



ACN 119 057 457

**ASX QUARTERLY REPORT
FOR PERIOD ENDED 31ST DECEMBER 2008**

HIGHLIGHTS

Mt Thirsty Ni Co Mn Project (WA)

- **New study findings - Project has potential to deliver 3,700 tonnes of cobalt, 10,300 tonnes of nickel and 27,000 tonnes of manganese per annum during first 3 years of production to rank in the top 5 cobalt producers globally.**
- **Atmospheric leach extractions of 99% cobalt, 78% nickel and 98% manganese achieved during recent metallurgical test-work.**
- **Desktop study reveals NPV of A\$450 million with an IRR of 27% calculated using US\$10,000 per tonne nickel price and an exchange rate of 0.70 USD/AUD.**
- **Potential net cashflows for the life of mine after capital payback pegged at A\$1.65 billion at US\$4.54/lb nickel, US\$16/lb cobalt and US\$1,200/tonne manganese carbonate.**
- **Production profile targeting 2 million tonnes per annum plant feed rate.**
- **Proposed plant flow design is proven with no new technology.**

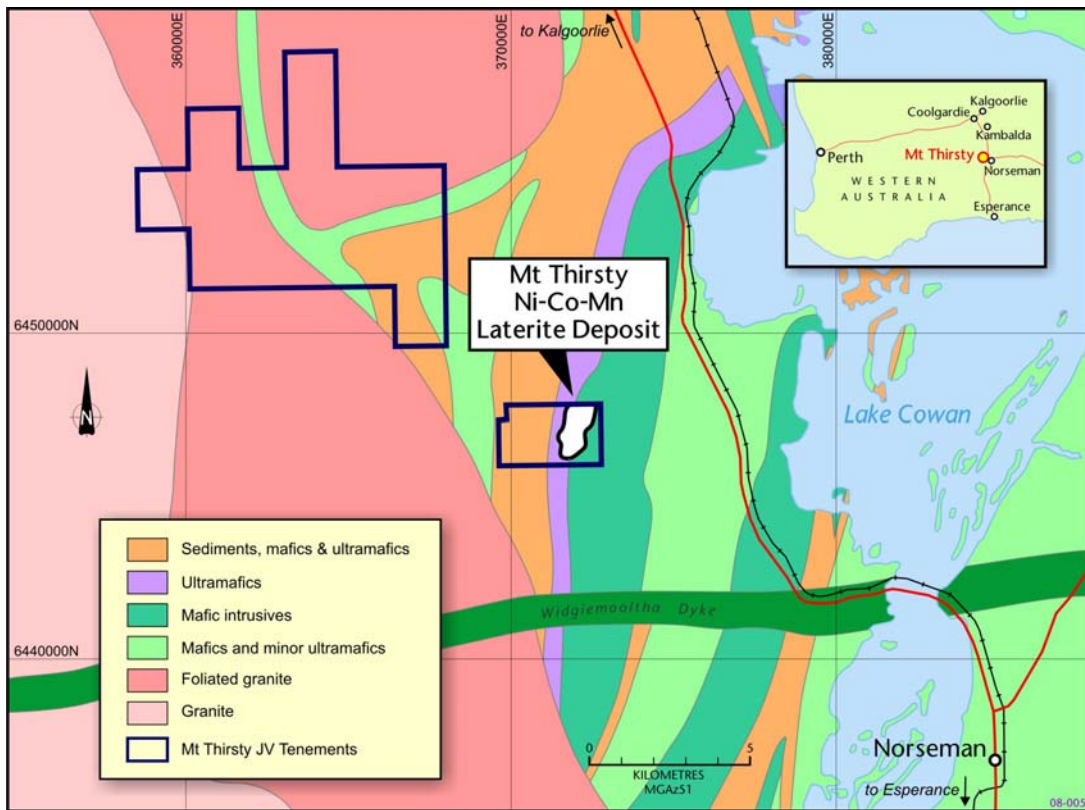
Wynbring Uranium Project (SA)

