenches with best of 4m @ 0.26g/t

CRA Data

- CRA viewed this prospect as a part of their Wilson prospect.

J Sainsbury Comment

Under Wilson prospect

3.3 WILSON PROSPECT (April North Sheet and Mid Sheet)

Saracen Data

- Located 2.5 kilometres nw of Coen
- Gold mineralisation located in a parallel shear to the west of the Coen Shear in Coen Metamorphics
- Two prospect areas described- Wilson area and Wilson South area. The Wilson contains the historic Wilson mine, shaft access to 120 metres depth, although only limited gold produced (815 ozs gold). 120 soil samples collected with only trace gold returned. Three trenches, with best sample of 3 metre @ 0.93 g/t Au. Drilling around the Wilson mine with some limited width, low grade results.
- At the Wilson South area, approx 1 km south. Some significant pan con results which were not followed up.

CRA Data

- CRA described the Wilson prospect as including the Wilson and Wellington prospects areas of Saracen.
- Defined as a priority by CRA based on very anomalous BCL results (max to 205 ppb Au)
- 820 soil samples collected and defined two areas, termed the Wilson south and Wilson North. Host rocks are mostly Coen Metamorphics. The Wilson South area of CRA is the same area as the Wilson area of Saracen. The Wilson North area of CRA includes the Wellington area of Saracen.
- The Wilson South area defined by a broad gold in soil anomaly. While the overall anomalous soil trend is northwest, three higher grade zones trend north. Four trenches were cut across the anomalous' soil anomaly, and sampled as 5 metre composites, with best results of **Trench 3: 25m @ 1.02g/t Au, Trench 4: 5m @ 20.8 g/t**. The anomalous trench results were

in weathered, clayey metasediments. The comment was made the anomalous trench results were not associated with quartz veining. Four RC drillholes were completed at the Wilson South. Hole RC94WL1 was drilled to test one of the north trending soil anomaly trends. Best result was : **56-66 metres, 10 m @ 4.48g/t Au**, (including a two metre interval of 14.63 g/t Au). Hole RC94WL2, drilled below the trench 4 result above, intersected: **34-42 metres, 8 metres @ 0.47g/t Au**. Hole RC94WL3, drilled below the trench 3 result of above, intersected no significant gold. Hole RC94WL4 was drilled below the old Wilson workings with best result of **76-80 metres, 4 metres @ 1.41 g/t Au**. The comment made for the anomalous zones in the drill results was that they did not correspond,,with quartz vein zones but subtle changes of alteration in the metasediment.

- The Wilson North area was defined by a broad gold in soil anomaly, with some apparent east west high grade trends. Outcrop was metasediment cut by thin north trending rhyolite dykes. The higher grade soil results were adjacent to or within the dykes. Two trenches were dug with best results of Trench 1: **20 m @ 1.3g/t Au**, Trench 2: **15 m @ 2.3g/t Au**. The anomalous were in weathered metasediment adjacent to rhyolite dykes. Four RC drillholes were drilled at the Wilson North. Hole RC94WL5 was drilled below the trench 1 result. Best result was: 36-50 metres, 14 metres @ 0.6g/t Au. Hole RC94WL6 was drilled to test for plunge extent of the trench 2 mineralisation. No significant mineralisation was intersected. Holes RC94WL7 &8 were drilled below the trench 2 result. Results were negative.

J Sainsbury Comment

The Wilson prospect is a worthy prospect for detailed follow up. Using the CRA naming, the Wilson South has some very good results. There is the high grade result of the trenches. CRA believed there may have been some contamination in soil and trench results from the old Wilson mine scree. That needs to be confirmed. Hole RC94WL1 is a very good result from which some high grade mineralisation can be estimated. The subtle nature of alteration explaining the drill results is significant for bulk tonnage potential. The results suggest this mineralisation is broad and unconfined, this being a possible diffuse outer zone around a better mineralized zone. The Wilson North soil and trench results were explained as a possible contamination from the Tertiary sediments in this northern area. However there does appear to be a real association of gold with rhyolite, although not a high grade association. There appears to be no follow up of the Saracen Wilson South prospect. The total Wilson prospect is a high priority target for both bulk tonnage and high grade deposits. CRA achieved a consistent set of soil results to follow up, while Saracen, in the same area, did not find such consistency.

