AN UPDATE OF REGIONAL EXPLORATION ACTIVITIES FOR THE PAULSENS PROJECT ASHBURTON REGION WESTERN AUSTRALIA

20 AUGUST 2006

FOR

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SUMMARY

The Paulsens Project is located in the western Pilbara region in the north of Western Australia, approximately 1,050 kilometres north of Perth. The tenements currently being explored by Intrepid Mines Limited (Intrepid) are held 100% by Intrepid, or exploration activities are managed by Intrepid in joint venture with the tenement holders. Intrepid has been conducting exploration in the Paulsens area since early 2005.

The following report summarises the geology of the Paulsens Project tenements and regional exploration undertaken by Intrepid and previous explorers.

The Paulsens Project tenements are located on the western and southern extents of the Wyloo Dome within the Ashburton Basin, at the western extent of the Pilbara Craton. Archaean granite and greenstones of the Pilbara Craton are exposed at the core of the dome. Archaean basal lithologies are overlain by rocks of the Late Archaean to Early Proterozoic Mount Bruce Supergroup (Hamersley Basin) and Early Proterozoic Wyloo Group (Ashburton Basin). The Wyloo Dome was formed during the Early Proterozoic Capricorn Orogen, an event that produced the Ophthalmia and Ashburton fold belts. Mineralisation is of several styles, including structurally controlled within Archaean lithologies (Paulsens deposit), stratabound within Proterozoic sediments (Mt Clement resource), and potentially Carlin-style within Lower Wyloo, Proterozoic sediments (Mt Olympus deposit).

Paulsens has a history of mining dating back to the 1930's, when the small-scale Paulsens (also known as Melrose) Mine commenced operation. Although several companies have explored the area in subsequent decades, significant exploration at Paulsens did not commence until the late 1980's when CRA Exploration (CRAE) began assessing the economic viability of mineralisation associated with the Paulsens workings. Taipan Resources (Taipan), already holding the surrounding tenements, acquired the Paulsens property from CRAE in 1995. Work by Taipan significantly increased the size of the Paulsens deposit, and the company also commenced regional exploration work. In 2000, St Barbara Mines (SBM) acquired a controlling interest in Taipan and commenced studies to determine the feasibility of mining the Paulsens orebody. SBM also entered into joint venture arrangements and acquired further tenements in the Paulsens area. In December 2003, the St Barbara controlled Taipan Resources was substantially restructured with NuStar Mining Corporation being formed as a separate entity, holding all of Taipan's previous assets and the more recently acquired St Barbara ground holding in the Paulsens area. Until this time the tenement holding in the Paulsens area had been fragmented, with many of the tenements held by junior companies who did not possess the financial resources to conduct significant exploration programmes. The focus of exploration in the area to this point had been the Paulsens orebody with minimal regional exploration conducted.

NuStar commenced development of the Paulsens deposit as an underground operation in mid-2004. To define satellite deposits for the Paulsens Operation, regional exploration commenced in early 2005. Initial efforts involved validating and restructuring the database and compiling all available exploration data. Field work commenced immediately with RC drilling and soil sampling programmes completed and additional exploration staff were hired. In July, 2006, NuStar Mining successfully merged with Canadian based explorers Intrepid Minerals, creating Intrepid Mines Limited.

Regional exploration completed to date by Intrepid at Paulsens includes RC drilling, RAB/aircore drilling, auger geochemistry, and rock chip and soil sampling. Various studies

have been undertaken to augment exploration programmes and techniques including the completion of a regional-scale surface geology interpretation, multi-element geochemistry analysis of drilling samples, MMI geochemistry orientation sampling, geophysical studies, spectral analysis alteration studies, and detailed structural mapping of the Paulsens orebody. Exploration is hampered by both regolith unsuitable for most common greenfield exploration techniques and the rugged topography of the Paulsens area, nonetheless, targets have been defined for RC drilling, to be undertaken later this year.

A twelve month budget of $A1.3 million has been allocated for the financial year for regional exploration in the Paulsens area, to cover geochemistry sampling, geophysical surveys, and drilling programmes. An additional $A1.0 million has been provided for additional drilling of the Paulsens Deposit, to define down-plunge and down-dip extensions to the currently defined resource.

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1.0 INTRODUCTION

Intrepid has been exploring the Paulsens area since early 2005, with work involving RC and RAB/aircore drilling, auger geochemistry, soil and rock chip sampling and various studies designed to augment exploration techniques and allow a more detailed interpretation of results. The Paulsens area has a history of modern exploration for gold and base metals dating back to the late 1980's, although exploration efforts have primarily focused on the Paulsens orebody. Current exploration work is aimed at defining satellite deposits to supplement feed for the Paulsens processing plant. Previous regional exploration has been completed at various levels of detail by a number of companies. Intrepid's exploration efforts have involved further investigation of prospective areas as defined by the results of previous explorers, and several previously unexplored areas have been targeted based upon prospectivity as determined by desk-top studies.

This report is authored by Erik Norum, Exploration Manager, Australia, for Intrepid Mines Limited, the Qualified Person for the project. The author is familiar with the legal and government requirements relating to the Paulsens tenements and is the manager for exploration undertaken within Intrepid's leases and for tenements under joint venture agreements. The author undertakes regular visits to the Paulsens site and is involved in planning exploration programmes and interpretation of results. This report is compiled from various statutory reports submitted to the Western Australian Department of Industry and Resources (DOIR) and contains re-verified and updated information from these reports. This report also details recent exploration work undertaken by Intrepid and not yet documented in reports to the DOIR. Data obtained from previous explorers and not generated by Intrepid has been validated and verified to the highest possible standards.

Intrepid conducts its exploration activities in Australia from the company's head office in Perth and also maintains a field office at Paulsens Minesite.

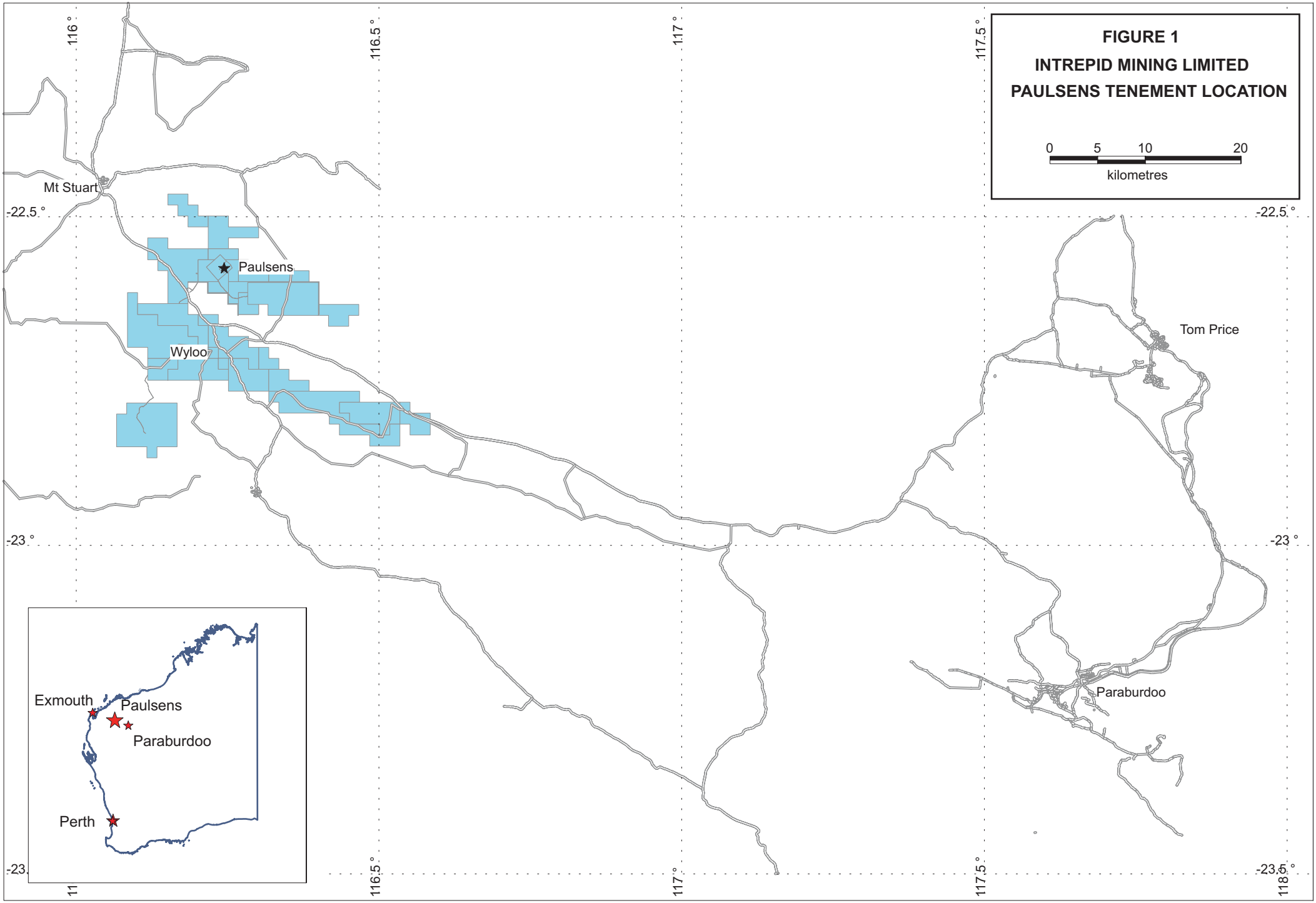
2.0 LOCATION AND ACCESS

The Paulsens Project is located in the southwestern Pilbara region in the north of Western Australia, approximately 1,050 kilometres north of Perth (Figure 1). The project tenements are located on both Wyloo and Mt Stuart Pastoral Stations.

The tenement holding is bounded by GDA94 coordinates 116° 3’ 30” E to 116° 35’ 30” E and 22° 27’ 36” S to 22° 52’ 17” S. The leases are located on the Wyloo 1:250 000 topographic sheet (SF 50-10) and cover portions of the Wyloo, Mt Stuart and Hardey 1:100 000 topographic sheets.

Access to the Paulsens Prospect is via the Nanutarra - Paraburdoo Road, which is tar sealed from the North West Coastal Highway. The closest town is Paraburdoo, a mining town of approximately 2,000 people, located 185 kilometres to the east-southeast. Paulsens mine is serviced by charter flights to the Intrepid maintained airstrip at Wyloo Station, or by commercial flight to Paraburdoo, then by vehicle to the mine site.

Pastoral lease and exploration tracks provide access throughout much of the tenement area. Homesteads for the Wyloo and Mt Stuart Stations are located 10 kilometres to the south and 25 kilometres northwest respectively of the Paulsens Gold Mine. The Paulsens mine site is situated within the Mt Stuart pastoral lease.


FIGURE 1
INTREPID MINING LIMITED
PAULSENS TENEMENT LOCATION
0 5 10 20
kilometres
Mt Stuart
Paulsens
Wyloo
Tom Price
Paraburdoo
Exmouth
Paulsens
Paraburdoo
Perth
116 °
116.5 °
117 °
117.5 °
118 °
-22.5 °
-23 °
-23.5 °

3.0 PHYSIOGRAPHY, CLIMATE AND VEGETATION

Intrepid's tenements are located south of the Hamersley ranges. Topographic relief in the immediate tenement area varies from approximately 200m above sea level to a maximum of 485m at Mount DeCourcey. The tenements straddle a geological feature known as the Wyloo Dome. Topography comprises gently undulating hills within the eroded core of the dome. The northern and southern margins of the dome are markedly more rugged, comprising steep ridges and narrow gorges. The Paulsens Mine is recognised by a large quartz outcrop of 30 metres height that is readily distinguishable on satellite imagery.

Rivers and creeks are ephemeral, generally only flowing after heavy rain. The Ashburton River runs to the south of Intrepid's tenements, with tributaries including the Hardey River, Metawandy Creek and Duck Creek passing through the leases.

The climate is semi-arid to arid with annual rainfall between 200 to 300 mm, although this can vary considerably dependent on cyclonic conditions during mid to late summer. Most rain falls from January to June. Summers are very hot; January maxima range from 36 to 41°C; minima from 24 to 26°C. Winters are mild: July maxima range from 21 to 25°C, minima from 6 to 11°C. The highest recorded temperature at Paraburdoo is 48.9°C. Due to the extreme weather conditions, field activity is not undertaken during the peak summer period.

Flora is abundant and variable. On outcrops, the cover consists of buck spinifex (Triodia wiseana), scattered snakewood (Acacia xiphophylla), A. pyrifolia, A. victoriae, Cassia spp., and the ephemeral Angianthus sp. Sandplains and patches of sandy soil on granitoid outcrop are characterized by Acaciapyrifolia, soft spinifex (Triodia pungens), Acacia pachycarpa and Grevillea pyramidalis. Eucalyptus setosa is locally present on deep sand. Main river channels throughout the Ashburton Basin are lined with Eucalyptus camaldulensis, up to 20m in height, and with smaller Melaleuca leucodendron. Alluvial flats adjacent to the large channels may contain abundant Eucalyptus microtheca, Acacia citrinoviridis, and A. coriacea; and a ground cover of Cenchrus ciliaris and Calotis multicaulis (Beard, 1975).

4.0 TENEMENT DETAILS

4.1 Ownership details

Intrepid holds an interest in a total of 43 tenements in the Paulsens area, comprising a combined area of 769 square kilometres. Tenure is through outright ownership or joint venture. Details of Intrepid's landholding is listed in Table 1.

The history of the tenements is summarised below. A history of exploration activities on the tenements is summarised in Section 7.

- Taipan Resources originally held and explored licences E08/665 and E08/906, granted in 1993.
- Taipan Resources purchased M08/99 from CRA for a cash settlement and an attached gold royalty in May 1995.
- M08/196 and E47/977 were granted to Taipan in 1999.

- The Mt Clement tenements, M08/191, M08/192, M08/193 and E08/1256 (now surrendered and re-pegged as application ELA08/1606), were granted to Taipan in 1999. In 2005 an arrangement was made with Simmax Mining and NuStar for Simmax to acquire the tenements for a 20% free carried interest retained by NuStar.
- E08/1096, E08/1125 and M08/222 were granted to Taipan in 2000.
- St Barbara Mines acquired all of Taipan Resources' assets through an 88% holding in Taipan through a takeover of the company in 2000.
- E08/853 and E08/854 are held by Pelican Resources. Initial exploration was conducted by Pelican (formerly NuGold Resources) and Goldfields Australia. St Barbara entered a joint venture arrangement with Pelican in 2002.
- E08/1191, E47/1134 and P08/490 were granted to St Barbara in 2003.
- E08/1145, E08/1166 and E08/1189 are held by Cullen Resources. Initial exploration was conducted by Cullen and Barrick Resources. NuStar entered a joint venture arrangement on the tenements with Cullen in 2005.
- In December 2003 the St Barbara held Taipan Resources was substantially restructured with NuStar Mining being formed as a separate entity, holding all of Taipan's previous assets.
- E08/1190 was granted to NuStar in 2006.
- During 2006 a merger between NuStar Mining and Intrepid Minerals was effected.
- A number of tenement applications await granting (see Table 1).

Intrepid is currently active in three joint ventures in the Paulsens area:

1. The Wyloo Joint Venture, between Intrepid and Pelican Resources (the registered tenement holder), comprises E08/853 and E08/854. Intrepid is the manager of the joint venture. Intrepid can earn up to a 70% interest by expenditure of a total of $A1,000,000 through initial expenditure of $100,000 in year one; $600,000 by the end of year three to earn 51%; and a further $400,000 by the end of year four to earn 70%. Following the earning period, both parties are required to contribute JV expenditure in proportion to their participating interests. Pelican may elect not to contribute to expenditure, reducing their participating interest to a minimum 10%. If participating interest falls below 10%, then their interest will revert to a 2% net smelter royalty.

2. The Hardey Junction Joint Venture, between Intrepid and Cullen Resources (the registered tenement holder), comprises E08/1145, E08/1166 and E08/1189. Intrepid is the manager of the joint venture. Intrepid can earn up to a 70% interest by expenditure of a total of $A800,000 through initial expenditure of $75,000 in year one; $500,000 by the end of year three to earn 51%; and a further $300,000 by the end of year four to earn 70%. Following the earning period, if Cullen elects not to contribute to expenditure in proportion to their participating interest, they will revert to a 25% carried interest, but only for the period prior to a Decision to Mine being made, or Cullen may elect not to contribute further and revert to a royalty interest.

3. The Mount Clement Joint Venture, between Simmax Mining (a subsidiary of Redport Mining) and Intrepid Mines comprises M08/191, M08/192, M08/193 and E08/1606. Redport are the managers of the joint venture. Intrepid holds a 20% free carried interest in the tenements until completion of a feasibility study. On completion of a feasibility study, Intrepid may contribute proportionally to any mining costs, or elect to revert to a 2% entitlement to any gold produced from the tenements.

4.2 Tenure Obligations

In Western Australia, mineral exploration and mining activities are managed under the Mining Act 1978 (WA) and Regulations. The Act provides for different types of tenements to be issued for different mining activities. These include prospecting, exploration and miscellaneous licences, as well as mining and general purpose leases. Intrepid's Paulsens tenements are granted under the conditions and terms as outlined in the Mining Act 1978 (WA).

Most of the requirements are connected to the anniversary date of the commencement of the term of the tenement. These conditions and covenants could include any of the following:

- Payment of rent
- Payments of royalties
- Lodgement of Form 5 operations reports
- Complying with conditions of grant
- Lodgement of bonds and securities
- Applications for exemptions.

Failure to meet any of the above conditions and covenants could result in the forfeiture of the mining tenement.

Regulation of environmental and native title issues associated with mining are managed through various sections under the Act.

Legislation that may regulate environmental aspects of mining operations include the following:

- Mining Act 1978 (WA)
- Environmental Protection Act 1986 (WA)
- Conservation and Land Management Act 1984 (WA)
- Wildlife Conservation Act 1950 (WA)
- Rights in Water and Irrigation Act 1914 (WA)
- Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth)

There are no environmental caveats in place to restrict exploration within Intrepid's current tenement holding.

In 1992 the decision of the High Court in Mabo v Queensland recognised the concept of Aboriginal native title to land where those rights survived the acquisition of sovereignty by non-indigenous people. The Native Title Act (NTA) was enacted in response to the Mabo case to regulate dealings with native title lands, and its substantive provisions commenced on 1 January 1994. In Western Australia, the NTA procedures apply in conjunction with the Titles (Validation) and Native Title (Effect of Past Acts) Act 1995 (WA) and the Titles Validation Amendment Act 1999 (WA).

Under the NTA procedure, negotiations are initiated to obtain the agreement of relevant native title parties to the carrying out of the proposed future act on the native title land. The right to negotiate procedures consist of a statutory period of negotiation between the relevant Government party, the native title party and the grantee, during which time the

parties must negotiate in good faith. Generally the right to negotiate process involves notifying relevant Aboriginal groups of the application for a mining interest, waiting the required time period for objections from any registered native title claimants and, if there are objections from native title claimants, negotiating on the grant of the mining interest. All of Intrepid's tenement holding is on pastoral lease land which admits the continued existence of native title rights and interests to the extent that such native title rights and interests have continued to exist in accordance with Aboriginal traditional law and custom and are not inconsistent with the rights of the holder of the pastoral lease and any other extinguishing event.

Intrepid's tenements are within the claim areas of the Puutu Kunti Kurrama And Pinikura People (PKKP) and Thalanji Groups. Agreements have been undertaken between Intrepid and both parties to expedite the granting of tenements and the completion of heritage surveys to allow exploration activities. Intrepid has conducted searches to determine the presence of sites deemed sacred to the traditional landholders in the Paulsens area. Previous heritage surveys on Intrepid's leases have outlined areas of cultural significance – exploration may be conducted within the areas with permission from the relevant claimant group.

4.3 Other Operational Obligations

A cooperation agreement is in place between Intrepid and the PKKP Group whereby PKKP are recognised as the Claimants for the area covering Intrepid's current mining operation. Ongoing payments are made to the PKKP Group such that Intrepid will pay $A2 for every Troy Ounce of gold produced from mining leases M08/99 and M08/196. Under the agreement, Intrepid is also obliged to "adopt a pro-active policy towards training and employing PKKP People in connection with their Mining Operations" and "will make a minimum of 3 positions available to suitably qualified PKKP people". A Monitoring and Liaison Committee has also been established between Intrepid and the PKKP with the object of monitoring and co-ordinating the implementation of the agreement, with meetings held quarterly.

Intrepid Mines Paulsens Project Tenement Holding.