- **Infill drilling at the Pundinya prospect has yielded further significant assay results including 2m at 648ppm U₃O₈ in hole W123 from 50 to 52m and 11m at 374ppm from 41 to 52m in hole W126.**
- **Anomalous uranium assays up to 9m at 166ppm U₃O₈ intersected up to 3km down-channel from the Pundinya prospect.**
- **Broad spaced drilling to the south has defined palaeochannel sands for a further 9km down-channel to the tenement boundary.**

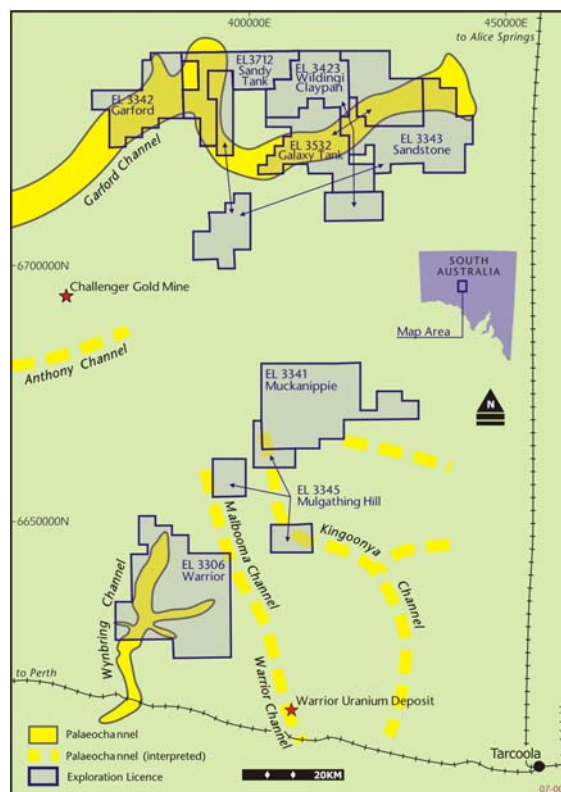
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Mt Thirsty Project Location and Regional Geology



Location of Wynbring Palaeochannel

MT THIRSTY Ni-Co-Mn PROJECT (Fission 50%)

The Mt Thirsty Cobalt-Nickel Project covering an area of 45km² is located 20km north-northwest of Norseman. Fission through its wholly owned subsidiary Meteore Metals Limited owns 50% of the project in joint venture with Barra Resources Limited.

Mt Thirsty has the potential to emerge as the world's fourth largest cobalt supplier according to the results of an ongoing metallurgical and engineering pre-feasibility study.

On conservative estimates for the first three years of production, the study found the project could immediately rank comfortably in the world's top five cobalt producers (see Figure 1).