3.4 THE BEND PROSPECT (April North Sheet)

Saracen Data

- Located 2.5 km north of Coen
- Gold mineralisation occurs within a number of thin quartz/sulphide veins. 12 veins were located. General trend to the veins is north-south.
- Host rock is granite, with rhyolite marking western edge of mineralisation.
- Vein density is best within an area of 150 m by 150 m. The veins were extensively trenched and drilled. A number of 2metre drill intercepts of + 5g/t Au were intersected.
- In 1990 Saracen estimated a resource, to 45 metre depth as **92,750 tonne @,4 g/t Au**

CRA Data

- There is no reported work by CRA at the bend. It appears they viewed the Saracen work as sufficient,

J Sainsbury Comment

The Bend has been examined in reasonable detail by Saracen . They concentrated the work in a small area and it may be worthwhile to extend the area of search. A re-examination of the bulk tonnage potential of the multi- veined area is worthwhile. **There could the higher grade veins carrying the bulk tonnage potential.**

3.5 HANGING DOWN,HANGING ROCK, HOMEWARD BOUND, LANKELLY AND DAISY PROSPECTS (April North Sheet)

Saracen Data

- Located from 2 km NE to immediate E of Coen
- These prospects are located in a north-south direction along a rhyolite dyke, the Lankelly Dyke, in granite.
- The Lankelly Dyke is a series of north trending, 0.3 to 20 metre wide, branching to en echelon rhyolite dykes. The dykes are variably altered with sulphidic fractures in the dyke or as fine feathers out from dyke edges.
- The above prospects are located along the Lankelly Dyke from north to south. Some better results were: **Hanging Down** - trenches 16 m @)0.3g/t Au, no drilling; **Hanging Rock** - no comment of trenches, 5 RC holes with best of 7 metres @ 0.49g/t Au; **Homeward Bound** - an historic mine with production of 880 ozs gold, Saracen undertook rock chip, soil sampling trenching and drilling across and into the rhyolite system, results were generally disappointing with a best drill intercept of the dyke system of, from 6 metres, 24 metres @, 0.3 g/t Au; **Lankelly** - an historic mine with production of 1220 ozs gold, Saracen reported trenching and drilling results, with broad (10-15 metres) mineralized dyke results in trenches of approx 0.5 g/t Au (usually within which was a high grade 2 metre result of +2 g/t), and best RC result of 18m @ 0.36g/t Au; **Daisy** - a historic mine with production of 1150 ozs gold, Saracen reported no significant from rock chip and trenching

CRA Data

CRA reported no work on this line of prospects.

J Sainsbury Comment

This line of mineralisation is located to the east of the Coen Shear. It extends over 1 kilometre and is clearly related to a rhyolite dyke system, that has intruded the host granite. The dyke system is altered and gold mineralisation is related to this alteration. The Saracen work highlighted the plus 10 metre widths of subeconomic mineralisation, but also highlighted the approx 2 metre widths of high grade mineralisation. **An effort should be made to estimate a high grade zone form this Saracen work.** The bulk tonnage potential should be examined. The Saracen drilling is only shallow and several holes should be drilled to greater depths. The Lankelly Dyke is a long, mineralized system which has only been superficially examined.

3.7 STOCKHOLM PROSPECT (April North sheet)

Saracen Data

- Located east of and adjacent to Coen
- The prospect is located within and to the east of the Coen Shear, and generally trends NW.
- Gold mineralisation is located as thin quartz-sulphide veins within the Shear (called Zones A & B) or the granite (called Zone C). Rhyolite dyke has intruded the Shear and the granite, and old workings are located on the dyke.
- Historic production has been approx 3000 ozs gold
- Saracen undertook soil sampling, trenching and drilling. Early trenching confirmed broad gold results in areas of rhyolite, with best of 24 metres @ 0.46g/t Au. Drilling confirmed the broad gold mineralisation of the rhyolites, but further work, directed to the quartz- sulphide veins, intersected a number of 1-2 metre widths of plus 3g/t Au. Saracen estimated a resource of 50,850 tonne @ 11 g/t Au, as an underground target. There appears to be a further effort to estimate an opencut resource, this figure being 84,200 tonne @ 4.1 g/t Au, this opencut figure using some of the drill information used for the underground calculation