TENID	TYPE	STATUS	HOLDER	GRANT DATE	AREA (Km^2)
E 08/665	Exploration	Live	Intrepid Mines	12/11/1999	63.04
E 08/906	Exploration	Live	Intrepid Mines	7/11/1996	60.26
E 08/1096	Exploration	Live	Intrepid Mines	4/10/2000	19.00
E 08/1125	Exploration	Live	Intrepid Mines	25/05/2000	19.04
E 08/1186	Exploration	Live	Intrepid Mines	4/09/2003	28.55
E 08/1190	Exploration	Live	Intrepid Mines	11/05/2006	6.38
E 08/1191	Exploration	Live	Intrepid Mines	20/10/2003	9.50
E 47/977	Exploration	Live	Intrepid Mines	18/10/1999	12.68
E 47/1134	Exploration	Live	Intrepid Mines	6/01/2003	19.02
L 08/12	Miscellaneous	Live	Intrepid Mines	10/11/1999	--
L 08/13	Miscellaneous	Live	Intrepid Mines	11/08/1999	--
L 08/14	Miscellaneous	Live	Intrepid Mines	11/08/1999	--
L 08/15	Miscellaneous	Live	Intrepid Mines	15/03/2003	--
G 08/50	General Purpose	Live	Intrepid Mines	24/11/1999	--
M 08/99	Mining Lease	Live	Intrepid Mines	14/02/1990	1.85
M 08/196	Mining Lease	Live	Intrepid Mines	3/03/1999	8.01
M 08/222	Mining Lease	Live	Intrepid Mines	24/08/2000	2.21
L 08/16	Miscellaneous	Pending	Intrepid Mines		--
E 08/1187	Exploration	Pending	Intrepid Mines		79.15
M 08/290	Mining Lease	Pending	Intrepid Mines		8.72
M 08/291	Mining Lease	Pending	Intrepid Mines		8.68
M 08/292	Mining Lease	Pending	Intrepid Mines		9.10
M 08/293	Mining Lease	Pending	Intrepid Mines		9.51
M 08/294	Mining Lease	Pending	Intrepid Mines		8.04
M 08/295	Mining Lease	Pending	Intrepid Mines		9.51
M 08/296	Mining Lease	Pending	Intrepid Mines		9.47
P 47/1264	Prospecting	Pending	Intrepid Mines		1.73
P 47/1265	Prospecting	Pending	Intrepid Mines		0.75
E 47/1553	Exploration	Pending	Intrepid Mines		60.23
M 08/348	Mining Lease	Pending	Intrepid Mines		9.50
M 08/349	Mining Lease	Pending	Intrepid Mines		9.50
M 08/350	Mining Lease	Pending	Intrepid Mines		9.50
M 08/351	Mining Lease	Pending	Intrepid Mines		9.50
P 08/490	Prospecting	Live	Intrepid Mines	28/02/2003	2.01
E 08/853	Exploration	Live	Pelican Resources	7/05/1996	57.03
E 08/854	Exploration	Live	Pelican Resources	22/04/1996	57.00
E 08/1145	Exploration	Live	Cullen Exploration	10/04/2000	31.67
E 08/1166	Exploration	Live	Cullen Exploration	11/08/2003	107.7
E 08/1189	Exploration	Live	Cullen Exploration	11/08/2003	38.03
M 08/191	Mining Lease	Live	Simmax Mining	10/05/1999	2.26
M 08/192	Mining Lease	Live	Simmax Mining	10/05/1999	3.02
M 08/193	Mining Lease	Live	Simmax Mining	10/05/1999	2.93
E 08/1606	Exploration	Pending	Simmax Mining		75.94

5.0 REGIONAL GEOLOGICAL SETTING

5.1 Stratigraphy and structure

The regional geology of the Ashburton has been compiled from published 1:250,000 scale geological mapping by the Geological Survey of Western Australia and reports by Thorne et al, 1991, Seymour et al 1988 and Thorne et al, 2001.

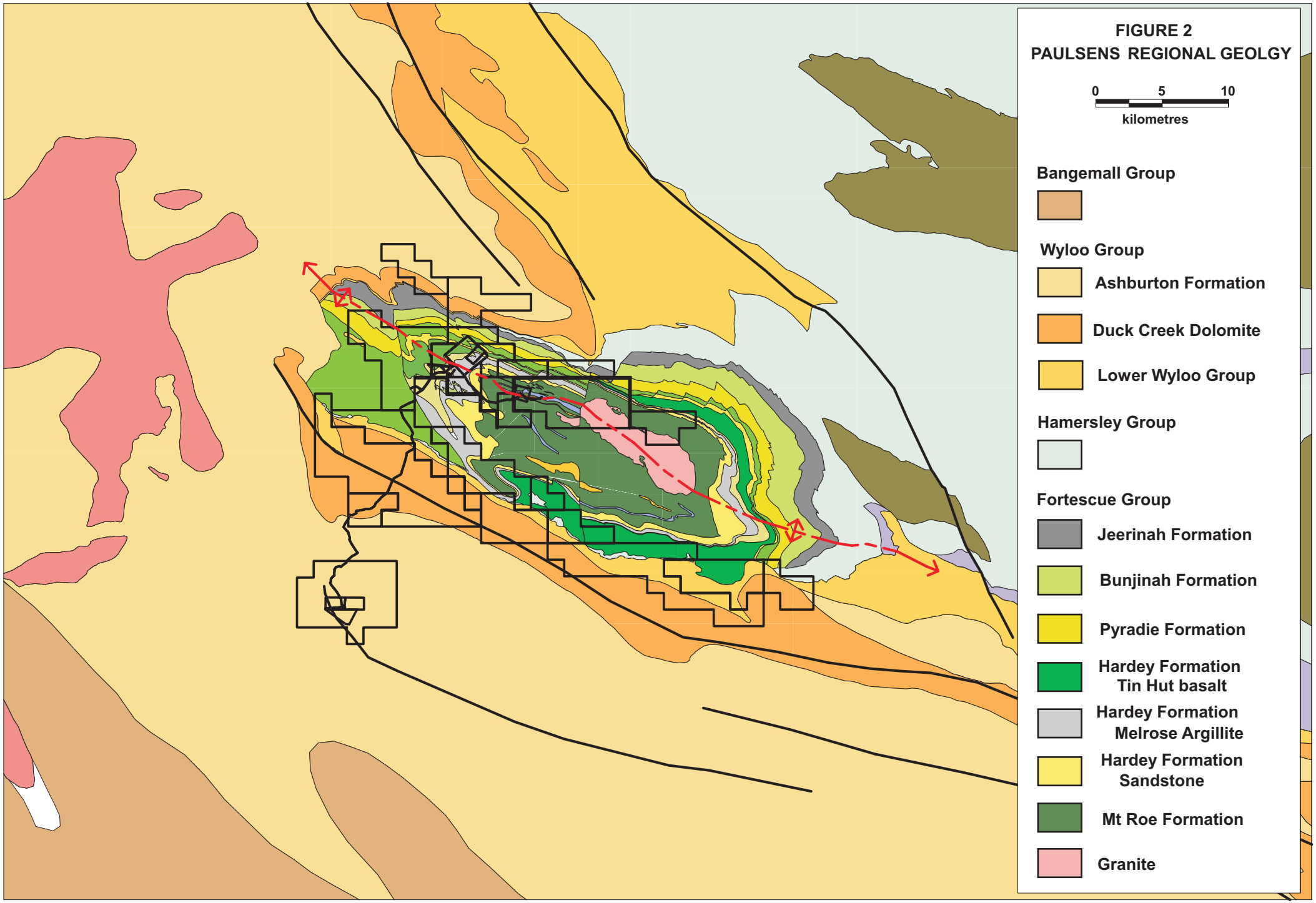
The Paulsens Project tenements are located on the western and southern extents of the Wyloo Dome, a northwest-southeast oriented doubly-plunging anticlinorium. Weathering has exposed Archaean granite and greenstones of the Pilbara Craton at the core of the dome. Archaean lithologies are overlain by rocks of the Late Archaean to Early Proterozoic Mount Bruce Supergroup (Hamersley Basin) and Early Proterozoic Wyloo Group (Ashburton Basin). The dome was formed during the Early Proterozoic (1.6 Ga to 2.4 Ga) Capricorn Orogen, which produced the Ophthalmia and Ashburton fold belts.

The Wyloo Dome is a northwest trending, regional doubly plunging anticlinorium fold with a northwest-trending, steep axial plane and axial planar cleavage which strikes northwest and dips steeply to the southwest. The Wyloo Dome covers an area of 60km by 25km, lying within a northwest-southeast trending dextral duplex structure. The dome's (somewhat diffuse) axis, which parallels the bounding faults of the interpreted shear duplex, passes through the western portion of the Paulsens tenement block and can be traced, as a highly sheared and quartz veined zone, for many tens of kilometres to the west-northwest and east-southeast. In the centre of the dome, twelve kilometres east of Paulsens, the Archaean-age Metawandy Granite intrudes Fortescue group rocks (predominantly mafic lavas and tuffs). Minor amounts of interbedded sediments were identified within this older sequence. They occur around the Tombstone Prospect and are mapped as siltstones (ripple marks were identified) and interbedded coarser grained clastics. The sediments, interpreted as reworked tuffs, grade upwards and along strike into tuffs. The Melrose Argillite within the Fortescue Group is the immediate host of gold mineralisation at Paulsens, within the anticlinal axial zone. The Wyloo Dome was formed during the Early Proterozoic (1.6Ga to 2.4Ga) Capricorn Orogen, which produced the Ophthalmia and Ashburton fold belts.

Marking the edge of this older core sequence in the northwestern potion of the dome, and containing the Paulsens Gold Deposit, is an upward fining sedimentary unit of the Fortescue Group. The sequence comprises a sandstone unit at its base, overlain by intercalated carbonate units and the upper potion of the sequence contains black chert and felsic tuffs. The major portion of the unit consists of argillites and siltstones. This sequence is overlain by massive basalt flows which contain intercalated sandstones and siltstones in interflow basins. These massive flow units are overlain by upward fining mafic tuffs (north and northwest towards the outside of the dome). In places, the tuffs contain carbonate horizons. This volcanic sequence, the upper Fortescue Group, is unconformably overlain by the Mt McGrath sediments, consisting of interbedded grits, sandstones and siltstones deposited on a basin margin.

The Mt McGrath sediments are overlain by the Duck Creek Dolomite Formation which originated as fringing reefs around the emerging dome. The grits, sandstones and siltstones of the Ashburton Formation were deposited in deeper water beyond the fringing reefs.

At least two suites of early Proterozoic 1.6Ga to 2.6Ga dolerite dykes cut basement rocks of the Wyloo Dome. The Billeroo dykes are the oldest and most numerous and are up to


FIGURE 2
PAULSENS REGIONAL GEOLGY
0
5
10
kilometres
Bangemall Group
Wyloo Group
Ashburton Formation
Duck Creek Dolomite
Lower Wyloo Group
Hamersley Group
Fortescue Group
Jeerinah Formation
Bunjinah Formation
Pyradie Formation
Hardey Formation
Tin Hut basalt
Hardey Formation
Melrose Argillite
Hardey Formation
Sandstone
Mt Roe Formation
Granite

50 metres thick with irregular trends, generally sub-parallel to and affected by the axial plane cleavage of the second deformation. These dykes post-date the Melrose Fault and mineralisation. The Black Hill Dolerite dykes are fresh and strongly magnetic with steep dips and a northeast trend. They are less numerous but can be up to 200 metres thick and cut all the second deformation structures and the Billeroo dykes. There are no dykes of this suite in the immediate vicinity of the Paulsens deposit.

Later folding and uplift affected the dome resulting in upward tilting of all of the volcanic and sedimentary sequences. The previously described dextral shear duplex produced a penetrating northwest cleavage being developed throughout the dome. The cleavage becomes more intense within the central portion of the dome. The prominent northeast trending Black Hill Dolerites occupy regional structures corresponding to the central portion of the dome where lineation plunges change from southeast to northwest.

Subordinate structures such as folds, axial-plane cleavage and reverse faults related to the regional folding are common and affect both basement and cover rocks. Two phases of deformation are recognised, the second of which was the most intensive.

Regional metamorphism to greenschist facies was coincident with regional folding and has caused propylitic alteration of mafic rocks to chlorite-epidote-carbonate assemblages with andalusite porphyroblasts in pelitic rocks.

Young normal faults with linear, northerly to northeasterly trending traces cut the basement and cover rocks.

A summary of the relationship between regional structure and stratigraphy in the Paulsens' area is outlined in the following table:

Table 1 Summary of Regional Geological Events

Event	Comments
E-W Extension	N to NE striking Belvedere and Billeroo faults offset Fortescue units but not overlying Hamersley Group, indicating a pre-Hamersley origin. Thickness of the various Fortescue units is greatly different across the Billeroo Fault. Greatest formational thickness is developed on the down-thrown (western) side suggesting the Billeroo Fault may represent E-W rifting associated with deposition of the Fortescue Group.
D_1	Angular unconformities between the Fortescue, Hamersley, and lower Wyloo groups which all appear to exhibit the S_2 cleavage indicate tilting or regional folding prior to F_2. Quartz veins within bedding-parallel normal faults of the Melrose Shear exhibit the S_2 cleavage and also indicate significant folding or tilting of bedding prior to F_2. The existence of several angular unconformities prior to the Duck Creek Dolomite (the youngest unit to definitely carry the S_2 cleavage) suggests D_1 is a composite of several events or progressive. An ambiguous?pre-S_2 cleavage is recognised at a few localities in the Fortescue Group. If an S1 cleavage was developed it may have been overprinted or be coplanar with subsequent S_2-S_4 cleavages.
NE-SW Extension	Normal offset of the Paulsens Dyke on the pre-D_2 Melrose Shear indicates NW-SW extension between D_1 and D_2 folding (possibly relaxation after D_1).
D_2	Upright to slightly inclined (NE facing) open to tight WNW to NW trending folding. Folds plunge 15-35° to the NW in the western Wyloo Dome, 15-35° to the ESE in the eastern

	part of the Dome. S_2 axial planar cleavage prominent (strongest cleavage recognised) striking NW to WNW, typically expressed as slatey cleavage in basalts and argillites, semi-schistose cleavage in Metawandy Granite, fracture cleavage in dolerites, gabbros, arenites, conglomerates, BIFs, felsic volcanics, and quartz veins, and pressure solution cleavage in dolomite. Recognised in all units up to the Duck Creek Dolomite.
D_3	NNW trending folding inferred from pervasive fracture cleavage of same orientation. Somewhat ambiguous cleavage relationships at a few localities suggest the NNW fracture cleavage post-dates S_2 but further work is needed. The NNW fracture cleavage is recognised in all Fortescue units, Paulsens and Billeroo suite intrusives, and tentatively also the Duck Creek Dolomite.
D_4	Identified primarily by mesoscale open folding of S_2 and S_3 cleavages, fold axes plunging gently (10-30°) to the W. Weak steeply S dipping axial planar fracture cleavage locally developed. F4 folding is strongest in the Belvedere – Tombstone – Billeroo corridor, rotating S_2 to dip gently SSW through to gently NNE, and locally overturning bedding. General SW to SSW dip of S_2 cleavage throughout the Wyloo area at least partly reflects folding of S_2 by F_4. Folding of S_2 indicates F_4 post-dates all units up to and including the Duck Creek Dolomite. The prominent slatey cleavage in Ashburton Formation is tentatively correlated with S4 on the basis of orientation and bedding cleavage relations. A pre-S_4 cleavage is not recognised in the Ashburton Formation and the angular unconformity at the base of the unit may "represent" the F_2 folding episode.
D_5	Characterised by mesoscale steeply plunging z-verging (dextral) folding of slatey S_4? cleavage best developed in Ashburton Formation rocks.
	Sinistral faulting

5.2 Mineralisation

Early accounts of mineral exploitation in the Paulsens area were recorded by Maitland, 1909, and Talbot, 1926. Gold, copper, lead and silver have been sporadically worked since the 1890's. Mining was essentially small scale with extraction of metals from narrow, discontinuous quartz veins or alluvial deposits derived from these sources.

Apart from the Paulsens Gold Mine, the only other historic mines located within Intrepid's tenement holding occur at Belvedere (6km southeast of Paulsens), Tombstone (also Blacks or Belfry, 8km southeast of Paulsens) and Monster Lode, 13km south of Paulsens). Belvedere and Tombstone are structurally controlled, quartz vein-hosted deposits within sediments and volcanics of the Mt Roe Basalt (Fortescue Group). Monster Lode mineralisation is associated with minor quartz veining within narrow Mount McGrath Formation ferruginous sediments. The historic Kooline lead field lies outside Intrepid's lease holding 55km south of Paulsens, and the lead-silver workings of Silent Sisters and Aerial are located 40km and 50km southeast of Paulsens. The Kooline mineralisation occurs as galena within narrow quartz veins within Ashburton Formation. Silent Sisters and Aerial are associated predominantly with galena bearing quartz-carbonate veins within Duck Creek Dolomite.

Regionally, historic mines and deposits are associated with D_2 wrench faults and shears in the Wyloo Group (chiefly in Duck Creek Dolomite and Ashburton Formation), Capricorn Formation, and Mount Bruce Supergroup. Significant uranium mineralization is associated

with post-Bresnahan Group normal faulting in the eastern Ashburton Basin (Thorne et al, 1990).

The Mount Clement gold-silver prospect is interpreted as a submarine hot-spring deposit in the Ashburton Formation. The Yarraloola copper deposit probably formed in a distal volcanogenic setting.

Modern mining within the Ashburton Basin did not commence until 1998 at Mt Olympus, in the south of the basin. Intrepid's Paulsens Gold Mine, which commenced in 2004, is now the only operating mine in the region. Mining of iron ore from Hamersley Basin deposits is currently operating at Paraburdoo and Tom Price.

Dextral wrench faults, and associated synthetic and antithetic faults, which cut Mount McGrath Formation, Duck Creek Dolomite and Ashburton Formation, represent exploration targets for gold mineralization. Orebody size may be limited by the generally shallow depth of supergene enrichment. Pre-Wyloo Group Ophthalmian folds in the western Hamersley Basin are possible targets for large-scale hematite (iron ore) mineralization (Thorne et al, 1990).

6.0 LOCAL GEOLOGY

6.1 Paulsens Deposit

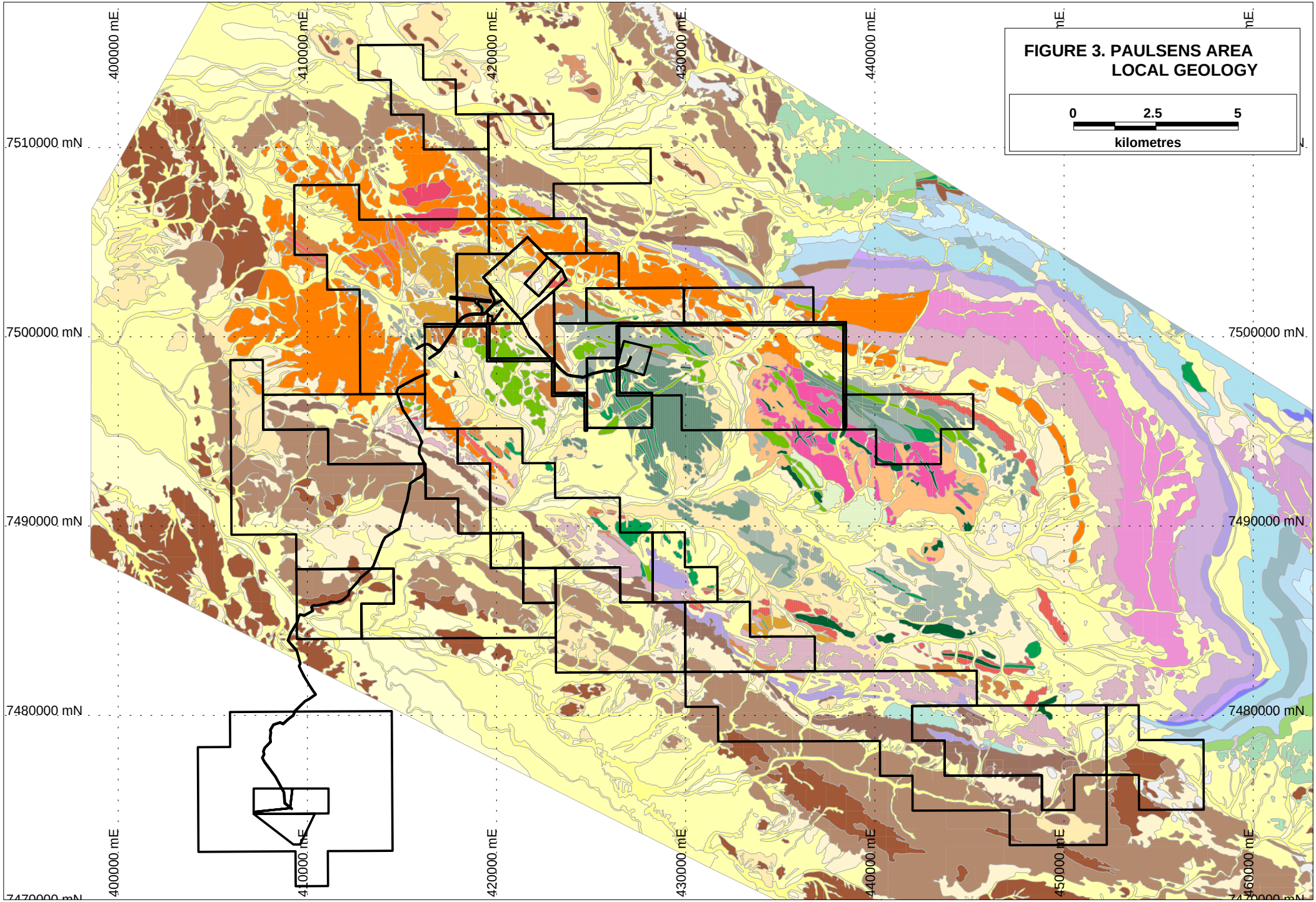
The Paulsens Gold Deposit is a structurally-controlled quartz-carbonate-pyrite veinset hosted by the Melrose shear zone. Mineralisation occurs as two primary zones (Upper and Lower Lodes) intruded along the footwall and hangingwall contacts of an early, primarily barren, massive quartz vein. The ore body lies on the eastern limb of a gently northwest plunging fold, produced by deformation associated with Wyloo Dome formation.

The Paulsens deposit is hosted by sediments and basalt of the Hardey Formation, a member of the Archaean Fortescue group. The Hardey Formation in the immediate mine area has been informally subdivided into three members, in stratigraphic order, the Melrose Argillite (basal unit), the Madang Breccia, and the Tin Hut Basalt. Two ages of mafic dyke have intruded the sequence; the older Paulsens Gabbro, and numerous dolerite dykes belonging to the Billeroo Suite.

6.1.1 Stratigraphy

The **Melrose Argillite** is around 500m thick and comprises graphitic siltstone with numerous thin (centimetre-scale) fine-grained sandy interbeds. The graphitic units contain fine syngenetic disseminated pyrite, locally up to 5% of the rock. Pyrite-rich and pyrite-poor bands follow the bedding. The argillite is now regionally metamorphosed with the crystallization of quartz, chlorite and fine (1-3mm) inclusion-filled andalusite. Spotted andalusite schist is one of the most common metamorphic lithologies at the prospect. Towards the top of the argillite, a number of sandstone beds, each up to 5m thick, occur through a 50m interval of the Melrose Member. The sandy beds are poorly sorted grits, often with an epiclastic texture, and have a distinctive "fish-eye" appearance. The marker unit is approximately parallel to, and occurs just a short distance above, the Upper Gold Lode (Marjoribanks, 2006).