CRA Data

CRA reported no work at this prospect

J Sainsbury Comment

The Stockholm is similar to The Bend prospect. They are located within and to the east of the Coen Shear. They are prospects of principally thin gold - sulphide veins in granite. The prospect areas are intruded by later rhyolite dykes, which are also gold mineralized, but rhyolite mineralisation is broad and low grade, with general grade of 0.3 g/t Au. Saracens resource is based on the the thin veins. A review of the bulk tonnage potential is warranted. Drilling of the dyke has been generally of shallow depth, deeper drilling left for the vein mineralisation. A review of the high grade mineralisation is warranted. Drill results confirm high grades extend to 7080 metres depth, and a uniform program would confirm depth dimensions.

3.8 GREAT NORTHERN PROSPECT

No reports are available for any work Saracen or CRA may have undertaken on the Great Northern prospect. This is the largest producer from the Coen field. Information of this prospect will need to be drawn from other sources. *See extracts from de Havelland (1989) below (BHD).*

3.9 GREAT SOUTHERN PROSPECT(May North sheet)

Saracen Data

- Located just to south of Coen
- Gold mineralisation in quartz veins in Coen Metamorphics, just to the west of the Coen Shear. Rhyolite intrudes the metamorphic rocks.
- Historic production was limited, approx 300 ozs gold.
- Saracen reported soil sampling, trenching and drilling. Trenching of the quartz veins outlined approx 2 metres of 2-3g/t Au. Drilling confirmed these widths and grades. Trenching of the rhyolite indicated 20 metre widths of approx 0.2 g/t Au, and again, drilling confirmed these widths and grades.

CRA Data

CRA did not report work on this prospect

J Sainsbury Comment

This prospect, like those to the immediate north, show two types of gold mineralisation. The thin high grade veins became the main target for Saracen. The broad, mineralized dykes, were, because of low grade, not followed up after limited trenching and shallow drilling. The bulk tonnage rhyolites are now the target for follow up with deep drilling.

3.10 LONG TUNNEL - TRAFALGAR PROSPECTS (April North Sheet)

Saracen data

- These prospects are located 2 km south of Coen
- The prospects are located to the immediate west of the Coen Shear, in metamorphics. The Trafalgar is the southerly strike extent of Long tunnel Gold mineralisation is within thin shears and veins in metamorphics. Historic production from the Long Tunnel is 1030 ozs gold; from the Trafalgar is 1611 ozs gold.
- Saracen undertook soil sampling, trenching and drilling on these prospects. The Long Tunnel returned only low order gold from all the exploration programs. The Trafalgar line was cut by approx 30 trenches and some very reasonable results were returned (25 m @ 2.0g/t Au, 8 m @ 3.7g/t Au). Drilling, directed under some of the trench results, did not repeat widths and grades .

CRA Data

- CRA did not report work from these prospects

J Sainsbury Comment

There is no reporting of rhyolite dykes from these prospects. There were some very reasonable trench results, only some of which have been reportedly followed up with drilling. What drilling has been completed near trenches generally downgrades trench results. The Trafalgar is worthy of follow up. Trench results should suggest that some high grade resource can be calculated. It is unusual that no rhyolite was reported, and it may be worthwhile to explore for such an occurrence, for bulk tonnage potential.

3.11 THE NELSON PROSPECT (April North Sheet)

Saracen Data

- Located 2 km SE of Coen
- The prospect is located to the east of the Coen Shear in granite.
- Gold mineralisation is associated with shears and fractures within and on the edge of rhyolite dykes, that have two main trends, one of northwest, parallel to the main Coen Shear trend, the other being north-south.
- Saracen completed a broad soil program that defined a gold anomalous area of 350m by 200m metres. 24 trenches were dug with variable gold results and best result of 9m @ 0.49g/t Au. 19 drill holes were completed, all of shallow depth. **Results confirmed the broad, low level gold content of the rhyolites, with best of 12m @ 2.18 g/t Au.**

CRA Data

- CRA completed a regional based soil sampling program over the trace of the Coen Shear between 5 and 10 kilometres southeast of Coen. CRA outlined promising gold in soil anomalies in the Nelson prospect area., over an area of 1700 m by 250m. CRA commented on the Saracen work, and of its work to only a limited area of the anomaly defined by CRA. Of interest CRA defined a further gold and particularly, arsenic soil anomaly to the east of the known Nelson prospect, in a rock type described as a porphyritic diorite intrusive described as later than the surrounding granite. CRA commented as to this new type of mineralisation in the Coen field. CRA did no further follow up

J Sainsbury Comment

The Nelson prospect is another where there is a broad gold association in rhyolite dyke. Again , however, the best trench and drill results of Saracen are marginally economic. The drilling is shallow and the prospect is worthy of follow up. The CRA work indicates the much broader gold anomaly in the district, and the comment of the diorite suggests intrusive source and thus tonnage potential, This constant association of gold mineralisation with dyke is an very good target to see if there is a development of size and grade within one of the dyke locations.

3.12 LOUIS TUNNEL PROSPECT (April South Sheet)

Saracen Data

- Located 5.5 km SE of Coen
- The prospect is located to the east of the Coen Shear in granite.
- Gold mineralisation is associated as quartz -sulphide veins in a sheared granite . Three northwest trending, parallel veins were located. Workings are noted and were penetrated in the drilling but no production is known.
- Saracen undertook soil sampling, rock chip sampling, trenching and drilling. Trench results returned high gold values with best of **8m @ 16.2g/t Au, 4m @6.3g/t Au. 42 drill holes were completed and a number of good results were returned, with best of 4m @ 6.8 g/t Au, 3m @ 7.5g/t Au**. A number of 1 and 2 metre intercepts of similar grade were returned.
- Saracen estimated a resource to 50 metres depth as **76,560 tonnes @ 7.1 g/t Au**

CRA Data

- CRA defined a broad area south of Coen as their Louis Tunnel prospect. Regional soil sampling was completed (lines at 400 metre spacing). There is no mention in the CRA reports of anomalous responses in the Saracen defined Louis Tunnel prospect. The main CRA anomalies were in the Nelson area.

J Sainsbury Comment

Gold mineralisation is within quartz veins in altered and sheared granite. This repeats gold prospects to the north west of high grade vein occurrences. The district is worthy of follow up for high grade veins as well as dyke associated mineralisation.

3.13 ROTHWELL PROSPECT(April South Sheet)

Saracen Data

- Located approx 7.5 km SE of Coen.
- These covers a number of prospects named by Saracen as Rothwell, Westralia, Four Mile Stewart and Red Soil Skarn

- In this area the Coen Metamorphics remains as a small outcropping area surrounded by Siluro-Devonian granites
- Gold mineralisation at Rothwell, Westralia and Four Mile Stewart are quartz sulphide veins in metamorphics. At Red Soil Skarn, gold mineralisation appeared to be related to a ferruginous zones in metamorphics, likely related to a skarn type reaction of the metamorphics to the intruding Siluro-Devonian granites.
- Saracen undertook soil sampling, trenching and drilling. At Rothwell trench results were encouraging with best result of 6m @4.17g/t Au. Drilling below workings intersected low grade mineralisation. At Westralia, drilling located low grade mineralisation. At Four Mile Stewart, some reasonable trench results were returned and only three drill holes completed, two intersecting very good values at depth, namely, hole SWP1 **from 30 metres, 3 m @ 6.06g/t Au, and hole SWP3 from 78 metres, 4 m @ 6.05 g/t Au. These holes were apparently not followed up. At Red Soil Skarn some wide zones of ferruginous zones were trenched with best of 8 m @ 2.03g/t Au. This prospect was not followed up with drilling.**