The **Madang Breccia** is around 225m thick. It is a volcanic fragmental rock of felsic composition.


FIGURE 3. PAULSENS AREA
LOCAL GEOLOGY
0
2.5
5
kilometres
400000 mE
410000 mE
420000 mE
430000 mE
440000 mE
450000 mE
460000 mE
7510000 mN
7500000 mN
7490000 mN
7480000 mN
7470000 mN

The **Tin Hut Basalt** is a massive tholeiite in which little in the way of original depositional surfaces can be seen. Amygdales are locally common.

The **Paulsen's Gabbro** has intruded as a dyke at a high angle across bedding. The dyke averages 80m thick, strikes NW and dips 70°- 80° SW. It can be traced along strike at surface for around 1100 metres. No other examples of gabbro or dolerite of the same relative age as the Paulsen's Gabbro are known from the district. The gabbro dyke may occupy a feeder zone for basalt flows higher up the stratigraphic column. There is strong propylitic alteration throughout the unit, but the characteristic gabbro igneous texture is generally preserved. Adjacent to the Melrose Fault zone, the gabbro shows sericitic alteration, indicating a localized potassic alteration (Marjoribanks, 2006)

The **Billeroo Dolerite Dykes** range up to 10m thick. The dykes cut across sediment, gabbro and the quartz bodies that mark the Melrose Fault Zone; they show distinct chilled margins against all these rock units.

6.1.2 Structure

Five phases of deformation are recognised in the Paulsens area.

Initial deformation involved extensional deformation and the emplacement of the Paulsens Gabbro.

The next phase was the development of the Melrose Fault. The Melrose Fault has been described by Marjoribanks (2001) as a listric fault parallel or sub-parallel to bedding within the Melrose Argillite. The fault appears as a ductile structure in sediment and is difficult to distinguish from the argillite host. The structure is recogniseable where it offsets the Paulsens Gabbro as a series of fault slices. The intersection of the Melrose Fault with the Paulsens Gabbro is marked by the development of a large quartz vein, a pronounced feature at surface due to weathering of the surrounding geology. The Paulsens mineralisation is directly associated with the gabbro-quartz vein bodies.

The Billeroo Dolerite dykes were emplaced during a later period of extensional deformation. The dolerite dykes crosscut the gold lodes and therefore are associated with a later phase of deformation than that associated with mineralisation.

Open folding was produced during deformation associated with the formation of the Wyloo Dome (defined as D_2). The effects of this period of deformation are expressed in the Paulsens area by the formation of the antiform-synform fold pair that affects the Melrose Fault and gold lodes and the development of a strong axial planar cleavage. The folds plunge 35° to 330° and are expressed by folding of the massive, barren quartz lens.

Late, post-D_2 deformation is recognised as brittle faults of limited extent that displace mineralisation. At least two of these faults have been intersected in the underground workings with five to ten metres displacement (the Tenfortyfive Fault and the Edge Fault), however many of the faults are not significant and cannot be traced between adjacent levels (Marjoribanks, 2006).

The structural and mineralisation sequence at Paulsens is summarised in the following table.

Table 2 Interpretation of the Geological Event Sequence at Paulsens.

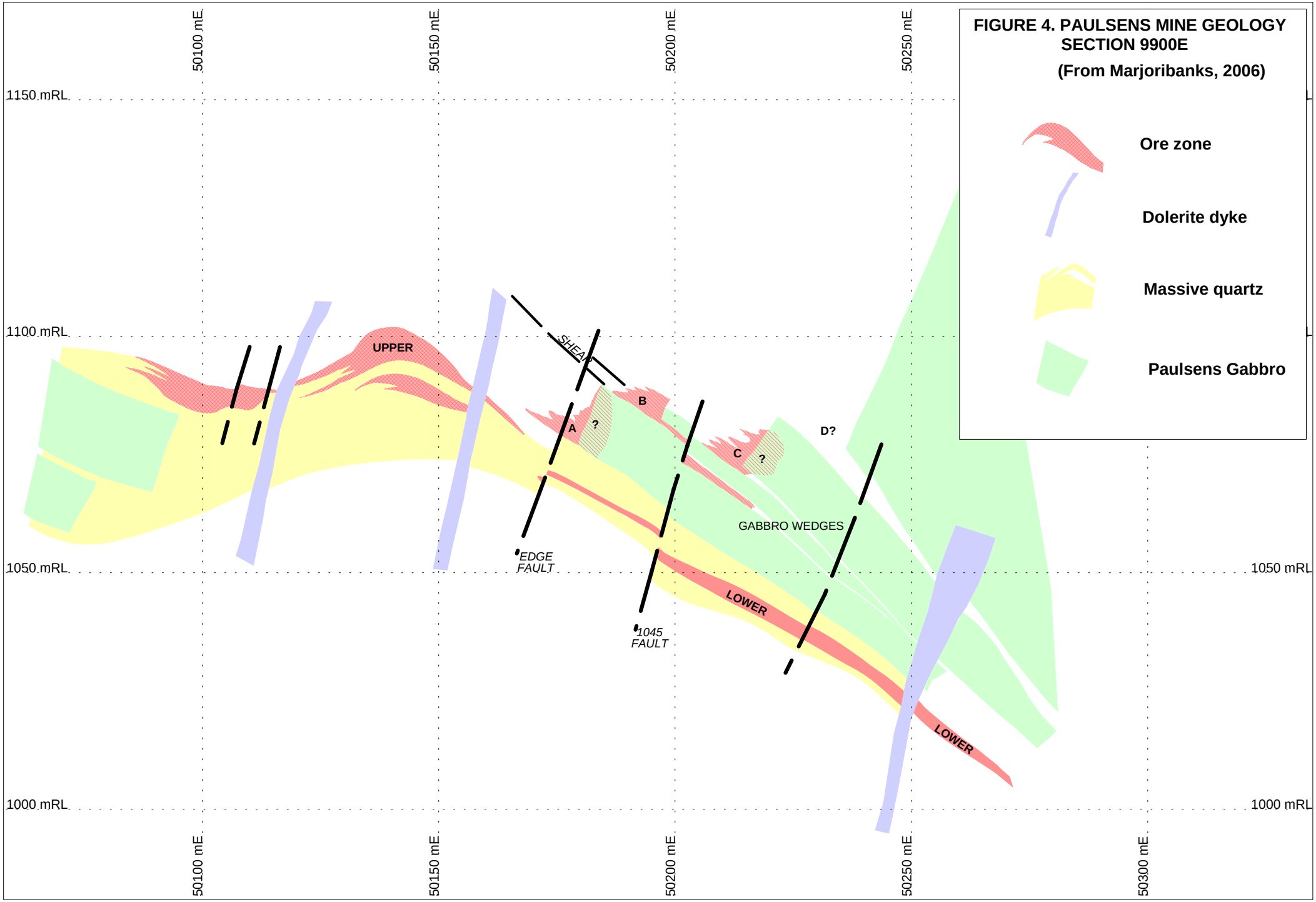
Event	Correlation
D_1 tilting or folding of host Fortescue Group rocks. Not known whether Paulsens gabbro dyke was intruded pre- or post-D_1 tilting/folding	D_1
Melrose Fault Zone developed roughly parallel to base of Fish-eye Sandstone; normal slip offsetting Paulsens Dyke ca. 350m. Quartz-carbonate veins emplaced in fault zone, thickest where Melrose Fault Zone intersects Paulsens Dyke forming quartz-carbonate vein array up to 350m across, 70m thick, and greater than 1000m down plunge.	
Billeroo Suite dolerite dykes intruded, crosscutting quartz-carbonate veins.	
D_2 folding of quartz-carbonate vein array leading to broadly arched geometry of array in section. Possibly some thickening of quartz-carbonate veins in fold hinges. F_2 fold axes oblique to trend of vein array, dip of array consequently steepening at depth.	D_2
Gold-pyrite veins deposited mainly along S_2 and a-c joints in and at margins of pre-existing host quartz-carbonate veins. Local brecciation of quartz-carbonate host and sedimentary wallrock. High-grade Au shoots developed parallel to major fracture orientations S_2 and lesser F_2 a-c. Limited dissemination of mineralised pyrite into sedimentary (Hardey Formation), gabbro (Paulsens Dyke), dolerite (Billeroo Suite), and quartz-carbonate vein wallrock, gold grades only anomalous in these lithologies.	
Gold-pyrite veins strained and brecciated, and cemented with quartz-carbonate-pyrrhotite. Localised brecciation and silicification of wallrock. No significant gold mineralisation.	D_3
Small SSW dipping reverse faulting, locally offsets quartz-carbonate veins up to ca 1m.	D_4

6.1.3 Gold Mineralisation

The evidence suggests that gold, along with sulphide, was deposited during a late stage of movement on the Melrose Fault. Early deposition of quartz along the fracture has the effect of welding together the opposed rock masses. Late fault movement then produces more brittle forms of fracture, brecciating the earlier quartz, and allowing access to a late, more highly fractionated, gold-rich fluid. In the case of the Melrose Fault, the late fracture tended to take place along the contact of the earlier, barren quartz veins (Marjoribanks, 2001).

Gold and sulphide mineralisation is best developed on the upper and lower margins of the quartz-carbonate vein array and identified as the Upper and Lower zones. The abundance of gold associated within the sulphide varies between the lodes. Grade plans and semi-variography work show high-grade gold shoots oriented 310°, roughly coincident with the gently northwest plunging (25° to 310°) intersection lineation of veins, bedding, and cleavage, and oblique to the orientation of the entire quartz-carbonate vein array (35° to 340°).

The Upper Lode is characterised by massive, structureless quartz-ankerite veining containing 5% to 20% pyrite. Sulfide is irregularly distributed as coarse-grained euhedral aggregates ranging to widths of over one metre. The upper surface of the zone is irregular with quartz-sulfide splays rising into the hanging wall sediment. The basal contact of the


FIGURE 4. PAULSENS MINE GEOLOGY
SECTION 9900E
(From Marjoribanks, 2006)
Ore zone
Dolerite dyke
Massive quartz
Paulsens Gabbro
50100 mE
50150 mE
50200 mE
50250 mE
50300 mE
1150 mRL
1100 mRL
1050 mRL
1000 mRL
UPPER
SHEAR
A
?
B
C
?
D?
GABBRO WEDGES
EDGE
FAULT
1045
FAULT
LOWER
LOWER

lode exhibits a gradual transition to the barren, sulfide-poor massive quartz footwall (Marjoribanks, 2006).

The Lower Lode has a simple tabular body of laminated quartz-pyrite to three metres width. Pyrite occurs as coarsely crystalline aggregates up to a few centimetres across that tend to follow laminations within the host quartz. The lode is located near the base of the massive quartz body. Hangingwall to the Lower Lode is the Paulsens Gabbro, and footwall is graphitic argillite/Melrose Fault (Marjoribanks, 2006).

Marjoribanks also describes pods of mineralisation, the Wedge Lodes, positioned on the steeply southwest-dipping edges of the fault-offset gabbro slices located on the hangingwall of the Melrose Fault. The exact shape and position of the wedges are poorly defined due to limited drilling information and a lack of underground development in this area of the mine. At least four Wedge Lodes of economic grade and volume may be present.

Apart from the pyrite mineralisation described above, chalcopyrite is occasionally visible as disseminated grains and veinlets towards the centre of mineralised quartz-carbonate veins. Trace (<1%) amounts of chalcopyrite, arsenopyrite, and pyrrhotite occur within the massive pyrite veins, as microscopic inclusions and grains (typically <0.1 millimetre) inside and at the boundaries of the coarse pyrite grains. Massive, fine-grained pyrrhotite veins up to one metre thick were encountered in a few drill holes and a thin veinlet (<2 millimetre) of galena was observed in core from one drill hole. Petrographical work identified trace amounts of gersdorfite (Ni-As sulphide) in sericitised sedimentary wallrock. Euhedral pyrite porphyroblasts up to 5 millimetre dimension are disseminated throughout the sedimentary rocks and are probably of diagenetic origin.

Host rocks at Paulsens have been subjected to low-grade regional metamorphism, characterised by the mineral assemblage actinolite-chlorite-epidote in mafic rocks and muscovite-quartz-chlorite in argillaceous and arenitic rocks. Intense localised hydrothermal alteration is characterised by the mineral assemblage carbonate (dominantly ankerite)-sericite-titanite-chlorite-quartz-pyrite.

The extent of the Paulsens mineralisation has not been fully defined. Drilling has not closed off mineralisation down-plunge to the northwest. The potential for ore to continue to depth depends on continuation of structural controls. Marjoribanks (2006) considers that the most significant structural controls on ore are the various intersections that the Melrose Fault makes with the Paulsens gabbro. The Melrose Fault is a large structure with significant throw. It can be expected to continue both along strike and to depth for many kilometers beyond the Paulsens area. The gabbro, however, may have more limited extent. However, it should be noted that economic mineralisation has been defined associated with the Melrose Fault at Apollo, to the north of the Paulsens gabbro. The Apollo Lode is associated with narrow, folded quartz veining. Although of limited tonnage, the Apollo Lode indicates potential for economic mineralisation associated with dilational sites along the extent of the Melrose Fault.

6.2 Belvedere

The historic Belvedere workings are located 6 kilometres southeast of Paulsens Gold Mine. Descriptions of the workings have been given by Forman (1938), Finucane (1939), Blockley (1971), Marston (1978) and Blight (1985). Gold production to the end of 1986 amounted to 14.4 kg. In 1949 a further 1.8t of lead and 2.5kg of silver were extracted from the Belvedere Mine, probably from existing mullock dumps. Drilling by Taipan within the main area of historic workings has defined a non-JORC resource of 31,000 tonnes @ 4.29 g/t Au (4334oz). The area was mapped and described by Crossing (2000).

The Belvedere workings are situated within Proterozoic Fortescue Group mafic volcanics and sediments, which are exposed along the NW-SE trending axis of the Wyloo Dome. The volcano-sedimentary sequence forms an open fold whose axis plunges at a shallow angle to the northwest. Thick basaltic units with intercalated sediments dominate the Belvedere area. These are overlain by sandstones, which in turn are overlain by argillite to the north. Felsic volcaniclastics are sometimes present within the sedimentary package. The basaltic sequence often displays a vesicular texture and is typically moderately to highly strained, grading into basalt schist. Regionally the basaltic volcanosedimentary sequence is correlated with the Mt Roe Formation, and the overlying clastic sediments with the Hardey Formation. There are at least three generations of dolerite intrusions present. The earliest of these is a series of northwest trending sills and dykes, which cut the basaltic sequence at a low angle. These are intruded by a later suite of dolerite dykes, which are characteristically irregularly shaped, and north-south trending. The youngest dolerites are persistent linear, northeast trending Proterozoic dykes. The first two generations of dolerite intrusions are mostly limited to the basaltic sequence with limited penetration into the base of the overlying sandstones, and they often display moderate foliation. The second generation of dolerite dykes locally exhibit weak foliation, whilst the third generation Proterozoic dykes are unfoliated.

Gold mineralization at Belvedere is spatially related to the northeast trending Belvedere Fault, a strike slip fault with significant sinistral displacement. The main historical workings at Belvedere occur where the Belvedere Fault passes along the eastern margin of a north-south trending dolerite dyke, at the location where the latter bends into a northeast trend. This bend in the dyke may be a result of the dyke intruding along a portion of the fault early in its development. Subsequent sinistral shear movement generated across the dolerite has produced two north trending Riedel shears that are pervasively carbonate altered and contain a network of quartz veins. Maximum quartz vein development occurs where the shears bend or split, producing dilational zones plunging west at around 30° to 55°.

The main workings at Belvedere are hosted by quartz ± sulphide (pyrite, arsenopyrite, galena) veins which are up to six metres wide and extend along strike for 60 metres. The quartz vein systems are developed within ferruginous and carbonate altered basalt. Both veins are gently folded and dip moderately to the west. Extensive areas of dolerite occur immediately adjacent to these quartz veins and may stope out parts of the mineralised vein system. Rock chip sampling and drill data suggest the best grades occur over a strike length of 75 metres. The veins appear to pinch out to the north against a northwest-trending conglomerate unit.

Other workings occur within the fault itself and within quartz veins occupying northeast trending jointing in the dolerite. About 800 metres further west an area of small workings are spatially associated with a quartz-veined and pyrite-chalcopyrite-galena mineralised sub-parallel sinistral structure. The north-west trending dextral faults mapped west of Belvedere have haloes of silica-sericite-pyrite alteration and quartz-pyrite veining associated with them but no historic workings are present. Likewise, no historic workings are associated with the carbonate altered and quartz-veined fractures that have developed within portions of the early gabbro/dolerite. Well-developed sets of en echelon quartz veins within arenite southwest of the main workings were not found to contain any gold. Geology of the prospect suggests the majority of local structures mirror the regional structures of the Wyloo Dome, with local parasitic folding producing steeply dipping cleavage, approximating the regional cleavage associated with deformation of the Wyloo Dome.

6.3 Tombstone

The Tombstone Prospect comprises a localised area of historic copper, with minor gold and lead, workings located 8 kilometres southeast of Paulsens Mine and 1.5 kilometres east of Belvedere. The geological setting is summarised in the previous Belvedere section.

At Tombstone copper-gold mineralisation is hosted by Mt Roe Formation altered sediments, felsic volcanics, and minor basalt. Extensive areas of visible copper oxide mineralisation are associated with flat southeast-plunging zones of late stage brecciation and stock working of the silicified sheets. Stock work development is most intense where the more brittle sediments are incorporated into the fault system. Mapping at Tombstone recognised early faulting characterized by sub-parallel to anastomosing shallow angle faults with silicified hanging-wall alteration. The observed movement is mostly normal or less commonly oblique slip, with rare late reverse movements observed locally. The faults have been slightly folded and consequently meander in outcrop, trending from east-west to southeast with southerly to southwest dips of 20°- 50°. Within the zones of silicification are more restricted zones of malachite staining which appear to be spatially associated with more intense quartz ± pyrite stockwork veining and vein breccias. These zones appear to plunge down-dip in a south-easterly direction and are best developed where the fault system begins to bend from an easterly to a south-easterly trend. The controls on the occurrence of this copper mineralisation is not well understood, however the apparent plunge of the mineralisation is roughly parallel to the direction of the predominant normal fault displacement as indicated by fault fibres, and to the trend of some late cross-cutting faults and fractures (Crossing, 2000).

The zone of mineralisation is marked by a capping of several metres of malachite-stained massive chert and quartz veined silica. The silica cap was interpreted as an exhalative horizon by previous explorers, but may be due to silica alteration and subsequent surface silicification above quartz-pyrite-carbonate shears or thrusts in the underlying sediments. One shear is overlain by a cross-cutting stockwork of quartz veins and underlain by extensive quartz vein expansion breccias. It is thought surface gold anomalies may have been sourced within north-south trending dilatant fractures which transect the flat-dipping quartz filled shear zone. However other competent rocks such as sandstone and conglomerate are present at Tombstone and these seem to host the most intense quartz stockworking.

Numerous dolerite dykes cut the host sequence, trending north-northwest to northeast; these lie on the eastern margin of the regional northeast-trending dyke swarm.

The Tombstone fault system was traced as far west as Belvedere, where it is truncated by the Belvedere Fault. The system cannot be reliably traced west of this structure. To the southeast of Tombstone the fault system passes beneath a broad area of alluvium, east of which there are large areas of quartz float which suggest the system continues in this direction for at least another kilometre or so. West of Tombstone silicification declines in intensity. Silicification recovers in intensity near the Belvedere Fault where malachite staining was noted in the vicinity of some small historical workings east of Belvedere.

The mineralisation style at Tombstone is similar to Paulsens, although the silicification and quartz veining is less intense and no early gabbro is present in the fault system to produce potential dilational sites.

The felsic host rocks, silicification and anomalous base metal sulfides have led to a proposed volcanogenic massive sulfide origin for the mineralisation by previous explorers. Intense, pervasive alteration is traceable on surface at Tombstone for over 400 metres while the silica bodies outcrop sporadically for over more than four kilometres. If zones

within this system prove to be auriferous the system has potential to host significant mineralisation.

6.4 Mount Clement

The Mount Clement Prospect is located 30 kilometres southwest of Paulsens Gold Mine. Previous work has outlined a gold-silver resource of 20,989oz to a maximum 90 metres depth. A small Pb-Sb resource called the Eastern Hills prospect is situated approximately one kilometre east-southeast from the Mount Clement deposit. Both prospects are located in steep hilly areas on the southwestern margin of the Ashburton flood plain. Descriptions of geology and mineralisation have been summarised from a DOIR Annual Report by Owen et al (2002).

The Mount Clement Prospect lies within the Ashburton Formation, the youngest rocks in the Proterozoic Wyloo Group consisting predominantly of mudstone and siltstone and minor interbedded sandstone. Previous regional geological mapping by the Geological Survey of Western Australia (GSWA) places the hydrothermal sequence hosting the Mount Clement mineralisation on the northern limb of a westerly plunging D_2 syncline in an area of structural complexity. The structural complexity could be the result of a later north-northwest trending D_3 folding event or the reflection of a major structural feature that forms the western edge of the Wyloo Dome.