CRA Data

- The broad area around Rothwell initially returned a number of BCL stream anomalies, and the area became a priority target
- The area was a part of the regional soil sampling program of 400 metre spaced lines which defined a narrow gold plus arsenic anomaly over 1500 metres of strike. Within this area, CRA mentioned the exploration work of Saracen and in particular, the high grade trench result at Rothwell, mentioned above, which was not followed up by the Saracen drilling . They also mentioned work and results of the Saracen defined prospects at Westralia, Four Mile Stewart and Goolha Goolha.
- Three trenches were completed , with best of 5m at 1.27g/t Au.
- Three drillholes were completed, one testing the CRA trench result. Best result was in hole RC94RW 1, **2m @ 4.78 g/t Au**
- CRA report no work on the Red Soil Skarn prospect

J Sainsbury Comment

This cluster of prospects lies within and to the west of the Coen Shear. Host rocks are metamorphics and a Siluro- Devonian granite that has stoped out the metamorphics. Gold mineralisation occurs as thin quartz-sulphide veins, with the apparently important exception of Red Soil Skarn. **The high grade results of Four Mile Stewart should be followed up to estimate a resource**. The Skarn prospect should also be followed up for bulk tonnage potential. Trench results are certainly encouraging.

3.14 SIDAR PROSPECT (April South Sheet and Mid Sheet)

Saracen Data

- Located 12 km SE of Coen
- There are several prospects straddling the Coen Shear, this Shear marking the contact of the Siluro Devonian Lankelly Granite on the east, and Coen Metamorphics and Siluro- Devonian Kintore Granite to the west. This confirms the picture, that in coming to the south of Coen, the Kintore Granite is stoping out Coen Metamorphics. However the Coen Shear is still recognizable, showing movement and deformation along the shear was at least post granite intrusion.
- Saracen recognized a rhyolite hosted gold mineralisation to the east of the Coen Shear (Sidar East prospect) and thin quartz-sulphide veins in and to the west of the Coen Shear.

- 18 trenches were cut at Sidar East, with best of 40 metres @ 2g/t Au. 21 trenches were cut at Sidar, with best of 4m @ 2 g/t Au. Saracen only drilled the Sidar prospect and returned narrow intercepts, with best of 1 m @ 5.65g/t au

CRA Data

- CRA viewed the Sidar East prospect as a worthwhile target, and followed up with BCL stream sampling and soil sampling. They outlined a gold in soil anomaly over 1200 metres long. CRA did no drilling

J Sainsbury Comment

This prospect represented a broad spread of gold mineralisation across the Coen Shear, from dyke hosted in the east to vein hosted in the west. It appears to have had limited drilling follow up of encouraging trench results, and there is potential for bulk tonnage and high grade veins.

3.15 THORNBURY GROUP OF PROSPECTS (Mid Sheet)

Saracen data

- Located 30 km SW of Coen
- Well away from the Coen Shear, and hosted by Coen Metamorphics
- Gold mineralisation is quartz- sulphide veins, and parallel veins have been located. The mian trend is north-south
- Saracen completed soil sampling, trenching and drilling. 17 trenches were cut, with best of 3m @ 6.17 g/t Au.. A number of shallow drill holes were completed with one area returning some reasonable values, with best of Sm @ 3.8g/t Au and 3.3 m @ 3g/t Au.
- A resource was estimated from these better results of 52,825 t @ 4.7g/t Au

CRA Data

- CRA commented in their 1994 report that they were to undertake work at this prospect. It is unknown if that occurred.

J Sainsbury Comment

It is unknown if CRA did work beyond 1994 as no information was in the data package. There are several targets of high grade vein to follow up, based on the Saracen drilling.

SUMMARY

The EPM application 11809, held by Jim Quinn and Rod Siller contains the 16 kilometre strike line of historic mine workings that make up the Coen Goldfield. This strike extent was explored in reasonably detail through the period 1986-1994, initially by Saracen Minerals NL and later by joint venture partner CRA Exploration.

A number of reports were made available to me to review as to remaining hardrock gold potential held within the application area.

The significant control on gold mineralisation is the north west trending Coen Shear. This separates the Proterozoic Coen Metamorphics to the west from the Siluro - Devonian Lankelly Granite to the east. The Coen township sits on the shear.

Historic gold production of approx 77,000 ozs gold, has principally been won from one mine, the Great Northern. The historic production was recorded as coming from thin, high grade quartz-sulphide veins. The Great Northern went to approx 150 metres depth, the Wilson to approx 120 metres depth.

The Saracen and CRA work highlighted a further number of high grade quartz- sulphide veins and Saracen estimated resources for some prospects where some reasonable consistency was shown:

- Stockholm-50,850 t @l lg/t Au
- Louis Tunnel-76,560 t @,7.1 g/t Au The Bend- 92,750 t @4g/t Au
- Thornbury North- 52,825 t @4.7g/t Au

I have not sought to confirm these figures and they are reproduced as given.
In addition a number of high grade targets are worthy of follow up to further calculate high grade resources:

Wilson Prospect to follow up trench result of Sm @20.8g/t Au, trench result of 15m @ 2.3 g/t Au, and drill result of 10 m @ 4.48g/t Au

Trafalgar Prospect to follow up trench result of 8 m @ 3.7g/t Au Rothwell prospect to follow up trench result of 6 m @ 4.17 g/t Au Four Mile Stewart Prospect to follow up drill result of 4m @ 6.OSg/t Au and 3m @ 6.06g/t Au

Sidar East Prospect to follow up trench result (high grade section) l Om @6.49 g/t Au. These are some of the better results and there are a number of 1 to 2 metre trench and drill widths of similar grades to that above, on which shallow mines could be developed. It could be expected that a further several hundred thousand tonnes of approx 4g/t An could be outlined as near surface resource

The Saracen and CRA work also highlighted the bulk tonnage gold potential along the Coen Shear. The Coen Shear trend, particularly along its eastern edge, in the Lankelly Granite, has been intruded by a Permo - Carbonferous aged series of rhyolite dykes. The dykes either have a strike parallel to the Coen Shear or have a north - south trend. Saracen and CRA generally found the dykes to be weakly mineralized (< O.Sg/t Au), although with higher grade sections within them. These dykes could be up to 20 metres wide and several kilometers long. The dykes generally gave rise to broad zones of gold soil anomalies. Saracen followed up with trenching and shallow drilling, confirming the subeconomic nature of dyke gold mineralisation. CRA, noting the Saracen results, generally did not do detailed drilling of these dykes.

The dykes offer the potential for bulk tonnage targets. A review of all the data should allow a focus on better mineralized dyke systems. As mentioned, the dykes have been only tested to shallow depth.
Some better targets are:

- Lankelly Dyke Trend of prospects from Hanging Down to Daisy Within this approx 3 km trend are a number of trench results including 16m @0.3g/t Au, 24 m @0.3 g/t Au, and drill result 18m @ 0.36g/t Au Trafalgar Prospect trench result of 25m @ 2g/t Au

- Nelson Prospect trench result of 9m @0.49g/t Au and drill result of 12m @ 2.18g/t Au. CRA returned a large gold and arsenic soil anomaly on this prospect, which was not followed up
- Sidar East Prospect trench result of 40m @2g/t Au

As well as these targets two further bulk tonnages are indicated

- Red Soil Skarn - a skarn development on a calcium rich unit in the metamorphics. A gold bearing intrusive has caused the skarn development. Only skarn rock has been sampled, trench result of 8m @2.03g/t Au. However the gold intrusive has not been described yet. And this represents the bulk tonnage target, further exploration is required.
- Wilson Prospect- The Wilson prospect was unusual in that CRA described gold mineralisation in metamorphics as occurring without quartz veins and within a slightly altered rock. A reasonable gold enrichment as found by CRA but not contained by quartz veining may reflect a broad diffusion of gold mineralisation, and thus a bulk tonnage target. This target is certainly worthy of further work.

The Saracen and CRA work outlined the Coen area as an area with several ages of gold mineralisation. The quartz- sulphide veins are Devonian aged gold systems, and have similar style as the same aged deposits in Charters Towers and Georgetown The PermoCarboniferous aged event in North Queensland is associated with large gold depositsKidston, Mt Leyshon, Ravenswood, Red Dome. The mineralized rhyolite dykes, may represent only the near surface expression of a much larger gold system. The diffuse Wilson Prospect gold mineralisation could similiarly be a near surface expression.