A regional dextral northwest-southeast striking shear duplex is recognised as controlling the structure of the area. The northern bounding structure for this duplex is recognised as the upper reaches of Duck Creek. Major northwest-trending structural features parallel to the Duck Creek structure are coincident with the Ashburton River and further south the Wannery and Kookhabinna Creeks. These major strike slip structures are present at regional and formation scale contacts. Interpreted $ó_1$ dilatational structures strike north to northwest. This change of direction is in response to varying degrees of rotation resulting from strike slip movement on the northwest trending structures. Interpreted $ó_3$ structures are arcuate, trending from east-west through to southwest. The Mount Clement Deposit lies between the Ashburton and Wannery/Kookhabinna northwest structures. It is interpreted to lie at the intersection of an interpreted north to northwest trending $ó_1$ structure which forms the western edge of the Wyloo Dome and an arcuate $ó_3$ structure. The arcuate $ó_3$ structure correlates with the southern limb of a westerly plunging synclinal axis within the Ashburton Formation.

At prospect scale the Mount Clement mineralisation lies within a sequence of rocks not typical of the Ashburton Formation. They consist of an interfolded sequence of massive beige to light grey dolomite and dark grey sediments. The dark grey sediments consist predominantly of siltstones that are locally calcareous. Minor interbedded banded iron formation is also present. A hematitic, sericitic quartz-breccia zone (ferruginous in part) within the sediments is interpreted to represent a strike slip fault zone. These sediments are bounded to the north by west-northwest-trending quartz breccia zones. The quartz breccias are interpreted as shear zones which have undergone numerous episodes of quartz veining and deformation. Flanking the quartz breccia unit to the south is a light grey talc schist interpreted to have resulted from the shearing and alteration of dolomite. The quartz breccias form a prominent ridge along the northern edge of the prospect.

Capping the interfolded sediments to the south is a south dipping chert unit. These rock units are intruded by a northeast trending dolerite dyke at the western margin of the gold mineralisation. Another parallel dolerite lies to the south of the Eastern Hills mineralisation. The dolomite and dark grey sediment sequence are interpreted to be isoclinally folded along an east-northeasterly trending axis with an apparent westerly

plunge resulting in the dark grey sediment unit predominating in the western portion of the mineralised area and the dolomite in the eastern portion. The overall dip of the bedding is from 40° to 70° to the south.

A later folding event has formed open folds along north-northeast trending axes. The folds plunge at 35° to the south. Taipan interpreted this folding to be most intense in the western part of the mineralised area adjacent to the dolerite dyke. At this location, the chert is mapped as a tight south-plunging “M” fold. The folding reduces in intensity to the east and has not been recognised east of 408750E, which correlates with a change in direction in both the chert units and quartz breccia (a zone of flexure). This folding possibly reflects a late east-west compression.

Taipan interpreted the chert and underlying sedimentary units at Mount Clement to be a horst of older rocks possibly correlating with the Duck Creek dolomites and associated sediments. These rocks have been up faulted along the northern bounding quartz breccia zones. The northwest and south-southeast boundaries of the horst block are interpreted to be formed by a combination of scissors faults, defined by northeast flowing drainages and doming identified from the GSWA mapping. The overall uplift is potentially due to the presence of an underlying intrusive stock, which would also account for the significant alteration and mineralisation.

A simplified four-unit sequence is identified at the Mount Clement Prospect comprising, in the direction of facing, from north to south:

- ***Breccia Zone***, a ferruginous quartz breccia forming the conspicuous scarp running along the northern edge of the Mount Clement Prospect. Angular chert fragments up to boulder size dominate, with lesser vein quartz and quartz veined chert fragments set in a matrix or cement of fine to medium grained quartz and goethite. Siltstone and talc intervals up to a few metres thick are locally included. Drill hole data suggests the breccia zone is strataform in the central and eastern parts of the deposit, although geometry at depth is poorly constrained.
- ***Talc Zone***, comprising thin to thick layers of talc intercalated with chert, hematite-chlorite rock, and/or hematite-quartz rock, locally with quartz-goethite breccia lenses and arsenate rich gossans.
- ***Mixed Zone***, consisting of thin to medium bedded siltstone and sandstone, dolomite, chert and jasperoid, and locally Banded Iron Formation. BIFs on the main ridges comprise laminated to thin bedded quartz-magnetite rock, while those in the central part of the prospect are strongly oxidised to a distinctive hematite-quartz-kaolinite rock. Minor broken zones and conformable lenses of quartz-hematite breccia and arsenate-rich gossans are included.
- ***Chert Zone***, comprising laminated to thin-bedded variably ferruginous chert and jasperoid up to several metres thick forming low ridges at the southern and western limits of the prospect.

Thin to thick bedded arenite, argillite, and granule conglomerates typical of the Ashburton Formation form the footwall and hangingwall, exposed on the northern and southern flanks respectively of the prospect. Bouma sequences are widespread indicating deposition of the clastic rocks by subaqueous sediment gravity flows. Contacts with the wedge of “chemical” sediments appear conformable and in many places gradational over several metres. Gold and silver mineralisation is mainly restricted to the Breccia, Talc, and Mixed Zones.

A northeast striking dolerite dyke, up to 50 metres wide, cuts through the western part of the prospect, and while highly altered it is apparently unmineralised. This dyke is part of a

conspicuous late-stage (post-Bangemall Basin) northeast to north-northeast striking mafic dyke swarm informally termed the Black Hill Suite.

Oxidation in the central part of the prospect locally extends down to approximately 80 metres and some of the ferruginous breccias capping ridges are at least to some degree lateritic.

The occurrence of BIFs, “cherts”, and talc-rock in the Ashburton Formation is unusual. Relict clastic textures in the western part of the prospect indicate some of the “cherts” formed by replacement (i.e. jasperoid), however the laminated quartz-magnetite rocks in the northwestern part of the prospect have an appearance and petrology (Davy *et al* 1991, Townend 1999) compatible with sedimentary BIF deposits. Some of the “cherts” are probably also of sedimentary origin, hence true cherts (cf. jasperoid). The bedded nature of the talc precludes formation from an igneous protolith, and Davy *et al* (1991) identified a dolomite protolith for the talc rock and some of the “cherts”. The quartz-goethite/hematite breccia zone and lenses were thought to represent hydrothermal eruption breccias and Davy *et al* (1991) presented an interesting case for formation of the Mount Clement sequence as chemical sediment wedge around a submarine hotspring.

However, while the identification of primary chemical sediments and hydrothermally altered clastic sediments at Mount Clement appears sound, the degree to which the alteration and brecciation is syn- or epigenetic remains ambiguous. Most workers, including Davy *et al* (1991) map a west-northwest to northwest striking fault defining the northern extent of the prospect, and a number of subsidiary northwest and northeast striking faults. Norseman and Resolute genetically associated the Breccia and Talc zone with the main north-northwest striking fault and suggested the stratabound mineralisation was at least partially remobilised along such structures. Newmont and Davy *et al* (1991) assumed folding and the mapped faults post-dated and simply dissected stratabound mineralisation. Syngenetic, modified syngenetic, and epigenetic high-level hydrothermal models are all plausible without further detailed mapping.

In the hills immediately east-southeast of the Mount Clement Prospect, thin (up to a few metres) lenses of silicified arenite and argillite, “chert”, and massive sulphide-quartz veins are scattered throughout arenite and argillite of the Ashburton Formation. The largest of these massive sulphide veins identified to date forms the Eastern Hills Pb-Sb Prospect. Approximately 6 kilometres west-northwest of Mt Clement Prospect, at the Black Adder Prospect, weak As-Au-Pb-Sb mineralisation is associated with a number of BIF horizons within the Ashburton Formation. The BIFs at Black Adder are approximately along strike from Mt Clement and also spatially associated with (cut by) a large northeast striking dolerite dyke.

The above observations suggest the intersections of northeast striking Black Hill dykes with rheologically distinct units, such as BIF and dolomite, in the Ashburton Formation represents a good exploration target. The late-stage Black Hill dykes may be filling early fractures which acted as conduits for hydrothermal fluids. BIF and dolomite units may have formed at localised exhalation sites (Norseman syngenetic mineralisation model), or represent rheologically and chemically distinct sites for structurally controlled epigenetic mineralisation. In the Kooline area, 40 kilometres to the southeast and east-southeast of Mt Clement, gold mineralised quartz-veins are spatially associated with grit horizons within a dominantly argillaceous Ashburton Formation. Lithological control on Pb-Ag-Cu-Au mineralisation in the same area (Kooline Lead Fields) is not obvious and galena-dominated veins and breccias occur in a range of late faults and fractures (more like the Eastern Hills mineralisation).

Gold has been recorded in most rock types in the Breccia, Talc, and Mixed zones but the best Au grades (along with As, Ag, and Cu) are typically associated with the arsenate-rich

gossans. Gold grades up to 4.3ppm have also been obtained from apparently unaltered siltstones.

The gold mineralisation at Mount Clement is directly associated with sulphide mineralisation, consisting predominantly of arsenopyrite. In mapped trenches and cuttings the mineralisation is present as strongly limonitic horizons, the majority of which lie on the contact between the dark grey sediments and dolomite. However, the most western mineralised shoot, which contains close to 30% of the overall gold mineralisation, is hosted within the talc schist and for some part the quartz breccia horizon. Both episodes of folding have further localised the mineralisation into shoots. The previously mentioned western shoot, which lies adjacent to the folded chert unit in the area of most intense east-west compression, has been traced down plunge for over 100 metres and interpreted 90 metres along strike. From this shoot, south and east of a major flexure, the mineralisation reflects the 35° southerly plunge of the open folding with shallow southerly dips. Three main shoots occur in this area with interpreted strike lengths of up to 150 metres and down dip extents of up to 50 metres. To the east of the flexure zone, the mineralisation is steeper, generally 60° to 70° south, and the main mineralised zone occurs on the northern contact of dark grey sediments. It is readily traceable on surface through large gossanous outcrops and limonitic material in dozer cuttings and drainages. Another mineralised zone occurs 30 to 50 metres north of this zone associated with a haematitic, ferruginous horizon.

Significant levels of Au (>1g/t), Ag (>60g/t), As (>1%), and Cu (>1%) mineralisation have been identified at the Mount Clement Prospect. A large number of other metals occur in anomalous amounts, including Pb, Zn, Sb, Mn, and Bi. Mineralisation appears strataform, with some oxide-zone remobilisation, but further mapping and integration of surface structural data with drill hole information is required.

7.0 EXPLORATION HISTORY

The earliest recorded mining in the Paulsens area was documented by Maitland, 1909, and Talbot, 1926. A number of historic small-scale gold, lead, copper and silver operations have been worked sporadically from the 1890's through to the 1940's. Modern exploration commenced in the 1960's, initially for base metals, and then later for gold. The only modern mining operations in the Ashburton Basin are Sipa's Mt Olympus Gold Project, located 190km southeast of Paulsens and worked from 1998 to 2004, and the Paulsens Gold Mine.

7.1 Paulsens Exploration

The Paulsens Gold Mine is named after the historic Paulsens Mine (also known as the Melrose Mine), active during the period 1935 to 1940. Reported mine production was 2,955t for 28.549kg gold (average recovered grade 9.55g/t). Historic mining exploited a partially oxidised quartz-carbonate-sulphide vein generally less than two metres thick and dipping 30° to the northeast. Argillaceous sedimentary rocks are exposed in both the hanging- and foot-walls. The quartz-carbonate-sulphide vein was worked over a strike length of approximately 50 metres (140 feet), stoping extended to approximately 17 metres (57 feet) below surface, and the deepest shaft was to 32 metres (106 feet). It is now recognised that the reef at the old mine represents a small splay at the western edge of a much larger vein array.

In 1982, Asarco Australia Ltd (Asarco) reported on exploration of the Paulsens Prospect. Asarco completed reconnaissance mapping of the prospects at 1:40,000 scale in conjunction with rock chip sampling. Asarco concluded that the gold mineralisation occurred in narrow sulphide-bearing quartz veins.

In 1987, CRA Exploration (CRAE) purchased the Paulsens Prospect from J. B. Giles (as Prospecting Licence P08/240, subsequently converted to Mining Lease M08/99). CRA conducted exploration over the Paulsens Prospect between 1987 and 1989. Initial exploration consisted of detailed geological mapping and surface sampling. Subsequent to receiving significant surface sampling results, a program consisting of RC and diamond drilling was completed to define mineralised extensions to the historic Paulsens Mine. The RC drilling program consisted of 30 holes for a total of 3,061 metres. Drilling was conducted on a 25 by 25 metre spaced grid with the majority of holes drilled vertical. Two HQ diamond holes were also completed for a total of 159.7 metres. The following polygonal resource was calculated by CRAE from drilling results:

Table 3 CRAE 1990 Polygonal Resource, Paulsens Deposit

	Uncut	**Cut to 30 g/t of gold**
Sulphide	190 000 t at 3.73 g/t	190 000 t at 3.73 g/t
Oxide	40 000 t at 11.43g/t	40 000 t at 6.72 g/t
Total	**230 000 t at 5.07g/t**	**230 000 t at 4.25 g/t**

In 1991, Hallmark Gold NL (Hallmark) arranged an option agreement with CRAE for the Paulsens Resource area and the surrounding tenement. The company are known to have completed a further thirty drill holes (the information from their option period is incomplete). The Hallmark drilling confirmed CRAE's work, extending mineralisation towards the surface and confirming the interpreted north plunging geometry of mineralisation. In 1992, Hallmark Gold increased its involvement in the Paulsens Prospect by entering into an agreement with CRAE to acquire 70% of the Mining Lease covering the prospect. Hallmark conducted further exploration in the form of 25 RC holes for 979 metres and 6 diamond core drill holes for 109 metres on a 25 by 25 metre grid. Continental Resource Management Pty Ltd was commissioned to produce a resource based on both the CRAE and Hallmark's data, their results are as follows:

Table 4 Continental Resource Management 1992 Resource, Paulsens Deposit

Material Type:	
Oxide	39 000 t at 7 g/t
Transition	18 000 t at 4 g/t
Sulphide	50 000 t at 4 g/t
Total	**107 000 t at 5 g/t**

National Mine Management reviewed the available CRAE and Hallmark data. They examined the prospect as a stand-alone mining and milling operation from both open pit and underground mining viewpoints. Their recommendation was that the Paulsens prospect, as it stood, was not a viable stand-alone operation. Hallmark elected to withdraw from its agreement with CRAE.

In 1993, Taipan Resources NL (Taipan) was granted exploration licence E08/665, surrounding the Paulsens mining lease M08/99. Taipan purchased M08/99 from CRAE in June 1995 for a cash settlement and an attached gold royalty.

In 1994, Taipan commissioned World Geoscience to undertake an aeromagnetic and radiometric survey over the Paulsens Prospect including both the mining lease and the exploration licence. Structural interpretation of the radiometric and aeromagnetic data indicated the mineralisation at the Paulsens Prospect was located within the hinge of a north west plunging anticline. The magnetic data outlined a number of dykes and iron rich formations, while the radiometric data highlighted the main fold structures and dominant shear zones, evident through their elevated levels of weathering and alteration. Exploration targets identified from the interpretation included extensions of the main Paulsens shear zone and adjacent fold limbs.

Throughout 1996, Taipan conducted a series of RAB geochemistry programs and surface rock chip and soil sampling programs. Soil sampling results over the Paulsens prospect produced a gold anomaly adjacent to the previously defined resource, however trending to the northwest. In 1997, an RC drilling program was designed to test the soil anomaly. The program consisted of eight angled RC holes drilled to a maximum depth of 123 metres. After intersecting significant sulphides and assessing their relationship to the main deposit, it was decided to extend the program to the west and to the north and to drill vertical holes, due to the shallow dipping nature of the ore body. Two phases of RC drilling were completed for a total of 9,455 metres. Results from the program were very encouraging with drilling encountering broad zones of mineralisation over substantial strike extent. Mineralisation was drilled to a depth of 180 metres and remained open at depth and along strike to the east.

The known mineralisation was extended from the existing CRAE resource for over 70 metres to the east, northeast, and north, and a new geometry to the mineralisation was recognised.

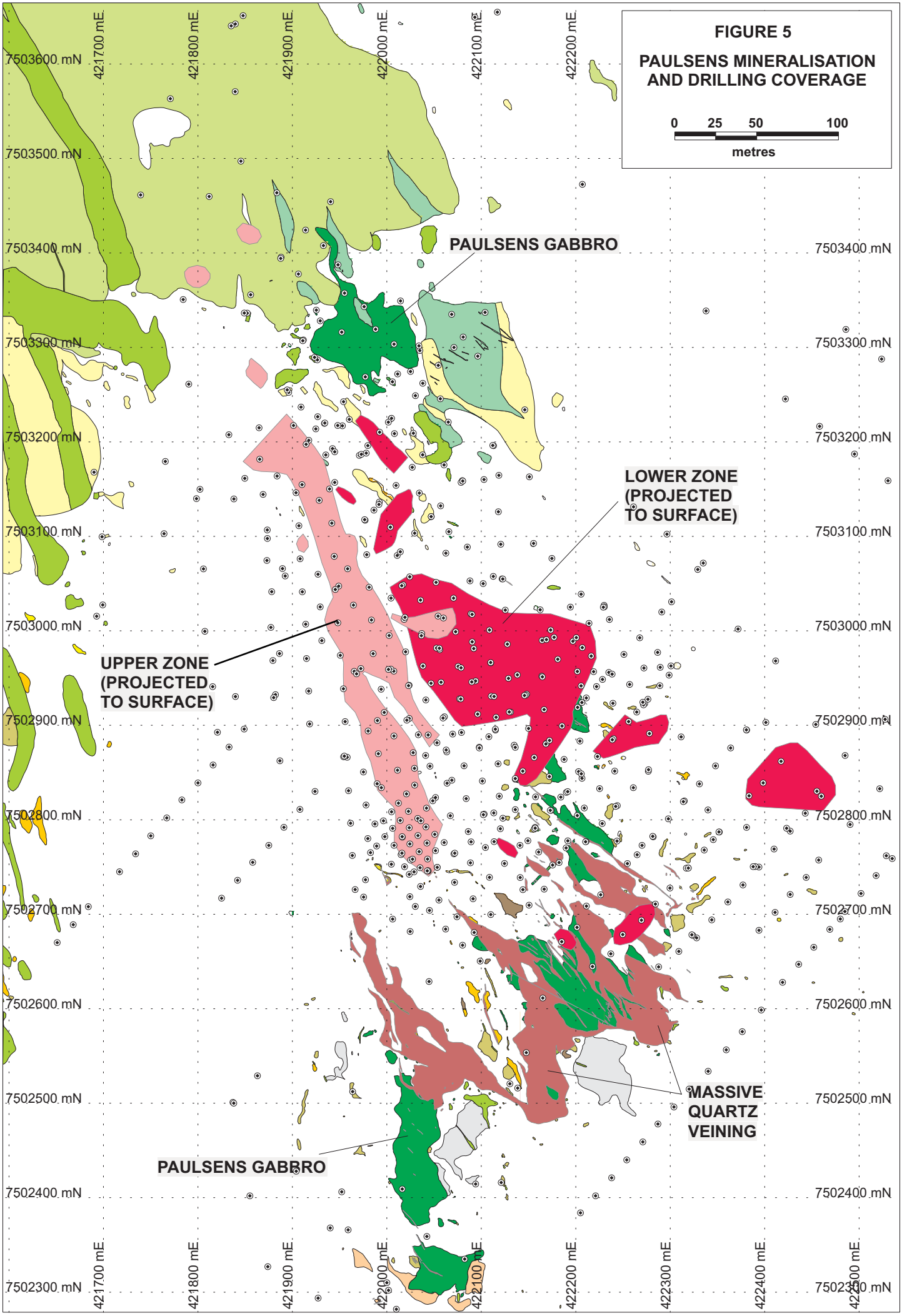
As gold mineralisation was recognised as being associated with massive pyrite veining, a TEM survey was conducted over the resource area. Survey lines were spaced at 100 metre intervals and sampling points at 50 metre intervals. Southern Geoscience Consultants Pty Ltd processed the data but considered the results inconclusive due to negative decays caused by the moist interface between oxidised and fresh geology.

Exploration drilling by Taipan had defined a resource covering an area of roughly 250 by 800 metres, including the old Paulsen Mine and CRAE/Hallmark resource in the southern corner of the resource area, to 180m depth.

During 1999 Taipan commissioned Resource Services Group (RSG) of Perth to calculate a resource statement for Paulsens incorporating CRAE, Hallmark and Taipan drilling data. Continental Resource Management (Chisholm, 1999) reviewed RSG's resource statement. The resource estimate for both the oxide and the sulphide ore was calculated using a lower cut off grade of 1 g/t gold.

Table 5 Taipan 1998 Resource by Material Type, Paulsens Deposit

Ore Type	Volume (Cubic metres)	Ore (Tonnes)	S.G.	Material (Oz gold)
Oxide	52,670	120,176	2.2	17,905
Sulphide	400,456	1,200,168	3.0	231,718


FIGURE 5
PAULSENS MINERALISATION AND DRILLING COVERAGE
0 25 50 100
metres
PAULSENS GABBRO
LOWER ZONE (PROJECTED TO SURFACE)
UPPER ZONE (PROJECTED TO SURFACE)
MASSIVE QUARTZ VEINING
PAULSENS GABBRO
7503600 mN
7503500 mN
7503400 mN
7503300 mN
7503200 mN
7503100 mN
7503000 mN
7502900 mN
7502800 mN
7502700 mN
7502600 mN
7502500 mN
7502400 mN
7502300 mN
421700 mE
421800 mE
421900 mE
422000 mE
422100 mE
422200 mE
422300 mE
422400 mE
422500 mE

The resource category is described in the following table:

Table 6 Taipan 1998 Resource by Category, Paulsens Deposit

Ore Category	Volume (Cubic metres)	Ore (Tonnes)	Material (Oz gold)
Measured	107,877	309,631	56,658
Indicated	272,552	793,321	150,797
Inferred	72,697	218,092	42,169

The total Resource equates to 1,321,000 tonnes @ 5.9 g/t gold, for 249,200 ounces.

Following the successful acquisition of Taipan by St Barbara Mines Ltd (SBM) in 2001, SBM initiated an assessment of all Taipan's Ashburton and Wyloo Dome Tenements. At Paulsens, the Paulsens Optimisation Program (POP) commenced in June 2001 to complete feasibility studies of the Paulsens Deposit. Further drilling was undertaken to determine the economics of the Paulsens deposit as a stand-alone project. Optimisation studies commenced during 2002 to determine the viability of an open cut mining operation.