A very good plus for the Coen area is that the Coen Shear has acted as a focussing channel for the gold bearing fluids. If there are bulk gold deposits in the Coen area, they are going to be around the Coen Shear.

From "Gold and Ghosts, Vol 4" by DW de Havelland (1989)
Great Northern Mine - Coen

De Havelland (1989) (see following notes) describes the Great Northern as being a single quartz vein occurring over the strike length of 250m with a shaft depth of 150m and a maximum of 15m width. Clearly these dimensions cannot be used to calculate volumes however they do point to the potential for more ore - either as stope remnants or below cut-off grades.

Consider the other data from de Havelland (1989):
Production was 26,234t for 69,531.5 oz Au (for a calculated 82gm/t Au average recovered) including some 20,000t (obviously a guess) for 13,196 oz Au from **waste (at a grade of 20.5gm/t Au) – does this indicate that the "cut-off grade" in the mine was 20gm/t Au??**

By subtracting the "Waste" gold from the "Production" gold gives **6,234t at a grade of 281gm/t Au (9 oz Au/t)**. This cannot be taken as the exact figure but it suggests that the head grade of the mined had been very high

Considering the dimensions mentioned above, and the production, there appears to be considerable room for significant remnants at what is probably very high grades.

Verbal comments have recently been received (J Quinn pers comm. June 2007) that during the Saracen era two drill holes were put down into a parallel structure some 50m to the east. Results reported were 20gm/t Au over 2m thickness. This was near-surface results (<50m) and could possibly be accessed from re-opening the Great Northern shaft and mining the target underground. These drilling results need to be located and confirmed.

This, together with the rough estimates above suggests that the Great Northern is a significant target, with potential for parallel veins.

APPENDIX 2

Quartz, Quartzite and Gold in the Coen Inlier

Summary

It is suggested that most of the quartzite of the Coen Inlier are not metasediments but in fact rhyolite.

The many known hard rock gold deposits of the Coen Inlier have been characterised by low tonnage, narrow widths, small podiform ore shoots and lack of continuity.

It is suggested that this is a result of the mineralised ground lacking the correct characteristics.

A significant amount of mineralization occurs in " black quartz". It is believed that this "black quartz" has been misidentified as quartz veins but is in fact silicified and metasomatised Proterozoic rhyolite.

This suggests that these rocks have considerable potential for "stockwork" type deposits. This style on mineralisation has in fact been seen by prospectors and explorationists but as it has been misidentified a lode type deposits has not properly been explored.

Gold in the Coen Inlier a new model.

Thousands of gold shows have been discovered to date in the Coen Inlier.

Hundreds have been have been worked, A handful have been significant. Not one to date, has been a large deposit.

Geological Setting

The Proterozoic Coen Inlier is about 80% covered by younger deposits ranging from Pleistocene Sand plain to Palaeozoic sediments of the Laura Basin.

There is a thick sequence of Proterozoic metasediments with some siliceous units "Quartzite's". The metamorphic grade is in general amphibolite facies with much regression to greenshscist (chlorite I to III). This has been much modified by a Carboniferous episode of calc-alkaline granite intrusion and associated volcanism. There are minor areas of extrusive Rhyolite (Janet Range volcanics) and many volcanic plugs (Mt Croll etc) and many rhyolite "dykes" (Great Northern, Llankelly dyke) which are in fact fall back ignimbrites for feeders for ignimbrite eruptions.

The Carboniferous episode of acid to intermediate magmatism is associated with large scale retrogressive metamorphism, propilisation, sericitisation, kaolinisation silicification and quartz veining, gold±silver mineralisation and gold±schelilite mineralisation. There is tin mineralisation associated with adamelite plutons.

The whole lot is transversed by the Coen Shear a crustal scale "fault" active since at least the Carboniferous. The sense of movement appears to have been mainly sinistral. Recent movement (mid tertiary to recent) has produced the Coast and McIllwraith Ranges. There is evidence of recent uplift event of about 3 meters affecting the Coen Princess Bay area. The sense of this movement is east block up.

This latest movement has resulted in removal of the laterite profile from most uplifted areas east of the Coen Shear and results in most known gold occurrences are east of the shear.