Golder Associates (Shaw, 2001) carried out an update of the Paulsens Deposit resource estimate for the Paulsens Optimisation Project. The following table summarises the mineral resource estimated at the 1.0 g/t Au cut-off grade:

Table 7 Golder 2002 Resource by Category, Paulsens Deposit

	Measured		Indicated		Inferred		Total	
Zone	**Tonnes**	**Au g/t**	**Tonnes**	**Au g/t**	**Tonnes**	**Au g/t**	**Tonnes**	**Au g/t**
Upper	700 926	5.51	1,086,000	3.97	302,202	3.85	2,089,127	4.47
Central	210 481	2.12	275,692	1.80	2,797	1.34	488,970	1.94
Lower	191 053	7.20	971,306	5.58	226,335	3.86	1,388,695	5.52
Total	**1 102 460**	**5.16**	**2 332 998**	**4.38**	**531 334**	**3.84**	**3 966 792**	**4.52**

No further work was conducted at Paulsens by SBM.

7.2 Belvedere

The Belvedere resource is located 6.5 kilometres southeast of Paulsens Mine. Previous exploration within an area of historic workings has defined a JORC-compliant resource of 31,000 tonnes @ 4.29 g/t Au (4,334oz).

Exploration in the area has been conducted by Mount Isa Mines (MIM), Taipan and Saint Barbara Mines (SBM). Taipan completed programmes of detailed soil geochemistry, rock chip sampling, and 32 RC drillholes (2,453 metres) at Belvedere and Belvedere North.

A soil sampling program that was completed to extend soil coverage along the north strike extension of Belvedere to Belvedere North outlined a 125 x 50 metre anomaly (maximum value 49ppb gold), centered on a ridge of variably sheared basalt flows with minor quartz

veining. Numerous rock chip samples from this area have returned values over 1g/t gold, however veins are generally less than 0.25 metre wide and of limited strike extent.

At Belvedere North, a 100m by 50m +20ppb gold anomaly (maximum value 175ppb Au) straddles the Belvedere North workings but does not appear to extend along strike to the north or south. A sample collected from a creek channel downstream of the Belvedere North workings returned 20,018 ppb gold, attributed to contamination from the workings.

Approximately 200 rock chip samples have been collected from the immediate area of workings at Belvedere, primarily from narrow quartz veining of limited strike extent. Surface sampling of veining previously exploited at Belvedere, and later tested by RC drilling, returned values to 31.5ppm Au with elevated arsenic (maximum 26,100ppm As), copper (maximum 0.4% Cu), lead (maximum 37.7% Pb) and silver (maximum 763ppm Ag). RC drilling results were of a lesser tenor for all metals, indicating surficial enrichment of the ferruginous quartz veins sampled at surface.

RC drilling by Taipan was completed in late 1998, intersecting narrow zones of moderate grade gold mineralisation at Belvedere and at a second occurrence located 500m to the northeast. An inferred resource of 31,000 tonnes @ 4.29 g/t (4334oz) was calculated by Taipan using 20 metre spaced east-west orientated sections, a lower cut of 1g/t and no upper cut. Preliminary assessment of strip ratio indicated a 15:1 ratio.

Taipan completed metallurgical test work on drill cuttings from two RC holes drilled at Belvedere. The testwork was completed by Ammtec using two 10kg samples, one from the sulphide zone and one from the oxide zone. Gold recovery in the oxide zone was 96.96% versus 83.3% for the sulphide zone, with moderate cyanide consumption of 1.5kg. It is estimated approximately 15% of the ore would be oxide with 85% sulphide.

At Belvedere, the potential for the discovery of additional gold resources appears to be limited to small but possibly high grade deposits in the immediate vicinity of the Belvedere Fault. Given that the outcrop is very good to the north, it is unlikely that new deposits will be found in that direction, with the main potential restricted to down-plunge extensions of known deposits or possibly new deposits under cover to the south. Potential also exists for small deposits related to other north-northeast trending structures including the structure east of Belvedere that hosts several historic workings. However, these structures are much less significant than the Belvedere Fault.

7.3 Tombstone

The Tombstone Prospect comprises a localised area of historic copper workings located eight kilometres southeast of Paulsens Minesite. Previous exploration has been undertaken by MIM, Taipan and SBM.

The Tombstone area was explored in the early 1990's by MIM for VMS-style base metal mineralisation. MIM proposed the silica alteration visible on surface at Tombstone may represent the cinder cap of a VMS system. MIM undertook limited soil geochemistry and rock chip sampling programmes. An orientation TEM geophysical survey outlined an unexplained weak conductor under an area of alluvium and not associated with known graphitic shale horizons in the area. Although the company recommended a drilling programme to investigate the source of the TEM anomaly, no further work was undertaken and MIM surrendered the tenements in 1995.

Taipan undertook soil geochemistry, rock chip sampling and RC drilling of the historic Tombstone workings. The 25 by 25 metre soil geochemistry survey defined an extensive, slightly arcuate east-west oriented 600 by 300 metre copper-gold anomaly (as defined by the 10ppb gold contour and 500ppm copper contour) associated with the silicification and

quartz veining at Tombstone. The 50ppb gold contour however has a much more restricted extent forming only three relatively small anomalies. These smaller gold anomalies are interpreted to more accurately define areas of +0.5g/t primary gold mineralisation. Surprisingly the area of extensive silicification and malachite staining in the area of the mine adit did not return any soil values over 50ppb Au. A northwest-trending 150 by 50 metre anomaly (10ppb Au contour), located in the northwest part of the sample area defined a new target area that had not been previously investigated.

A total of 215 rock chip samples were collected by Taipan. Of these 20% returned over 0.1g/t Au and seven returned over 1/g/t Au, the highest value being 3.3g/t Au. The areas of best developed silicification and quartz veining and associated malachite have generally returned the highest rock chip gold values. Multiple +100ppb Au rock chips and the 50ppb soil gold contour loosely define a series of south to southeast plunging zones of gold mineralisation. Again, the rock chip values from the area of the adit, where extensive malachite staining was present, returned anomalous but generally disappointing results with no gold values over 0.5g/t gold.

To test the zone of mineralisation Taipan drilled 12 holes for 1,473 metres at Tombstone with holes oriented 030° at –60°. This drilling failed to intersect any significant gold mineralisation. Mapping and rock chip sampling has confirmed that this may have been due to the fact that the hole orientations were at a relatively oblique angle to the south dipping zones of silicification and quartz veining, particularly in the areas of better gold rock chip results. An RC program with drill holes oriented -60°/325° should be a better test of the down dip potential of the mineralisation defined in outcrop.

SBM undertook minor exploration work comprising rock chip sampling and geological mapping over the Tombstone area. Seven mining lease applications were pegged in September 2002 covering the Tombstone area, and the underlying exploration licence withdrawn. SBM completed no further exploration work.

7.4 Regional Exploration

Intrepid's current tenement holding has only been consolidated in the past few years. Prior to this, the tenements were held by a number of junior companies who were not in a financial position to conduct significant campaigns of exploration. Previous exploration within the tenements has therefore been conducted by a number of companies at varying levels of detail. This section summarises significant exploration completed prior to Intrepid.

Taipan acquired 200m line-spaced aeromagnetics and radiometrics covering the entire Wyloo Dome and Wyloo group sediments to the south. This data was augmented by St Barbara who commissioned more detailed geophysical surveys, including 40m line-spaced aeromagnetics and radiometrics covering a zone from Paulsens to Tombstone. St Barbara also compiled a regional-scale outcrop geological map based upon aerial-photography and satellite imagery interpretation and prospect-scale mapping. No regolith interpretation was attempted.

7.4.1 Paulsens East

The Paulsens East prospect is located 800 metres east of the Paulsens Gold Mine. The prospect hosts minor workings comprising shallow shafts and pits of a few metres depth, centred on discontinuous, pyritic quartz veining of less than one metre width. Veining is hosted by graphic argillite, interpreted as the faulted offset of the Melrose Fault host lithology.

Initial exploration at Paulsens East comprised rock chip sampling and the completion of three RC holes by CRAE. Only one hole returned a significant value of 1m at 2.4g/t Au.

Taipan undertook geological mapping, soil geochemistry, rock chip sampling and RAB and RC drilling. Results of soil sampling outlined two subparallel west-northwest-trending soil gold anomalies. The first measures 140 by 50 metres (20ppb gold contour) with a maximum value of 72ppb Au. The second measures 200 by 50 metres (20 ppb gold contour) with a maximum value of 27ppb Au. Rock chip sampling returned encouraging assay results including two samples from workings in the area of soil anomalism returning values of 16.8g/t and 13.7g/t Au. Veining not previously the target of historical mining failed to return anomalous values. Taipan undertook a programme of RAB drilling comprising 53 holes drilled across the extent of outcropping quartz veining. Only one hole returned a significant gold intersection of 4m at 1.06g/t Au in the area of main workings, immediately up-dip from CRAE's RC drilling intersection. Due to the shallow depth achieved by RAB drilling (maximum downhole depth of 50m with most holes less than 40m depth), a programme of 14 RC holes was completed to better test for mineralisation at depth. No significant values were returned.

SBM undertook two RC holes in 2002, targeting the zone of soil anomalism, however without success.

7.4.2 Matrix

The Matrix Prospect is located 1.3 kilometres east of Paulsens Minesite, covering significant outcrop of Fortescue Group sediments and basalt.

The prospect was identified by Taipan through rock chip geochemistry. Anomalous rock chip samples were collected from quartz veining containing visible pyrite and copper alteration hosted by Beaghy Sandstone. Maximum rock chip results were 5.1g/t Au, 1520ppm As, 0.86% Cu, 0.23% Zn, 69ppm Ag and 620ppm Sb. Soil sampling and rock chip traverses were subsequently undertaken across the sandstone outcrop/subcrop, covering an area of 700 by 400 metres. The only anomalous values were from the initial area of anomalous rock chip results. The lithological setting of sandstone adjacent to basalt provides a good rhealogical and porosity contrast for hosting mineralisation. However, the quartz veins appear to be of limited extent and no significant structures have been recognised in this area.

7.4.3 Rome

The Rome Prospect is located nine kilometres east of Paulsens Minesite and three kilometres northeast of the Tombstone Prospect. Prospect geology comprises Boongal Formation basalt of the Fortescue Group, Marra Mamba Iron Formation of the Hamersley Group and basal Wyloo Group Mt McGrath Formation. The stratigraphic sequence is intruded by northeast-trending dolerite dykes.

Previous exploration was conducted by Taipan and St Barbara. Rio Tinto conducted exploration for iron ore immediately north of the Rome Prospect during the 1990's, targeting Hamersley Basin sediments and detrital accumulations within drainage.

Exploration at Rome by Taipan comprised soil sampling, geological mapping and rock chip sampling. The primary targets comprise several large quartz blows of north to northeast orientation, interpreted to be an extension of the mineralised structures at Tombstone and similar in geological setting to veining at Billeroo Bore. Rock chip sampling returned significant gold (to 360ppb), copper (to 2.14%), lead (to 0.13%) and zinc (to 1.62%), although numerous samples of the same material failed to return elevated

values. Soil sampling of the Rome Prospect failed to delineate a coherent gold or base metal anomaly, returning only several isolated elevated values. A large proportion of the eastern extent of the tenement comprises recent fluvial sediments and sheetwash and would not be suitable for soil sampling.

SBM completed aeromagnetic and radiometric surveys (part of the regional survey) and undertook reconnaissance rock chip sampling. Only one significant value, 360ppb Au, was returned from rock chip geochemistry, collected from quartz outcrop previously sampled by Taipan. No multielement analysis was undertaken.

7.4.4 Billeroo

The Billeroo Prospect is interpreted as the east-southeast extent of the Tombstone structural trend. The prospect is located 12 kilometres southeast of Paulsens Gold Mine and covers an area from immediately south of the Tombstone area across to Intrepid's Billeroo Bore Prospect, 3.5 kilometres to the east. Exploration in the Billeroo Bore area has been undertaken by MIM, Taipan and SBM.

MIM explored the Billeroo Prospect during the early 1990's as part of their work in the Tombstone area. Apart from geological mapping, no other work was reported at Billeroo by MIM.

Soil geochemistry completed by Taipan outlined a number of poorly defined gold anomalies to the southeast and east of Tombstone.

SBM completed mapping, rock chip sampling, and soil geochemistry to investigate two areas of mineralisation at Billeroo. The first area is defined by a 250 by 50 metre soil anomaly (20ppb Au contour, maximum value 67ppb Au) that straddles a northwest-southeast trending series of quartz veins with associated silicification ± malachite alteration, hosted by dolerite and basalt. Rock chip sampling and infill soil geochemistry was completed to better define the area's potential. The second area comprises two gold in soil anomalies (20ppb Au contour, maximum value 82.5ppb Au), each of approximately 200 by 100 metres extent, located along the western margin of a small plug of Metawandy Granite. Multiple white quartz veins with variable goethite content occur both within the granite and adjacent dolerite and basalt. Rock chip sampling and infill soil geochemistry was completed to better define the extent of gold mineralisation. Results for detailed soil geochemistry surveys and rock chip sampling are outlined below:

- Area 1, located 2.1 kilometres southeast of Tombstone: 25 by 25 metre detailed soils were completed over an area of quartz veining and silicification along the contact between Metawandy granite and dolerite/basalt. The detailed soil sampling has defined a more restricted and erratic area of soil anomalism (10ppb Au contour) compared with the previous Taipan soil survey. Two separate anomalies of 125 by 75 metres extent were defined (peak values of 50ppb Au and 30ppb Au). Limited rock chip sampling completed by SBM returned a best value of 222ppb Au from a 2.5 metre wide quartz vein with moderate goethite after sulphide (?).
- Area 2, located 700 metres southeast of Tombstone: 25 by 25 metre detailed soils were completed to test an area of quartz goethite ± malachite veining and silicification. As with Area 1, the detailed soil sampling indicated a more restricted area of soil anomalism than the previous wide spaced Taipan soil survey. Here only two single sample anomalies occur (10ppb Au contour, peak values 23ppb Au and 15ppb Au). However, of four rock chip samples taken, one returned a best value of 2045ppb Au, 0.13% Cu and 0.19% Pb from a 3.5 metre quartz ± goethite vein.

- Area 3, this area is located immediately east of Billeroo Bore, some four kilometres east of Tombstone, characterised by a prominent ridge of quartz veining and silicification trending north-northeast, similar but more extensive than Belvedere. Only three samples returned over 10ppb gold, the highest assay being 15ppb.

Rock chip sampling was completed at several other locations of quartz veining, silicification, and malachite staining. None of the samples returned anomalous gold results although some exhibited elevated base metals (peak value 0.17% Cu).

7.4.5 Horse Well

E47/1134 is located 15km east of Paulsens Mine. Minimal exploration has been conducted within the lease. Reconnaissance geochemical sampling was completed by MIM and Cullen.

The lease covers a central core of Metawandy Granite overlain by Fortescue Group units (Mt Roe Formation basalt, mafic and felsic tuffs, rhyolite/dacite, andesite, and Hardy Formation sandstone). Gabbroic bodies (?sills) have intruded predominantly basaltic units, however within a trend consistent with stratigraphy. The stratigraphic package has been intruded by dolerite dykes of generally north-south, northwest-southeast (oblique to stratigraphy) and northeast-southwest orientation. Alluvium and minor colluvium are found in areas of lower topography.

MIM collected 32 stream sediment samples and 27 rock chip samples from the Horse Well area in 1992. No significant results were returned and MIM conducted no further work.

Cullen holds the tenement to the east, immediately adjacent to Horse Well. In 1999, Cullen collected 11 stream sediment samples from within the boundary of the Horse Well tenement, the drainage derived from geology within their tenement. No significant values were reported. Cullen also commissioned an aeromagnetic survey, the northern portion covering the Horse Well tenement.

Low-magnitude gold (13 to 52ppbAu) and one copper (108ppm Cu) anomaly have been defined from stream sediment sampling. As the samples are from drainage derived from the Metawandy Granite the results appear to be of little significance. Rock chip sampling has returned occasional copper and lead values, however gold values are uniformly low.

7.4.6 Three Corner Bore Area

The Three Corner Bore area, located 35 kilometres southwest from Paulsens Mine, comprises a few historic prospects. Prospect names have evolved and appear to have been interchanged leading to some confusion over their exact location. The Three Corner Bore area comprises the Carls Camp, Fuchsite, Jeerinah and Three Corner Bore Prospects. Intrepid have entered into an agreement with Pelican Resources (Pelican), the holder of E08/853 and E08/854, to earn up to 71% interest in the tenements through exploration expenditure.

The area covers Upper Fortescue Group, Hamersley Group, and Lower Wyloo Group sediments and mafics. Previous explorers have recognised the gold bearing potential of carbonate and/or iron-rich sediments along the structurally disturbed boundary between the Hamersley and Ashburton Basins. These include the dolomitic shales of the Duck Creek Dolomite and the iron-rich sediments from the Mt McGrath Formation belonging to the Upper Wyloo Group of the Ashburton Basin.

Previous exploration has been undertaken by Billiton Australia, Australian Ores and Minerals Limited (AOM), Pelican Resources (formerly Nugold Resources), Goldfields Australia, and SBM.

Billiton Australia was the first to locate the Three Corner Bore Prospect delineated by a reconnaissance stream sediment sampling program. The anomaly was derived from an area of siltstones and dolomite. Follow up soil sampling, carried out in 1986, returned a maximum value of 62.7 ppb gold associated with a zone of ferricrete and quartzite. The soil anomalies were associated with faulted, silicified and silcreted dolomite and bleached siltstone at the base of the Wooly Dolomite, with the soil anomalism coincident with strike slip and perpendicular normal faults (northeast). Composite rock chip traverses were undertaken along the trend of the quartzite, however failed to locate any significant gold anomalies. Two RC percussion drill holes were completed to test the main anomaly, however only intersected low gold values (maximum 15ppb Au). In September 1989, Australian Ores and Minerals Limited (AOM) took over the exploration of the tenement as part of the Duck Creek Joint Venture - a JV between themselves, ACM Operations Pty Ltd and Billiton Australia Limited. No significant exploration was undertaken. Landsat interpretation in combination with reprocessed BMR airborne magnetic data interpretation was used to locate structurally favorable sites for mineralisation over the tenements of the JV. Although two possible gold targets were indicated within E08/854, there is no record of further work being undertaken by Billiton.

Nugold Mines (now Pelican Resources) acquired the area in 1995 as E08/854. They initially conducted a rockchip sampling program and site inspection over the previously defined anomalous zones at Three Corner Bore, Carl's Camp and Jeerinah Prospects. The main quartz vein at Carl's Camp, hosted by Cheela Springs Basalt of the Fortescue Group, was observed with a northwest-trending strike, similar to the trend observed at Jeerinah Prospect. The Carl's Camp's vein is usually massive, 2 to 5 metres wide and approximately 150 metres long. The main Jerrinah quartz vein, hosted by Jeerinah Formation of the Fortescue Group, is about 2 metres wide and 200 to 300 metres long. The quartz veins at both prospects appear similar in nature and are usually massive with sections developing iron boxwork structures (relic sulphides, the sulphide minerals associated with gold mineralisation). The sulphide mineralisation exhibits erratic distribution throughout the veins. The Three Corner Bore Prospect is located in the lower section of a hill that forms part of the east-west escarpment transversing the southern portion of the area. The target unit is a resistant quartzite that protrudes out from the hill 20 metres above ground level. Pervasive silica enrichment has destroyed the original sedimentary textures. Weakly gold mineralized iron boxwork structures are visible within the quartzite, which have an association with quartz veined joint planes. The unit lies within a folded sequence with an axis trending about 95º to 100º. The parasitic folds are located on larger folds with a north-south trend. The exact structural relationships cannot be determined due to scree across the slope face. Moving up the hill there is an increase in quartz veining at various locations, however the boxwork structures are less noticeable. The target unit is bounded on both sides by northeast trending faults. The faults may control mineralisation and represent a conceptual target for drilling. The mineralisation thus far appears to be restricted to one unit. At Three Corner Bore, channel sampling was completed in an attempt to better delineate the anomalous gold horizon on the western side of the fault zone. In all, 14 composite channel samples were collected for a total of 56m of continuous sampling. The channel sampling program failed to delineate the anomalous mineralisation associated with the mineralised horizon on the western side of the fault zone. All sample values were less than 0.01ppm gold and 0.2ppm silver.

Rockchip sampling by Nugold at Carl's Camp and the Jeerinah Prospect concentrated on the previously investigated quartz vein systems. A continuous soil sampling grid was

established over the Carl's Camp and Jeerinah Prospects, including the area between the two prospects. A total of 636 samples were collected from fourteen, one kilometre long north-south lines with a line spacing of 200m and a sample interval of 25m. Contouring of the soil data gave a general north west trend. Field observations indicate the elevated gold values occur on, or associated with, dolerite sills within the metasediment package. Elevated arsenic values occur mainly in one central zone in the north west sector of the grid.

To test the geochemistry anomalies at the Three Corner Bore, RC drilling was completed comprising twenty holes for 780 metres. Drilling involved two vertical 30 metre holes at Three Corner Bore Prospect and eighteen holes on the western section of the Carl's Camp soil grid, near the Jeerinah Prospect. The two holes at Three Corner Bore targeted a gently south dipping quartzite bed anomalous in gold and sulphides. The holes intersected bleached shales and quartzite stratigraphically above the Duck Creek Dolomite contact. Eighteen drill holes on the Carl's Camp soil grid were collared at a dip of -60 degrees to a depth of 40m. All but two of the drill holes were oriented to the north. The drill holes were used to test a soil anomaly generated over the Fortescue Group. Fine-grained sediments, sandstone, dolerite and slate were intersected with the dominant lithology being shale. Three consecutive holes intersected anomalous silver values, the maximum intercept being 32m at 5.31g/t Ag.

Goldfields Australia commenced exploration in joint venture with Nugold in the Three Corner Bore area during the period April 1999 to August 2000. Work completed includes soil sampling, stream sediment sampling, rockchip sampling, mapping and an airborne multi-client aeromagnetic survey. Detailed rockchip sampling was completed over the Three Corner Bore area, which lead Goldfields to a weakly ferruginous boxwork quartzite. Four follow up samples were collected over a strike length 60m on the new target area. The pyritic quartzite returned values in excess 1g/t Au, with the highest being 30.6 g/t Au. The mineralisation appears to be stratabound between two northeast striking faults, expressed on surface by quartz veining. Anomalous gold in rockchip sample results (+1.0 ppm Au) at Jeerinah and Carl's Camp Prospects were also obtained from these quartz vein systems.

SBM commenced exploration in the Three Corner Bore area in 2002 in joint venture with Pelican. Work comprised minor rock chip sampling.

7.4.7 Miningee Well

The Miningee Well Prospect is located 42 kilometres southwest of Paulsens Mine. The tenement was previously held by Newcrest and Pelican, although there is minimal recorded work undertaken by the companies. SBM completed soil geochemistry and rock chip sampling.

Initial reconnaissance mapping and rock chip sampling was completed by SBM to define areas of exploration potential. The work outlined a target, Miningee Bore, which is characterised by a quartz vein breccia zone developed within the Duck Creek Dolomite host that outcrops cross much of the area. The quartz vein breccia ± goethite (after sulfide?) outcrops over a strike length of 220 metres and is up to 15 metres wide. A total of 20 rock chip samples were collected from the area. Of the 20 rock chip samples collected, none returned anomalous gold, the maximum value being 4ppb, however base metal values were consistently elevated. Arsenic values were relatively low, the maximum value being 44ppm. Antimony results were below detection (2ppm). Subsequent to rock chip sampling, a soil geochemistry programme was completed across suitable portions of the Miningee Well Prospect. A low-level northeast-southwest gold anomaly was defined

within a background level of 4ppbAu. The anomaly is coincident with a weak As anomaly, the geochemistry anomaly also coincident with a structure discernable from Landsat and aeromagnetic imagery and coincident with the drainage pattern in the area. No further work was undertaken by SBM at Miningee Well.

7.4.8 Monster Lode

The Monster Lode Prospect is host to diminutive historic workings located 13.5 kilometres south of the Paulsens Gold Mine. There is no recorded production from the workings, although grades were estimated during operation to be approximately 5 g/t ore (Talbot, 1926).

Monster Lode is the most extensively explored prospect within the tenements outside Paulsens with the majority of previous exploration undertaken by Pelican. Pelican describe two styles of mineralisation at Monster Lode. The first is a 1 to 5 metre wide by 75 metre long zone of quartz stockwork that occurs within the Hamersley Group, Marra Mamba Formation oxide facies BIF adjacent to the contact with Lower Wyloo Group sandstones. The second style outcrops as stratabound zones of ironstone within Lower Wyloo Group sandstones, where sediments are cut by a conjugate set of N-S and NNW-trending faults.

Soil and rock chip sampling was followed by 41 RAB holes totaling 1649 metres and 28 RC holes totaling 1849 metres. Several significant drill intercepts have been reported, (all are 1m single intercepts) the maximum being 1m at 5.84g/t Au. No economic lode was defined by drilling and Pelican no further work was undertaken at Monster Lode.

7.4.9 Gossan Ridge

The Gossan Ridge Prospect is located 2 kilometres southwest of Monster Lode. Previous exploration was undertaken by SBM.

Geology comprises Mount McGrath Formation sandstones and siltstones intruded by numerous quartz stringers. Geology and mineralisation is similar to Monster Lode. Rock chip sampling in conjunction with geological mapping by SBM returned significant gold results (to 75g/t Au) associated with narrow, gossanous quartz veins and quartzite outcropping along the prominent ridge. Further rock chip sampling confirmed significant gold values (>1.0g/t Au) over a strike extent of 300 metres.

7.4.10 Woolshed Prospect

The Woolshed Prospect is located 20km south of Paulsens Gold Mine and forms part of the Wyloo Joint Venture with Pelican Resources. Previous exploration was conducted by Pelican and SBM.

The mineralisation at the prospect occurs in Wyloo Group stratigraphy, near the top of the Duck Creek Formation, just below the contact with the overlying Ashburton Group clastic sediments. The mixed sediments are tightly folded into a series of anticlines and synclines plunging about 60° to 110°. The prospect is cut by an east-west fault, and a northwest-southeast-trending sinistral fault to the east. Several large quartz veins intrude the massive dolomite, typically trending east-southeast, paralleling the fold axes. Minor quartz veins trend north-northeast at right angles to the fold axes, crosscut by east-southeast trending quartz vein clusters. Veining is less common in the mixed sediments. Ironstones, quartz-goethite breccias and alteration in the form of pervasive iron staining occur along the folded sequence of mixed sediments and within adjoining massive dolomite. The

alteration and mineralisation appears to be spatially related to the anticlinal fold axes. In particular, the dolomites are totally unaltered and unoxidised except along the anticlines.

Pelican undertook 200 x 100 metre spaced soil geochemistry, defining a series of low level gold anomalies (10 ppb Au contour). Rock chip sampling in the area of soil anomalism returned consistently elevated arsenic (maximum 4,344ppm As), copper (266ppm Cu), lead (2,557ppm Pb), and zinc (1,337ppm Zn), and less commonly silver (1.3 ppm Ag), but no elevated gold.

The anomalous target was partially tested by 20 RC holes for a total of 1,041 metres. Drilling intersected consistently anomalous base metals and arsenic in the weathered zone and erratic narrow gold grades, the maximum result being 2m at 1.76g/t Au. The reason for an absence of gold in surface samples, with underlying mineralisation detected in drilling may be due to surface depletion, or masking of a surficial geochemical anomaly by silcrete development.

SBM completed further rock chip sampling to define the surface expression of the shallow intersections returned from drilling by Pelican. SBM failed to return significant gold values from the sampling, however, as with Pelican, elevated base metal values were encountered.

7.4.11 Hardy Junction

The Hardey Junction area comprises three tenements located 10 to 20 kilometres south of Paulsens Gold Mine. Intrepid are earning an interest in the tenements from Cullen through exploration expenditure.

The tenements cover minor Fortescue Group, and Mount McGrath, Duck Creek Dolomite and Ashburton Formations along the southwestern portion of the Wyloo Dome. The stratigraphy is intruded by several northeast-southwest-trending dolerite dykes. A number of generally north-south to northwest-southwest structures cut stratigraphy and terminate the western extent of the Duck Creek Dolomite.

Previous exploration was conducted by Russgar Minerals NL, Billiton Australia, BP Minerals, Copperfield Gold, Nugold, Cullen, and Barrick (in joint venture with Cullen).

Russgar explored for uranium and base metals from 1972 to 1973 in an area covering the northwest and northern portions of the current tenements. Work was of a reconnaissance nature and comprised geological mapping and rock chip sampling. Ground traverse scintillometer surveys were completed. No significant anomalies were defined.

Billiton explored the area from 1985 to 1990 in joint venture with Austamax Resources, Australian Ores and Minerals and ACM Gold for strataform gold and base metals. Exploration comprised aerial photography, stream sediment sampling, geological mapping accompanied by rock chip sampling, soil geochemistry and an airborne MKII Geoscan multispectral survey. Investigation of weak drainage anomalies failed to detect significant mineralisation to justify further work. Anomalism identified from soil sampling and targets produced by the Geoscan survey were concluded to relate to transported material.

BP and joint venture partners Riomin Australia Gold and RT Mining Corp explored an area south of Mt DeCourcey from 1988 to 1990. The target was gold and base metal mineralisation within the Duck Creek Dolomite and along the contact with the Mount McGrath Formation. Exploration work was restricted to the collection drainage samples.

Copperfield gold explored for gold and base metals between 1992 to 1994 over an area covering most of the current joint venture tenements. Stream sediment sampling failed to produce any significant gold or base metal anomalies.

Nugold (now Pelican Resources) held an area covering the northern portion of the current tenement area. Work comprised rock chip sampling and soil geochemistry. No significant results were returned from the sampling.

Barrick joint ventured the Hardy Junction tenements with Cullen from 2001 to 2003. Work comprised rock chip geochemistry and RAB auger drilling. Auger drilling targeted two areas, (i) the western area, to the west of a major NNW fault with associated rock chip sampling anomalism, and (ii) the Mount McGrath-Duck Creek Dolomite contact zone. The drilling across the Hardey Junction Project was generally disappointing, and failed to intersect any areas of significant gold mineralisation. The best result was 10m at 0.13g/t Au from a RAB hole drilled to test the down-dip extension of banded brecciated and ferruginous outcropping sediments within an area where rock chip samples had returned elevated As-Sb-Ba-Pb associated with very weak gold anomalism.

7.4.12 Paulsens West

The Paulsens West area is located directly west of Paulsens Minesite. The area overlies significant outcrop of Fortescue Group sediments and volcanics. Stratigraphy comprises upper Hardy Formation felsic tuff and basalt and lower Fortescue Group sediments, mafic tuff and basalt. The sequence has been intruded by dolerite dykes and sills. Northwest plunging folds have been disjointed by regional-scale structures parallel to sub-parallel with the Wyloo Dome axial planar cleavage. The western portion of the tenement hosts north-south-trending structures. There appears to be less dolerite intrusive in the Paulsens Mine area with the most prominent magnetic unit being the Hardy Sandstone. Three regional-scale dykes trending northeast-southwest can be recognised and may be associated with basement structures. The only significant exploration undertaken within the tenement area was by Taipan and St Barbara Mines.

Taipan undertook stream sediment sampling and rock chip sampling over the area immediately prior to the company's acquisition by Saint Barbara. SBM commissioned an aeromagnetic and concurrent radiometric survey that covers Paulsens West as part of a larger survey covering most of the tenements. A geological interpretation was produced from the aeromagnetic data. SBM undertook soil sampling over five areas of non-outcrop, although the active alluvium in these areas is probably of sufficient thickness for the soil geochemistry to have been ineffective for investigation of the underlying geology. Rock chip sampling has been undertaken sporadically across the tenement. Significant rock chip values are generally from isolated samples, apart from a small cluster of elevated gold and occasionally base metal values in the north of the lease. The tenement contains three prospects, Amazon, Beaghy Bore and Capewells, defined as structural targets through interpretation of aeromagnetic data. The three most significant gold rock chip results within the area (716ppb Au, 180ppb Au, 100ppb Au) were collected from the Amazon prospect in the north of the tenement. Rock chip samples from this prospect also contained significant copper values (to 1.9% Cu). Samples were collected from NNW-trending quartz veining and described as ferruginous and containing visible pyrite and malachite. Only one rock chip sample from the Capewells area returned a significant response, 0.76% Cu, collected from quartz veining with visible pyrite and malachite.

7.4.13 Gossan Hills

The Gossan Hills Prospect is located 5 kilometres directly north of Paulsens Minesite. The tenement covers Wyloo Group stratigraphy of the northern Wyloo Dome. The northern portion of the lease consists largely of recent fluvial sediments and sheetwash associated with Duck Creek drainage and lesser fine-grained sediments of the Ashburton Formation.

The southern area of the tenement comprises lower Wyloo Group and upper Fortescue Group stratigraphy. North and northwesterly structures, some containing doleritic intrusive, extend through the area. The only recorded exploration at the prospect was conducted by St Barbara.

Work by SBM has involved aeromagnetic/radiometric surveys, soil geochemistry, geological mapping and rock chip sampling. The Mount McGrath Formation/Duck Creek Dolomite Formation contact has been tested by soil sampling and rock chip sampling. Of the 41 rock chip samples collected 12 returned anomalous results. Sampling was either undertaken to test quartz veining associated with the dolomite/sandstone contact or veining along north-trending structures. Only ten of the rock chip samples were assayed for elements other than gold and arsenic. In the south of the tenement six samples were collected from quartz vein material intruded along a northwest-trending structure hosted by strongly foliated and sheared mafic tuffs of the Pyradie Formation (Fortescue Group). The veining is continuous over several hundred metres and varies in width from several centimetres to three metres. Intrusion post-dates the regional foliation as quartz stringers from the main quartz vein follow the foliation in places. Two samples returned minor gold values with elevated lead and copper. A sample collected at the north of the vein, where outcrop terminates possibly due to weathering, returned 770ppb Au, 1.15%Cu, 128ppmAg and 846ppmSb. Although a number of rock chip samples were collected along the extent of the gossanous sandstone/dolomite contact only one area in the southeast of the lease returned significant values; one of the six samples detected elevated gold (298ppb Au), however all samples returned anomalous arsenic values (622ppm As to 5,163ppm As). A low-level soil gold anomaly and minor arsenic values are coincident with the anomalous rock chip samples. Soil sampling has been undertaken along the 3.5km extent of Duck Creek and Mt McGrath contact within the tenement and to the south across interpreted structural trends extending north from the Paulsens Mine area. Elevated gold values were returned at several locations along the contact zone defining five anomalous zones (10ppb contour), that appear related to structural intersections. The only elevated arsenic values occurred in the area of anomalous rock chip samples associated with the dolomite/sandstone contact. As most of the area sampled comprises outcrop, results for geochemical sampling are expected to be of moderate levels.

8.0 EXPLORATION BY INTREPID MINES

NuStar Mining (now Intrepid Mines) was formed in February 2004, incorporating the previous Taipan Resources' assets and ground holding. The initial focus for the newly formed NuStar Mining was the commencement of mining of the Paulsens orebody. Portal development commenced in June 2004 and infrastructure construction was completed in May 2005. The processing plant was commissioned in May 2005.

Regional exploration by NuStar was initiated in January 2005. Initial work comprised a data review and validation and restructuring of the database. The data review was undertaken to consolidate all hardcopy and digital data and to define targets for initial exploration based on previously completed work. Maxwells Geoservices was commissioned to restructure the database from a Microsoft Access format to a normalised, SQL format. The database was validated by comparison with original, hard copy data, and original digital analytical files were sourced from the relevant laboratories and reloaded into the database. Following this work, an assessment of the tenement holding was completed to prioritise prospective areas for exploration work and to determine which tenements should be surrendered due to a lack of prospectivity as defined by previous exploration work and/or geological setting.

8.1 Mineralisation Models

Known mineralisation of significant tenor within the Ashburton Basin is predominantly structurally controlled, with a few instances of stratabound mineralisation (for example Mount Clement). Structural trap sites comprise jogs and flexures in strike-slip lineaments, brecciation produced by compressional deformation of brittle (or chemically altered) lithologies, fold closures, and chemically reactive or permeable lithologies. In the Wyloo Dome area, mineralisation is generally associated with dextral wrench structures, with potential for mineralisation associated with other D_2 deformation such as anticline hinges and thrust faulting and brecciation.

Significant, deep-seated feeder structures for mineralisation have not been located, however the regional scale north to northeast trending faults, in many instances defined by late-stage dolerite intrusion, have been suggested as conduits for mantle derived fluids. Many of these structures in the west of the Wyloo Dome transect areas of defined mineralisation. The metallurgical variation in mineralisation in different areas/stratigraphic formations appears to be related to timing of ore body formation, and possibly interaction of magmatic fluids with higher-level granitic fluid phases. Mineralisation within the Ashburton Basin has been defined as Proterozoic age, although there is the possibility of Archaean mineralisation within exposed central core complexes. Gold and base metal (copper, lead, silver) mineralisation in the Wyloo Dome area is associated with structural trap sites produced during dome formation. Base metal mineralisation (lead and silver and lesser copper, zinc and gold) within the Ashburton Formation sediments is probably of later occurrence, late- or post-Wyloo Dome deformation.

Immediate exploration targets in the Paulsens area are:

Upper Hardy sandstone stratigraphy: (Host to Paulsens Mine).

- Antiformal major and parasitic fold hinges and NW wrench faults;
- N to NE faults marked by quartz blows and dolerite dykes.

Mt Roe Basalts: (Tombstone mineralised trend)

- Units showing rapid facies changes and evidence of growth faults;
- Interbedded felsic volcanics;
- Silica bodies or gossans;
- Pyrite-quartz-carbonate shears or thrusts;
- N to NE crosscutting dolerites or quartz may locally focus gold mineralisation.

D_2 wrench faults:

- For example the 310° trending fault east of Paulsens;
- Plunging mineralisation could have a small footprint.
- Areas where the fault cuts fine-grained sediments or brittle fracture hosts such as mafic intrusions.

N to NE crosscutting structures:

- For example, the Belvedere-Rome trend and Billeroo Bore, or dolerite dyke trends crosscutting fine-grained sediments.

Dolomite/carbonate stratigraphy (Wooly and Duck Creek dolomites)

- May host Carlin-style mineralisation as claimed at Mt Olympus and in the Cheela Plains area.

- Important to identify deep-seated structures in conjunction with favourable lithology.
- Alteration comprises silicification and argillisation (and for carbonate rocks decalcification) in conjunction with pyrite, arsenopyrite and arsentiferous pyrite.

8.2 Exploration work completed

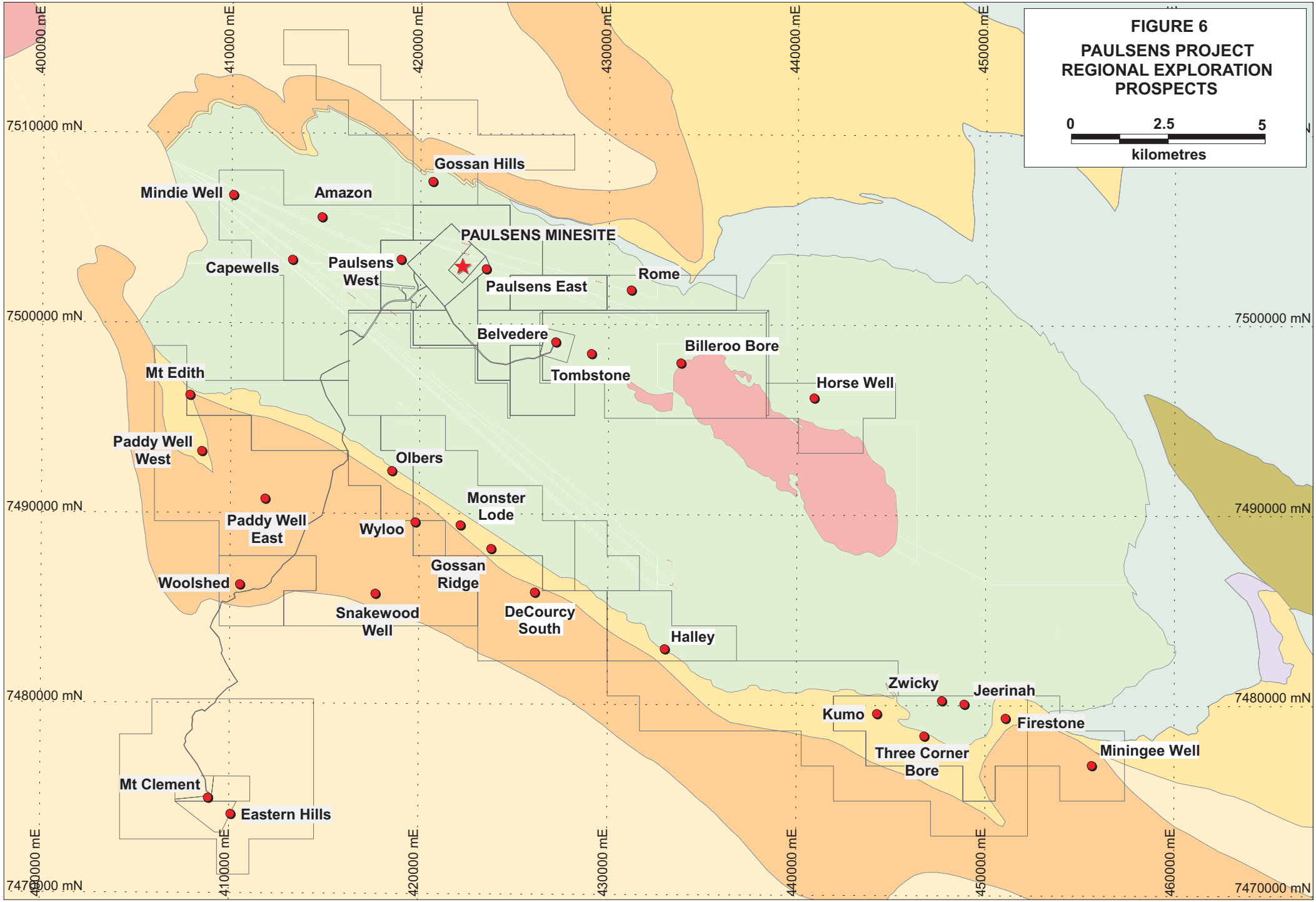
To date exploration conducted by Intrepid has targeted regional prospects in an attempt to define additional resources for the Paulsens Gold Operation. Exploration has comprised soil sampling, rock chip sampling, auger geochemistry, RAB drilling and RC drilling.

Field reconnaissance work was conducted on several tenements that were deemed to have minimal potential for hosting economic gold or base metal mineralisation. The tenements were located in Ashburton Formation sediments, between 50 to 75 kilometres to the southwest of Paulsens Minesite. Geochemistry anomalies defined by soil and rock chip sampling had been drilled at five locations. In all cases, where elevated gold was intersected in drilling, widths were narrow, generally to a maximum of one metre, and not of economic value. The previous work was considered to have adequately tested the geochemical anomalies, and due to the limited prospectivity of the four tenements, they were surrendered during 2005.

To aid in planning and assessing geochemistry programmes Lithofire Geological Consultants were commissioned to produce a surface geology plan. The 1:50 000 scale surface plan was synthesised from remote imagery (aerial photography and satellite imagery), incorporating prospect scale mapping. A broad-scale structural interpretation was completed based upon mapping and interpretation of aeromagnetic imagery.