Most Coen inlier gold deposits are hosted in vein quartz, these are hosted in a variety of country rock and reasons not expanded on here are largely narrow discontinuous and lack strong structural controls. In some cases the veining comes close to a viable stockwork (The Bend.) The textures and mineralogy suggest a variety of depths of emplacement from mesothermal to epithermal.

Some Coen Gold (Wilson, Trafalgar Line and others) occurs in black quartz. This is cryptocrystalline, chert like, and shows mesoscopic evidence of serial episodes of silicification.

Most occurrences are within the Coen Shear Zone and are well described as boudins varying in size from a few cm to few 10s of meters in size. They are part of the shear zone, the geometry is completely unpredictable, the whole thing is strongly evocative of the great melanges associated the Alpine Fault in New Zealand and the San Andreas fault of Northern California.

It is the authors belief that these are "horses ' of "quartzite" of the Coen Inlier and that the mineralisation (allowing for some remobilisation) predates their incorporation into the "fault breccia".

If this hypothesis is correct it raises the probability of economic sized bodies of this mineralisation outside the immediate shear zone.

What are the Coen Inlier Quartzites ?

The assumption has been that these are metasediments. This is in the writers opinion is unlikely.

Most Proterozoic quartzites are very uniform in thickness and sit above a profound unconformity.

Usually cross bedding is very evident even at Amphibolite facies metamorphism. This is usually sufficient to enable the direction of younging to be evident, even in strongly deformed area such as the MacDonald ranges of Central Australia.

Basal conglomerates are common and most quartzite's fine upwards.

The Coen Inlier quartzites are notably lensoid. The thickness varies from a few metres interceded with schistose, graphite rich, high magnesium amphibolites (?meta saprolites) to large near eqidimensional lenses.

There is no sign of a metamorphic unconformity. For basin sized quartzites such as those of Central and South Australia (Amadeus ?Ngalia Basin/ Flinders Ranges) a profound unconformity representing a time period of a billion or so years and depth of burial of some 20km is central to the formation of these rocks. There is no hint of this in the Coen area.

In an attempt to solve structural problems I have searched long and hard for crossbedding and/or conglomerate horizons. I have never found any or indeed anything I could delude myself was crossbedding.

At Tadpole Creek 20km west of Coen there is some gold uranium mineralisation associated with a narrow "quartzite". This contains nodules which were identified as volcanic bombs by a petrologist.

From this I conclude that the quartzites of the Coen Inlier are largely rhyolites/dacites severely modified by subsequent metamorphism and the Carboniferous magmatic episode and then in many cases disrupted by the Coen Shear.

These quartzite bodies will thus include volcanic plugs and domes of internal growth, ignimbrite sheets, tuffs, water redeposited tuffs and lahar debris.

It may be objected: "Where are the associated granitoids?' They are there in plain sight. About 50% of the Coen Inlier consists of acid to intermediate gneiss. These are traversed by and associated with simple pegmatites and minor granitoids crowded with gneiss horses. These will be the original granitoids modified by metamorphism and granitisation associated with the Carboniferous magmatism.

If this is so there are profound implications for exploration.

I do not propose to explore these in any detail here. That is a massive task, but to touch a few points.

These are very good source rocks for the gold. Remobilisation of gold associated with epithermal and solfataric deposits would produce most of the small deposits seen today.

These physically competent rocks are ideal hosts for micro fracturing.

When these beasts are explored the critical thing is the geometry of the host rock **Not** the controls of the veining.

The majority of these mineralised meta-rhyolites will have mineralisation on their margins. These narrow lensoid high grade zones have and do attract the attention of prospectors gougers and geologists. They distract from the main game.

Exploration for gravel near the old Wilson Mine exposed a zone of quartz and silicification some 250 metres wide with silicified bodies up to 4m in width.

This area was inspected in the Company of Mr James Quinn. I believed this to be a body of the type discussed. This is in very close proximity the Coen Shear and the rocks are highly altered, almost a mylonite.

During this inspection Mr Quinn collected random chip samples from several of these bodies. I understand these samples have been assayed and subject to a petrological examination (results appended).

Rhys Gardiner (Coen)

1995 to 2010