Several targets have been identified utilising remote imagery interpretation incorporating field mapping and geological interpretation, and the results of previous exploration.

Testing of the targets initially comprised geochemistry programmes. Due to the large proportion of outcropping geology and significant alluvium development in drainage tracts, conventional soil geochemistry is considered to be an inappropriate exploration tool for the majority of the lease area. To test areas of alluvium and colluvium deposition auger drilling was trialed in fifteen areas. Most of the areas targeted for auger testing have received no previous drilling, therefore the auger programmes were important in determining the further direction and exploration methods for these areas. Initial drilling was completed on broad-spaced grids (400 by 400 metres) to determine the suitability of auger for the different areas. Several prospects were found to be unsuitable for auger geochemistry, including Wyloo, Gossan Hills, Rome, Paddy Well East, and Edith Well, due to the presence of a stripped regolith profile (alluvium directly overlying fresh, in situ geology) or induration of alluvial clays and ferricrete development of colluvium inhibiting penetration. The lack of deeper weathering and saprolite development severely limits lateral dispersion of metallic and pathfinder elements from any potential mineralised source. To return a significant value, the auger hole would need to be drilled immediately adjacent to or directly into the mineralised source and can be equated to rock chip sampling “blind” under the alluvial cover. RAB drilling was attempted in some of these latter areas, with varying effectiveness.


FIGURE 6
PAULSENS PROJECT
REGIONAL EXPLORATION
PROSPECTS
0
2.5
5
kilometres
400000 mE
410000 mE
420000 mE
430000 mE
440000 mE
450000 mE
460000 mE
7510000 mN
7500000 mN
7490000 mN
7480000 mN
7470000 mN
Gossan Hills
Mindie Well
Amazon
PAULSENS MINESITE
Capewells
Paulsens West
Paulsens East
Rome
Belvedere
Billeroo Bore
Tombstone
Horse Well
Mt Edith
Paddy Well West
Olbers
Monster Lode
Paddy Well East
Wyloo
Gossan Ridge
Woolshed
Snakewood Well
DeCourcy South
Halley
Zwicky
Jeerinah
Kumo
Firestone
Three Corner Bore
Miningee Well
Mt Clement
Eastern Hills

8.2.1 Exploration Field Programmes

Initial exploration by Intrepid targeted significant rock chip results from the **Gossan Ridge Prospect**. Gossan Ridge is located 1.5 kilometres from the historic Monster Lode workings and is hosted in the same Mount McGrath Formation stratigraphy. Previous exploration had defined a zone of gold anomalism, identified by rock chip sampling, of plus 1.0g/t Au values (maximum 75.9g/t Au) over a strike extent of 300 metres. To test for economic mineralisation, seven 100 metre deep RC holes were drilled at a 50 metre spacing along the southern flank of the Mount McGrath trend at Gossan Ridge. The results were disappointing with only two holes returning elevated gold responses, 2m at 0.66g/t Au and 1m at 0.52 g/t Au. The elevated gold values returned from rock chip sampling were attributed to scavenging of gold by the ferruginous/gossanous sediments during weathering. Of interest is a lack of elevated base metal values associated with the high magnitude gold results. Typically, in the Wyloo Dome area, elevated gold values are accompanied by similarly elevated arsenic, lead, copper, silver and/or antinomy values.

The **Gossan Hills Prospect**, located north of Paulsens Minesite, was also RC drill tested to determine the source of soil geochemistry anomalism. Four holes were completed in an area of gossanous Duck Creek Dolomite, adjacent to the contact with narrow Mount McGrath Formation sediments. Minor quartz veining is present on a slight topographic rise, coincident with anomalous gold and arsenic values returned from soil sampling. Two further holes were drilled to test a northwest-trending quartz vein, anomalous in gold and copper as identified by rock chip sampling. Drilling returned only two significant results of narrow width, 1m at 2.74g/t Au and 1m at 1.44g/t Au. Of greater interest were the broad zones of anomalous gold mineralisation encountered within both dolomite and sandstone (10m at 0.45g/tAu, 11m at 0.21g/tAu and 4m at 0.67g/tAu) that correspond to a northwest-trending structure. The structure, of similar orientation to the Paulsens' mineralised envelope, is only one of a number of similar sub-parallel regional-scale structures occurring in the area and may represent an exploration target for structurally-controlled gold mineralisation.

Areas that had previously returned significant rock chip geochemistry values were assessed to determine whether the outcrop warrants RC drill testing.

Twenty rock chip samples were collected at **Paulsens West** from an area of shale and basalt that had previously returned values of 2.39ppm Au and 0.33ppm Au with elevated As, Cu and Pb values. The rock-chip samples were collected from a series of quartz veins approximately one metre thick and trending 140-150^0. The veins consist of massive white quartz, and minor coarse grained crystalline calcite. The veins are slightly oblique to the main foliation which trends 130-135^0 with a steep southwest dip. Results from the rock chip sampling returned no anomalous gold, the only significant results were low-level lead (maximum 0.17%) and zinc (0.27%).

The **Amazon Prospect,** located 7.5 kilometres west of Paulsens Gold Mine, was recognised through rock chip sampling by Taipan. Geology comprises quartz veining to 5 metres width intruded along the folded contact between shales and vesicular basalt of the Boongal Pillow Lava Member of the Fortescue Group. Previous rock chip sampling of outcropping quartz veining at Amazon returned values to 0.71ppm Au, 1.9% Cu, 0.16%

Pb and 1.1% Zn. Further samples were collected to determine the extent of anomalism associated with the narrow veining. Maximum values returned from the recent sampling were 0.26ppm Au and 0.33% Cu. A total of 51 rock chip samples have now been collected at Amazon with only three elevated gold values returned. Elevated copper values are attributed to surface enrichment, related to malachite development within the exposed quartz veins. The quartz veining at Amazon does not appear to represent a drilling target.

The **Rome Prospect,** located up to 3 kilometres north of Belvedere and Tombstone, comprises an area of numerous quartz blows of north-south to northeast-southwest orientation. The veining reaches widths of 20 metres and is up to 1 kilometre strike extent. The veins possibly relate to deep structures within the Archaean Fortescue Group rocks that may have been reactivated at later stages of deformation. The veins do not extend into Hamersley Group or Wyloo Group lithologies and have been rotated, probably during D_2, indicating early genesis. Previous sampling has returned anomalous gold and base metal values and the area is prospective for Paulsens-style mineralisation. Previous sampling has returned values to 0.85ppm Au, 21.0% Cu, 1.77% Pb and 77.4ppm Ag. Intrepid has conducted reconnaissance exploration to validate results of previous sampling and to determine the source of anomalism. Maximum results returned are 0.85ppm Au, 4.55% Cu, 1.77% Pb and 77ppm Ag. Although no ore-grade gold results have been returned, the extent of anomalous gold and base metal values, the structural setting, and the style of mineralisation are prospective for hosting moderate-tonnage gold and polymetallic mineralisation.

A small resource has been defined at **Belvedere** associated with the main zone of historic workings. To evaluate the potential for further resources in the area Intrepid has undertaken rock chip sampling at several locations around the main historic Belvedere mine to determine the magnitude of mineralisation associated with minor historic workings (shallow pits) and quartz veining oblique to the primary Belvedere structural trend. Six samples were collected from minor diggings in the hills 750 metres north of Belvedere. Two samples returned significant results (0.84ppm Au, 0.10% Cu, and 7.4ppm Ag; and 0.33ppm Au, 0.36% Cu and 3.6ppm Ag) related to west-northwest trending (stratigraphic trend) quartz veining. The veining is generally narrow (less than 1 metre) and does not appear to be of economic tonnage potential. Three samples were collected from west-northwest trending (stratigraphic trend) quartz veining near minor workings, one sample returning 0.26ppm Au. This mineralisation appears to be related to possibly stratabound sheared sediments (sandstone grits and conglomerate) over an extent of 600m. The zone cross cuts the north-south Belvedere trend immediately north of the main workings. Previous sampling along the sheared sediment has returned several ore-grade values to a maximum of 4.89ppm Au. There is a metallurgical difference between the two mineralised trends with the sediment associated mineralisation not containing the elevated copper, silver and occasional lead that occurs with the Belvedere gold lodes. This zone was not tested by previous RC drilling at Belvedere. Further mapping and rock chip sampling will be conducted to determine whether further drilling targets exist in the area.

Minimal work has been undertaken by Intrepid in the **Tombstone** area as the tenement is currently under application, with granting expected in the latter part of 2006. Previous exploration has returned significant results from quartz veined and brecciated structures in the area surrounding the historic workings. Reconnaissance exploration, including rock chip sampling, has been undertaken to determine the relationship between the Tombstone mineralisation and mineralisation identified within related structures. Two

areas to the southeast of the original Tombstone Prospect have returned significant values:

(i) Area 1 lies 400 metres southeast of the historic Tombstone adit. Sampling by Taipan returned maximum values of 8.60ppm, 2.23% Cu, and 11.9ppm Ag. The area from where the samples were collected appears to be along a southeast-northwest trending normal fault related to mineralisation at Tombstone. The sequence comprises silicified arenitic sandstone intruded by several quartz veins of up to five metres width, cross-cut by late dolerite dyke intrusions. The relationship between the altered sandstone and the quartz veining is uncertain as the veining is oblique to local stratigraphy. The porous sandstone may be preferentially mineralised adjacent to the northwest-southeast structure and therefore stratabound mineralisation may be of limited extent. The quartz vein-hosted mineralisation appears to be directly related to faulting as unaltered basalt has been juxtaposed to the west with no indication of veining or mineralisation within the mafics. The sequence is obscured by colluvium to the northwest. Recent rock chip sampling by Intrepid returned significant gold, copper and silver values to a maximum of 1.42ppm Au, 8.36% Cu and 52ppm Ag.

(ii) The second area lies 1500 metres southeast of Tombstone. Geology comprises minor quartz veining associated with a northwest-trending structure crosscutting basalt and intruded by dolerite. Sampling in this area has returned values to 0.49ppm Au, 5.88% Cu and 23.6ppm Ag. The second area appears to be associated with a similar structure as the previous sampling area immediately southeast of Tombstone. Further work is required in both areas prior to drill testing.

Minor rock chip sampling of a large northeast-trending, northwest-dipping quartz blow had previously been undertaken by Taipan at **Billeroo Bore**. The quartz blow occurs along a structure that appears to define the northern margin of the Metawandy Granite. Taipan collected four samples from the main quartz vein returning one significant result of 0.61ppm Au, 1.67% Cu and 12.3ppm Ag. Intrepid recognised a zone of secondary quartz veining emplaced along the hangingwall contact of the main quartz blow, distinguishable by strong malachite and goethite alteration. The quartz vein is approximately two metres wide and obscured by quartz scree from the large quartz blow. Systematic rock chip sampling has defined a zone of 280m strike extent of greater than 0.5g/t Au (maximum value of 1.81g/t Au). Veining is truncated to the east by dolerite dyke intrusion and obscured to the west by quartz colluvial scree. The quartz vein also contains elevated copper (to 2.33% Cu) and silver (to 455ppm Ag) with occasional elevated lead (to (5.51% Pb). Billeroo Bore lies within the same exploration licence application that contains the Tombstone Prospect. RC drill testing will be undertaken when the tenement is granted.

The **Miningee Well Prospect** is located at the southeast extent of Intrepid's Ashburton tenement holding, 40 kilometres from Paulsens Gold Mine. Initial reconnaissance mapping and rock chip sampling was completed at the prospect to define areas of exploration potential. The work outlined a target, Miningee Well, which is characterised by a quartz vein breccia zone developed within the Duck Creek Dolomite host that outcrops across much of the licence area. Subsequent to the rock chip sampling a soil geochemistry programme was completed across the area. A low-level northeast-southwest gold anomaly was defined within a background level of 4ppb Au. The anomaly is coincident with a weak As anomaly, the geochemistry anomaly also coincident with a

structure discernable from Landsat and aeromagnetic imagery and defined by the drainage pattern in the area. Two traverses of RAB drilling were undertaken to test the soil anomaly. The drill lines were spaced 200 metres apart, with drill hole collars at 40 metres along each traverse. Only one hole intersected significant mineralisation, 4m at 0.13ppm Au. Depth of penetration of the RAB drilling was poor due to silicification of dolomite through weathering at surface. As hole depths were only of the range 8 to 39 metres, the target structure is not considered to be adequately tested.

The **Three Corner Bore** area hosts a number of prospects of varying exploration maturity. Three Corner Bore is located 30 to 35 kilometres southeast of Paulsens Minesite on the south-easterly plunging nose of the Wyloo Dome. The prospects are geologically similar, generally associated with quartz veining or quartz-breccia within structures related to D_2 regional deformation. Weak stratabound mineralisation related to ferruginous sediments has also been identified. Intrepid has undertaken soil sampling, rock chip sampling, auger drilling and RAB drilling at Zwicky, Firestone, Kumo and Three Corner Bore Prospects.

Soil sampling was undertaken at the **Firestone Prospect**, at the northeastern extent of the Three Corner Bore tenement. The 176 samples were collected on a 100 by 50 metre grid. Geology comprises colluvium and subcrop of upper Fortescue Group basalts and sediments, Hamersley Group, and Lower Wyloo Group sediments. Previous rock chip sampling of subcropping quartz veining in the area of soil geochemistry had returned values to 3.81ppm Au, 0.29% Pb and 55.9ppm Sb. No coherent anomaly was defined by the soil geochemistry. Validation sampling was also undertaken at Firestone to check high gold results (to 44.4ppm Au) previously returned from rock chip sampling of outcropping quartz veining. The recent sampling returned a maximum gold value of 1.86ppm Au and elevated arsenic, antinomy and silver. To test areas covered by thin alluvium and therefore not suitable for the application of soil geochemistry, an auger drilling programme was completed over the southern Firestone area. A total of 97 holes were drilled on a 400 by 100 metre grid. Average hole depths were between 1 to 2 metres, intersecting a stripped profile with 0.5 to 1.0 metre of alluvial cover. The geology primarily comprised Fortescue Group basalt with a well developed foliation, and numerous quartz veinlets. Minor hematite and gossanous zones appear to be associated with the quartz veining. Pedogenic carbonate was ubiquitous as was minor calcrete development at surface. Only half of the holes were sampled as the stripped profile of the area prevented penetration of the underlying geology for sample collection. To test the significance of gold and base metal anomalies returned from rock chip sampling of subcropping quartz veins a single line of RAB drilling was completed. The drilling also targeted a northwest-trending structure coincident with a fold closure associated with deformed sediments. The holes were drilled at -60^0 toward 360^0 on 40 metre centres covering an extent of one kilometre. Hole depths varied between 7 to 54 metres. Geology encountered comprised predominantly fine grained sericitic sediments and basalt, with lesser sandstone/quartzite and shale. Lithologies either side of the structure are relatively distinct with a moderately steep dip to the south. Sediments immediately to the north of the structure were variably chloritised and strongly deformed whereas basalt to the south of the contact was mostly massive to moderately foliated. Saprolite development increased significantly from less than 5 metres to 30 metres adjacent to the fault zone. Assay results returned from the Firestone RAB drilling were uniformly low and failed to repeat any of the anomalous gold results returned from rock chip sampling of nearby quartz veins. Slightly elevated gold (4m at 36ppb Au) hosted in quartz veins close to the fault zone also hosted elevated antinomy (52ppm Sb) and lead (1,295ppm Pb). Several elevated copper values were also returned including 4m at 0.26% Cu from surface, 4m at 0.27% Cu from holes close to the

sediment/volcanic contact. The elevated copper results do not appear to have any relationship to the anomalous gold or antimony assays.

At **Three Corner Bore Prospect**, a fractured chert/shale quartz vein horizon along the upper contact with the Wooly Dolomite unit extends for over five kilometres. Localised folding and brecciation produced by cross-cutting structures are visible along the extent of the contact horizon. Previous soil sampling and sporadic rock chip sampling at the Three Corner Bore Prospect has returned elevated gold (to 24.0ppm Au) and base metal values. A further 46 rock chip samples were collected along this horizon to verify previous results and to further test areas exhibiting significant results from a limited number of samples. No significant gold, and only a few elevated arsenic and copper results were returned from the sampling. Two shallow RC holes were previously drilled at the prospect to test the rock chip results, with no significant mineralisation intersected. Of concern is the inability to repeat the high results of previous sampling, indicating possible errors in the historic data.

The **Kumo Prospect** is located at the western extent of the Wyloo/Hamersley Group chert/shale/dolomite stratigraphy in the Three Corner Bore area. A 72 sample soil programme was completed to test this area for mineralisation. Of the 300 planned samples only 72 were collected due to the presence of active alluvial cover, an unsuitable sampling medium for soil sampling, over a significant portion of the area. Due to the disjointed sampling pattern no coherent anomalies were recognised.

The **Zwicky Prospect** is located to the west of Firestone and comprises outcropping basalt and sandstone along low ridges, and alluvium across broad drainage tracts. Auger drilling was undertaken to test areas of alluvium cover, targeting interpreted Mount McGrath and Hamersley Formation sediments. Drill hole spacing was 200 by100 metres for the 54 holes completed. Average hole depths were between 1 to 2 metres, intersecting a stripped profile with an average of 0.5 to 1 metre alluvium cover. Geology included foliated basalt and minor sandstone. Very little alteration was logged. As with Firestone, the stripped regolith profile prevented the sampling of many holes.

To the west of the Three Corner Bore area the topography becomes more rugged and steep. The **Halley Prospect** is located 15 kilometres to the west of Three Corner Bore, covering Mount McGrath sediments and the contact with overlying Duck Creek Dolomite. Due to the rugged topography minimal previous exploration has been conducted at Halley. A total of 11 rock chip samples were collected from sheared sediments within a large antiformal fold closure with a wavelength of approximately 50 to 70 metres. The shearing was most obvious in conglomerate (deformed clasts) however, fine grained pelitic units above and below the conglomerate were altered showing sericite development. Ironstone and ferricrete was not strongly developed reflecting the strong erosional regime due to the steep slope. Dark red earthy hematite was developed in some of the conglomerate and pelitic units. Elevated gold, copper, arsenic and lead results were returned from iron-altered sandstone at the break of slope on the south side of the ranges. Maximum values returned were 94ppb Au, 277ppm As, 691ppm Cu, 1120ppm Pb and 12.6ppm Sb. Auger drilling was completed along the southern slope of the ranges covering the Mount McGrath\Duck Creek contact on an 800 by 100 metre grid. Holes were to a maximum of 4.5 metres with a few holes failing to penetrate the ferricreted colluvial surface cover. Lithologies logged included indurated foliated argillite with minor silicified dolomite exhibiting very little alteration. Results of the auger geochemistry

outlined a low-level gold-arsenic-lead-antinomy-mercury anomaly covering 2,000 metres of Mount McGrath stratigraphy. To test the geochemistry anomalism a RAB programme was completed comprising two lines spaced 1300 metres apart, with a hole spacing of 40 metres along traverses. Nineteen holes were completed for a total of 677 metres. The holes were all drilled at -60^0 toward 360^0 with hole depths varying between 8 to 67 metres. Geology encountered included quartz sericite schists interbedded with sericite schist and minor chlorite schist (probably deformed sediment). Dolomite was encountered in the southern most hole indicating the drilling encompassed the lithological contact between the two main sedimentary units investigated. The Dolomite was fresh close to surface resulting in very slow drill penetration. The Halley prospect was covered by a thin, but sporadic veneer of colluvial cover to a maximum depth of approximately 5 metres. However, saprolite development was highly variable with depths to 25 metres close to the ranges decreasing to surface outcrop to the south. This may be a manifestation of deeper weathering on a structure corresponding to the break in slope of the Mt McGrath formation. Saprolite development was also enhanced where quartz veining was encountered. The drilling encountered steeply south dipping quartz veins; the strike extent of the quartz vein zone to the west and east is not known. Gold assay results for the Halley prospect were low with 31ppb Au the maximum assay returned. Multielement values were slightly elevated with 16m at 0.2% Cu from surface in one hole. The elevated copper was hosted by a zone of quartz veining encountered in five adjacent holes. The drilling at Halley indicates that the contact of the Mount McGrath sediments and Duck Creek dolomite and structures within the dolomite are less prospective than the apparent structural contact (faulted contact with quartz veining) at the break of slope of the Mount McGrath ranges, which appears to be in a similar structural position to Gossan Ridge.

The **DeCourcey South Prospect** is located seven kilometres west of Halley, south of Mt DeCourcey. As with the Halley area, the rugged topography at DeCourcey South has deterred sampling along the ridges of Mount McGrath Formation and Hamersley Group geology that forms the southern limb of the Wyloo Dome. Historic rock chip sampling has primarily focused on quartz veining within Duck Creek Dolomite in lower-lying areas to the south of the ridges. Several elevated arsenic and lesser lead and zinc values, but no anomalous gold, were returned from the rock chip samples. Intrepid commenced rock chip sampling of the more prospective lithologies along the ridges and encountered several quartz veins returning elevated gold (to 368ppb Au) and arsenic (to 5,521ppm As). Two traverses of RAB drilling had previously been undertaken by Barrick, covering the lower Mount McGrath Formation and the contact with Duck Creek Dolomite. There were no significant gold intersections however several zones of anomalous arsenic (including 18m at 1,410ppm As) and occasional elevated antinomy and mercury were intersected. These pathfinders are indicative of Carlin-style mineralisation. Further RAB drilling was completed by Intrepid, encompassing two main target zones; Zone 1, targeting a northwest trending structure at the base of the Mt McGrath Ranges, and Zone 2, a northwest trending structure within Duck Creek Dolomite defined by a linear northwest-trending aeromagnetic signature. Two lines were completed at Zone 1, spaced 1200 metres apart with a hole spacing of 50 metres along the traverses. Thirteen holes were completed for a total of 543 metres. The holes were all drilled at -60^0 toward 360^0 with hole depths varying between 16 to 81 metres. Geology encountered included predominantly sericite and quartz sericite schists reflecting the low grade metamorphic alteration affecting the Wyloo Dome. Parent rocks would most likely have been fine grained pelitic sediments such as mudstone and shale with minor coarser grained quartz rich sediments. The pelitic sediments display a strong fabric indicating strong ductile deformation and a ubiquitous overprint of disseminated magnetite. Three lines were completed at Zone 2, with the lines 2,250 metres and 1,400 metres apart respectively and

a hole spacing of 50 metres. Nineteen holes were completed for a total of 565 metres. The holes were all drilled at -60^0 toward 360^0 with hole depths varying between 12 to 48 metres. Geology encountered comprised predominantly sericite schists interbedded with quartz sericite schist and minor sandstone. Dolomite was commonly encountered within the northern half of the lines overlain by sedimentary schists and sandstone, possibly reflecting the contact with overlying Ashburton Group sediments. Parent rocks would most likely have been fine grained pelitic sediments such as mudstone and shale. The Dolomite exhibited a restricted weathering profile, with fresh grey dolomite encountered 3 to 4 metres below dolomite outcrop resulting in very slow drill penetration. Graphitic shale was logged in one hole, hosting pyritic quartz veining over approximately 5 to 6 metres. Saprolite development varied and appeared to depend on lithology (ie the dolomite exhibited minimal saprolite development). The DeCourcey South assay results were generally low, with slightly elevated gold (4m @ 331ppb Au) in one hole, hosted by oxidised quartz-sericite schist with no visual signs of mineralisation or alteration. Slightly elevated multi-element results were returned from several holes (1,000 to 1,500ppm As and 1,000 to 2,000ppm Zn) and minor lead and antinomy. The elevated zinc values correspond to thin graphitic shale units present throughout the sedimentary package.

The **Snakewood Well Prospect** is located south of Wyloo Homestead along the southern margin of the Hardey Junction joint venture tenements. The prospect covers Newmont's "Duxhalite" unit, a jaspillitic chert and carbonate iron formation defining the Duck Creek Dolomite and Ashburton Formation contact, proposed to represent the deposition of exhalative fluids emplaced along the unconformable contact. The unit varies from 5 to 50 metres width and is exposed at several locations. The Duxhalite has been the target of previous explorers for base metal mineralisation in other areas south and north of the Wyloo Dome. A soil sampling programme comprising 474 samples including 204 orientation fraction samples was completed over exposed portions of the Duxhalite horizon. The sampling covers approximately 3.5 kilometre strike extent at 100 metre or 200 metre spacing. No significant anomalism was outlined by the sampling.

The **Woolshed** area had previously been explored by several companies for base metal and gold mineralisation targeting northwest-trending structures within Duck Creek Dolomite. The structures are associated with minor quartz veining and gossans at surface. The Duxhalite Unit is also located in the Woolshed area. Auger drilling was attempted to test strike extensions of the gossanous structures in areas of alluvium cover. The majority of auger holes drilled at Woolshed were terminated in dense alluvial material or indurated colluvium, inhibiting auger penetration. Subsequently, RAB drilling was completed at Woolshed focussing on several anomalous rock chip samples and gold anomalism defined by historic soil sampling, coincident with an aeromagnetic target interpreted to be a sedimentary exhalite unit present at the contact of Ashburton Formation/Duck Creek lithologies. Results of the soil sampling highlight a narrow anomalous gold zone of 400 metre strike extent with a plus 50ppb Au contour coincident with the interpreted structure/exhalite unit. Drilling included two lines at 800 metres spacing with holes drilled at -60^0 toward 360 at 100 metre centres. Seventeen holes were completed for a total of 453 metres with hole depths varying between 6 to 35 metres. Geology encountered included mainly quartz sericite schist, metapelite, minor quartz rich sediments and abundant massive white to grey vein quartz. Alteration included limonitic weathering, minor silicification and sporadic manganese. Maximum gold assays returned include 4m at 210ppb Au from fine grained sediment and possibly chert. This may represent an intersection of the exhalite unit but this is uncertain. The lithologies were ferruginous and the anomalous gold probably represents minor surface enrichment. Antimony was also

slightly elevated with a maximum 36ppm Sb coincident with the gold value. Sightly elevated multi-element assays where returned from several holes including 8m at 0.18% Pb. The elevated Pb results were coincident with 130-170ppm Sb and 0.05% Cu. Gold however was low with a maximum of 11ppb. The logging indicates weak manganese alteration associated with the anomalous multi-element values. Background gold within the Woolshed area appears to be slightly higher than other areas tested (around 5-10ppb Au as opposed to 1-5ppb Au in other areas) and is associated with iron or manganese, and therefore probably supergene.

The **Paddy Well West Prospect** is located 17 kilometres southwest of Paulsens Minesite. Geology in the area is predominately Duck Creek Dolomite and minor shale and sandstone horizons. A regional-scale northwest trending structure, the Paddy Well Fault, cross cuts stratigraphy. A flexure in this structure interpreted from aeromagnetic imagery was the target of an auger geochemistry programme. The geology intersected in auger drilling included quartz biotite schist and lesser sediment including sandstone, strongly foliated argillite and dolomite. The auger geochemistry defined a broad, low-level gold-arsenic-antinomy-mercury anomaly coincident with the Paddy well fault. RAB/aircore drilling was completed to investigate the geochemistry anomaly, comprising six RAB holes for a total of 177 metres and 15 aircore holes for a total of 637 metres. The holes were drilled at -60^0 toward 090^0 at 50 metre centres. Hole depths varied between 21 to 78 metres. The Paddy Well Fault is defined by strongly foliated rocks exhibiting biotite development suggesting rocks along the fault zone may have been affected by higher grade metamorphism. Two elevated gold-antinomy intersections were returned (8m at 295ppb Au, 88ppm Sb; and 8m at 300ppb Au). Elevated coincident arsenic-zinc values are related to graphitic shale horizons. Further drilling is required at Paddy Well West to complete the planned programme (certain areas could not be accessed due to heavy rainfall) and to investigate the anomalous gold intersections.

The **Capewells Prospect** is located seven kilometres west of Paulsens Minesite. The area comprises mainly outcrop with minor alluvium along drainage. The prospect covers Boongal Mafic Volcanic and Hardey Sandstone Members of the Fortescue Group. Northwest-trending structures, similar to the Paulsens' mineralisation orientation, cross cut the stratigraphy and were the target of an auger drilling programme. An initial 36 auger holes were completed on a 400 by 400 metre grid. Average hole depths were between 2 to 4 metres, intersecting a stripped profile with 1 to 2 metres of alluvial cover. Minor gold, arsenic and mercury values were returned at the eastern edge of the grid. Further auger infill undertaken in the anomalous area defined the extent of the anomalism with gold and base metal results of similar tenor to the initial drilling. There is no significant alteration or quartz veining visible in outcrop adjacent to the anomalous zones.

Mindie Well Prospect is located immediately north of Capewells. Auger geochemistry, comprising 45 holes, was completed on a 400 by 400 metre grid. Average hole depths were between 2 to 4 metres, intersecting a stripped regolith profile with an average of 1 to 2 metres alluvial cover. The majority of geology included mafic volcanics, dolerite, and sandstone. No anomalism was encountered and no further auger drilling was undertaken due to the unsuitable regolith encountered.

The only other area to have received significant attention by Intrepid is the **Olbers Prospect**, located 5 kilometres along strike from Monster Lode within the same

Hamersley Group and Mount McGrath stratigraphy. Previous rock chip sampling had returned elevated gold values to 179ppb Au. To comprehensively test the ferruginous stratigraphy of the area 5 metre composite channel samples were completed across the prospective stratigraphy. Traverses are spaced at a nominal 200 metres, dependent upon stratigraphy, alteration and access. Traverse lengths have varied from 53 to 150 metres (average length 100 metres). No anomalous values have been returned, although only a small portion of the planned sampling has been completed to date.

8.2.2 Research Programmes

Further exploration work undertaken by Intrepid has involved geophysical and geochemical orientation studies and detailed mapping by geological consultants. This work was undertaken to augment field exploration methods and to better interpret the results of geochemistry programmes.

Multielement Studies

A study of the mineralisation geochemistry and metallurgy was undertaken on selected drilling sample pulps from Paulsens (Upper and Lower Zones), Belvedere, Gossan Ridge and Gossan Hills. The samples were despatched to Genalysis Laboratories, Perth, for 32 element analysis to determine (i) possible pathfinder elements for regional geochemical exploration, (ii) possible variations in timing and mineralisation source, (iii) wall rock alteration associated with different mineralisation occurrences, and (iv) the spatial relationship between the different metallic commodities in the area, and (iv) possible structural conduits for mineralisation. Problems were encountered in locating the historic drilling pulps, limiting the number of samples available for the study. Further multielement studies will be undertaken when extension drilling for the Paulsens ore body is completed later in the year.

Geophysical Properties of Paulsens Mineralisation

To determine the effectiveness of various geophysical techniques that may be employed for prospect-scale exploration, a study was undertaken on diamond core samples from the Paulsens Resource drill holes to determine geophysical properties of various lithologies and ore zones. The work was completed by Southern Geoscience Consultants (SGC) of Perth. Seven samples of core, reflecting the various lithologies and mineralised zones encountered at Paulsens, were measured for their response to gravity, IP and EM survey techniques. The results of the study indicate that the most suitable geophysical method for defining Paulsens-style mineralisation is EM. IP will only be suitable for shallow ore bodies and gravity even less effective to detect sulfide bodies. Due to the rugged terrain of the Paulsens area, helicopter EM will be most cost effective. However, the massive sulfide bodies must be of suitable dimensions (the data was modelled on a 50m long by 30m wide by 2m width zone) to be detected. An orientation surface EM and IP survey is planned over the Paulsens area later this year.

Paulsens Structural Mapping Study

To gain a better understanding of the relationship between mineralisation and structure at the Paulsens deposit consultant geologist Roger Marjoribanks was commissioned to complete an updated interpretation of the Paulsens ore body. Roger had previously undertaken surface mapping at Paulsens for St Barbara, and it was thought that the

underground exposure would allow the confirmation and refinement of his previous observations. Roger spent ten days on site compiling geological mapping data from the underground development and undertaking underground structural mapping. A further week was spent interpreting the data and producing a final report and a series of flitch and sectional geological interpretations at 1:5,000 scale. A more detailed geological model for Paulsens mineralisation has been produced. Roger's work has identified a hiatus in the Upper Zone, previously interpreted as a continuous zone of mineralisation, and has also lead to a new interpretation of "Central Lode" mineralisation, previously thought to consist of minor tension gash-style lodes of minimal economic importance, but now thought to comprise at least four continuous zones that can be targeted by underground drilling. Roger's work has also lead to greater confidence in the structural setting of mineralisation at Paulsens that will aid in the planning of mine development and future resource drilling programmes. Flitch and section plans are currently being digitised and will be used for the planning of further drilling to define down-plunge mineralisation.

Alteration Mineralogy study

To aid in interpretation of geochemical anomalies outlined from the auger drilling programmes, an alteration mineralogy study was undertaken on bottom-of-hole samples to determine whether any mineral assemblages associated with economic mineralisation are present. The aims of the analysis were to:

- Interpret the mineral assemblages in the samples;
- Assess if any samples contain mineral assemblages that potentially indicate an alteration overprint on the regional greenschist metamorphism;
- Broadly assess the lithological influences on mineral assemblage;
- Broadly compare the mineralogical data with the geochemistry.

Sample pulps were sorted and forwarded to Auspec International, Melbourne, for spectral analysis. A suite of drill hole sample pulps from the Paulsens ore body were also to be selected and analysed for mineralogical alteration assemblages, however the pulps could not be successfully sourced. The analysis of Paulsens alteration mineralogy will be undertaken after the next phase of drilling at Paulsens is completed.

Auspec summarised the results as follows:

There is an overall influence due to lithology on the mineral assemblages of many samples, with the mafic units being generally dominated by chlorite and the sedimentary units being dominated by white mica. However, over this broad characteristic there are variations that could be associated with alteration. In summary:

- Montmorillonite occurs with chlorite in many mafic (and sedimentary) samples, and could be associated with a weathered white mica alteration phase because, typically, the montmorillonite in these samples often occurs in samples proximal to elevated Au.
- White mica is well developed in the sedimentary units, and in part could be detrital or metamorphic. However, the occurrence of different phases of white mica suggests that one phase could be associated with alteration. It is possible from observations of the different prospect areas that the muscovitic white mica is associated with alteration whereas the low Al muscovite white mica is a regional phase. This is because, in general, the muscovitic phase appears to be often more closely associated with elevated Au. An exception is observed in the Paddy Well West samples, where there is a low Al white mica in a white mica +

carbonate assemblage proximal to elevated Au, which could represent a third (alteration related) phase, that is compositionally similar to the “regional” phase.

- The distribution and occurrence of the iron oxides, both hematite and goethite, appears to form a halo around and proximal to elevated Au. The occurrence of these minerals could represent a weathering product of sulphide (probably pyrite) or elevated overall Fe in association with the Au.
- There may also be an alteration related phase of chlorite, which appears to be compositionally distinct from the regional metamorphic chlorite. Specifically, an Mg to Mg/intermediate chlorite is more often seen in association with elevated Au than the Fe/intermediate chlorite. In addition, the Fe/intermediate chlorite is more typically observed to occur with actinolite, suggesting that it is more typical of the metamorphic chlorite.

The data is currently being analysed and compared to analytical results to determine whether further investigation is warranted at the prospects.

MMI Geochemistry Orientation Programme

Surface samples for Mobile Metal Ion (MMI) analysis were collected at Paulsens East. A total of 297 samples were obtained from a 100 by 25 metre grid. The samples were submitted to ALS, Perth, for MMI analysis using the Wamtech Pty Ltd proprietary leach reagents with an ICP-MS determination. Elements analysed were Au, As, Ag, Co, Cu, Pb, Sb and Zn.

The Paulsens East area was chosen for the orientation study because; (i) known mineralisation occurs at the Paulsens East Prospect defined by the location of historic workings, associated with narrow, subcropping quartz veins, (ii) close spaced conventional soil geochemistry has been completed in the area allowing a direct comparison of the techniques, and (iii) the MMI sampling area covers variable topography, with half of the samples collected over an area of sub-cropping geology (relict and erosional regime) and half of the samples collected from thin alluvial sheet wash and colluvium (erosional to depositional regime).

Results of the study outlined gold anomalies of similar geometry to that defined by soil sampling. The major difference between the two methods is a more coherent and discrete anomaly associated with the thin zones of mineralisation defined by the MMI analytical method. If the location of mineralisation was unknown, the MMI method would provide a more precise drilling target. The MMI method failed to define extensions to known mineralisation in areas of alluvium cover, however, there is no evidence that mineralisation is present along strike of the historical workings.

Heritage Surveys

Prior to major, ground disturbing exploration activities being undertaken, ethnographic surveys are required with the traditional landholders of the area to ensure the work does not negatively impact upon any existing sites of cultural or archaeological significance. An anthropological heritage survey was conducted at ten prospects in early 2006 prior to the commencement of drilling activities. The survey comprised one consultant anthropologist, four PKKP representatives (the traditional landholders) and two Intrepid Exploration staff. No areas of cultural significance were recognised at the prospects and only minor artefact scatters were recognised at several locations. The only artefact considered to be of archaeological significance was a grindstone at the Tombstone Prospect. A 50m buffer

zone around the grindstone was recommended at this location. The proposed drilling will not impact on any areas of cultural significance and permission was given for drilling to commence. More detailed archaeological surveys will be required if significant mineralisation is encountered and close-spaced drilling is undertaken.

8.2.3 Sampling and Analytical Details

Historic sampling and analytical methods, where known, are documented in the database for all drilling and geochemical sampling programmes. Details of more recent drilling programmes, including sample collection and preparation, analytical methodology, and quality control procedures are found in resource estimation reports by Golders, RSG, and ResEval. Sampling and analytical procedures for Intrepid programmes are listed below.

Soil sampling

Details of geology and morphology at each sample site was recorded and the soil samples were collected by digging a small pit to a nominal 30 centimetres and passing the material through a #80 mesh and retaining approximately 100g of the fine material. The samples were sent by courier to Genalysis laboratories, Perth, and analysed for gold to 1ppb detection limit by graphite rod furnace with AAS finish, and for As (5ppm), Ag (0.5ppm), Cu (10ppm), Pb (10ppm), Sb (10ppm) and Zn (10ppm) by ICP.

Rock chip sampling

Rock chip samples were collected from in situ outcrop only. Descriptions of geology and structure for the outcrop were recorded and a minimum of 2kg of sample collected. Samples were sent by courier to either Amdel Laboratory, Perth, or ALS Laboratories, Perth, and analysed for gold by AAS to 1ppb detection limit, and for As (5ppm), Ag (0.5ppm), Cu (10ppm), Pb (10ppm), Sb (10ppm) and Zn (10ppm) by ICP.

RAB/Aircore sampling

RAB and aircore samples were collected at one metre intervals by bucket from the sample cyclone and laid on the ground in rows, at intervals of 10 metres. Sampling was undertaken by quartering the sampling and using an aluminium scoop, or passing a sample spear through the sample pile to collect each sample. Samples were collected as four metre composites of approximately 3kg of material per sample. Where significant results were returned, the original sample piles were revisited and individual one metre samples, corresponding to the anomalous composite, were collected as described above. Samples were forwarded by courier to ALS Laboratories, Perth, and analysed for gold by AAS to 1ppb detection limit, and for As (5ppm), Ag (0.5ppm), Cu (10ppm), Pb (10ppm), Sb (10ppm) and Zn (10ppm) by ICP.

Auger sampling

Auger samples were collected using the same methodology as for RAB sampling, however only a composite of end of hole in situ material was collected for analysis. Samples were forwarded by courier to ALS Laboratories, Perth, and analysed for gold by AAS to 1ppb detection limit, and for As (5ppm), Ag (0.5ppm), Cu (10ppm), Pb (10ppm), Sb (10ppm) and Zn (10ppm) by ICP.

RC sampling

RC samples were collected by passing each one metre sample through a 12.5:87.5 sample splitter, the larger sample retained in a plastic bag at the drill site, the smaller sample forwarded by courier to Amdel laboratory, Perth. Analysis was undertaken for gold by 50g fire assay.

9.0 CONCLUSIONS AND RECOMMENDATIONS

Regional exploration in the Paulsens area is still at an early stage, however, as exploration progresses a greater understanding of mineralisation styles and the geochemical response of various lithologies and regolith materials is being achieved. The regolith profile in many areas of the tenement holding was previously poorly understood, mainly through a lack of data, and incorrect exploration methods were being utilised. Also, the lack of exploration coverage, with work concentrated in only a few areas, failed to provide an overview of geochemical response in regard to different structural and lithological mediums.

The auger drilling programmes undertaken in 2005 have provided information on the regolith profile in most areas under a surficial alluvium or colluvium cover that had previously not been drilled. In most cases, drilling intersected a stripped profile, with up to five metres of alluvium directly overlying fresh rock. In many cases, the surface alluvium is active during periods of rainfall, being located in broad drainage tracts. Previous conventional soil sampling programmes undertaken in these areas would not have been effective in testing for underlying, in situ mineralisation.

Rock chip sampling is now being undertaken in a more systematic manner, with composite channel traverses being sampled in conjunction with lithological and structural mapping. The results of multielement analysis of the samples will provide data on alteration outside the immediate zone of mineralisation. The collection of lithological and structural data will allow the determination of favourable geological settings that can be applied elsewhere within the tenements.

The rock chip sampling programmes in conjunction with prospect-scale mapping has defined several areas for drill testing. Geophysical surveys will be required to define targets in areas of broad alluvial cover.

Exploration work planned for the coming year comprises:

- RC drill testing of targets at Billeroo Bore and Tombstone, defined by the results of rock chip sampling.
- Orientation geophysical surveys are planned for the immediate Paulsens Mine area. The results of the surveys will determine their effectiveness in testing prospective areas under alluvial and colluvial cover to define targets for RC drilling.
- Programmes of detailed rock chip traverses, in conjunction with geological mapping, will be ongoing and hopefully define further targets for RC drill testing.
- Further diamond drilling is planned to test for down-dip and down-plunge extensions to the Paulsens orebody to extend the current life of mine. The drilling is planned for the latter half of this year.

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CERTIFICATE – ERIK NORUM
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*I, Erik Norum, as author of this report entitled; "**An Update of Regional Exploration Activities for the Paulsens Project, Ashburton Region, Western Australia**" for Intrepid Mines Limited, do hereby certify that;*

1. I have practised as a geologist since 1990 and as a registered Professional Geologist since 2006. I have acted as Exploration Manager, Australia, for Intrepid Mines since 2005 and I am not independent of the issuer.
2. I hold a Bachelor of Applied Science degree in Geology from the University of Technology, Sydney, 1990, and have been practising continuously as a professional since graduation.
3. I am in good standing as a registered member of the Australian Institute of Geoscientists (#3376) since 2006.
4. I have prepared this report through compilation of new information obtained through company activities during 2005 and 2006 and refer to, and update historical information, conclusions and analyses from previous reports as shown in the Reference list.
5 By reason of experience and education, I fulfil the requirements of a Qualified Person as set out in National Instrument 43-101, to act as a professional geologist for this review.
6. I have read National Instrument 43-101 and Form 43-101F1. This report is prepared in accordance with generally accepted Canadian mining industry practice and complies with National Instrument 43-101. This report is a statement of material facts and opinion and may be used by Intrepid and its advisors in support of their evaluation of their properties and for preparation of other public documents.
7. As of the date of this certificate I am not aware of any changes in fact or circumstances as regards the subject matter of this report which may materially affect the content of the report or the conclusions reached. I have acted in the capacity of and as Exploration Manager, Australia, of Intrepid Mines since 2005 and have visited the property and directly reviewed and supervised work on a regular basis during 2005 - 2006.

Dated at Perth, 20th day of August, 2006

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Signed "E. M. Norum"

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