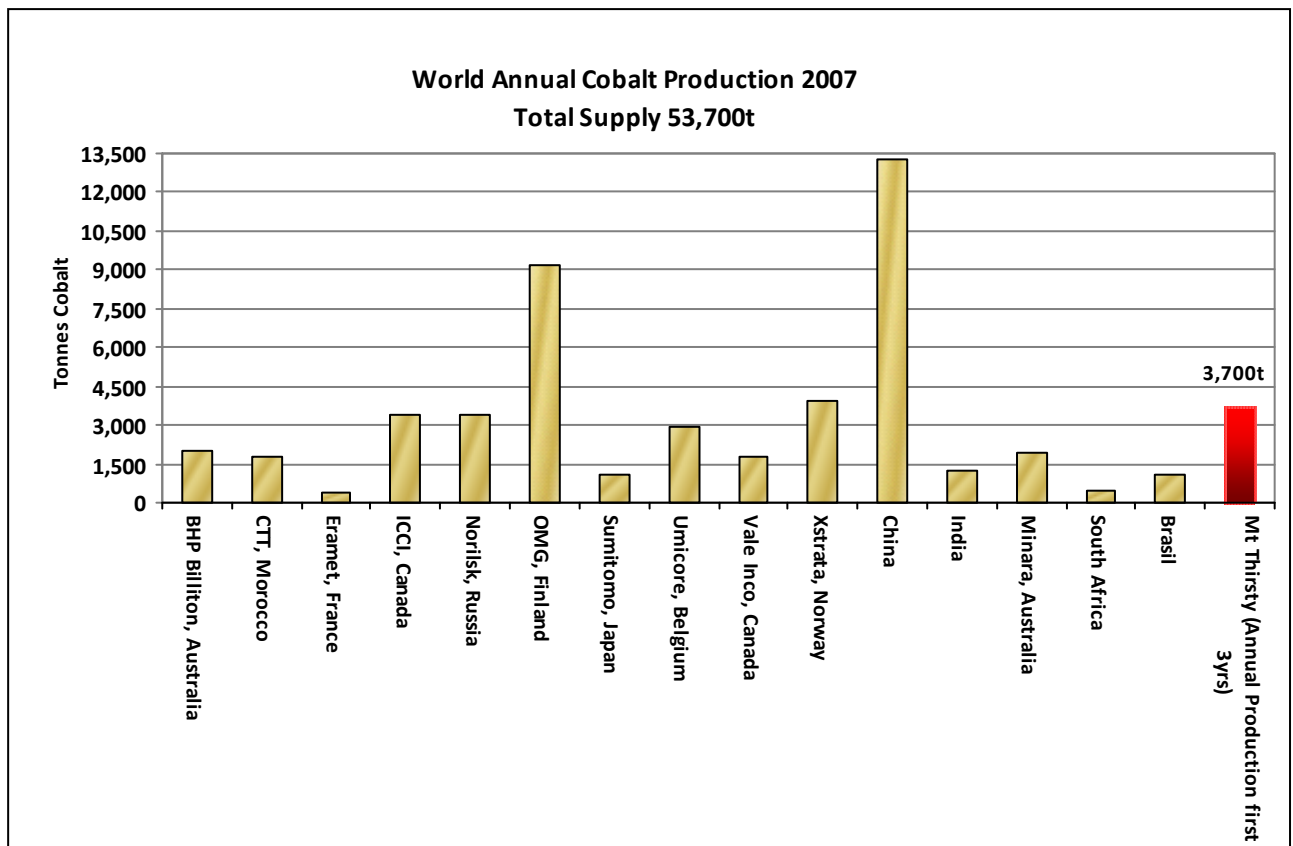


Figure 1: – World annual cobalt production 2007 compared with Mt Thirsty's forecast annual production rate for the first 3-4 years. (Sourced from the Cobalt Development Institute).

The findings are from an independent study by Simulus, a metallurgical and engineering consultancy firm, as part of ongoing pre-feasibility work on the project.

The metallurgical and engineering study found that, as a minimum, Mt Thirsty has the potential to support production of 3,700 tonnes of cobalt per annum (tpa) in its first three years (and about 2600tpa thereafter) at a throughput of 2 million tpa, ranking it around the top four or five such producers globally.

High cobalt throughput can be easily achieved early in the production schedule due to the majority of high grade ore sitting close to the surface, within 8 to 19 metres. The Joint Venture partners say this front-loads production, increases Net Present Value (NPV) and significantly shortens capital payback.

The Simulus study determined a project development strategy that builds an atmospheric acid leach plant at Mt Thirsty at a present day cost of approximately US\$400 million to produce cobalt and nickel metal together with manganese carbonate concentrate for shipping to third party refineries. The plant is versatile and is easily expanded.

Metallurgical testwork completed to date has returned impressive recoveries at low acid consumptions of between 150 and 330kg per tonne. Atmospheric leaching at moderate temperatures has returned 99% cobalt, 77.5% nickel and 98% manganese extractions at 329 kg per tonne of acid. Nickel extraction can be increased above 95% with higher acid addition. Overall recoveries were discounted to a more conservative level for financial modelling. Cobalt and manganese extractions used for modelling were 96% and 95% respectively. Nickel extraction was modelled at 90% using 450 kg/t based on extrapolated testwork data.

Cash operating costs for the project are estimated at approximately A\$100 per tonne of ore. After cobalt credits, the cash operating cost is in the lowest quartile at approximately US\$2.49 per pound of nickel.

A long-term free-on-board sulphur price of US\$50 per tonne, based on long-term price forecasting, was applied during the study.

Potential net cash flows after capital payback but excluding capital depreciation, project loan interest, royalties and income tax for the life of the project, are estimated at A\$1.65 billion.

Key findings of the study include:

- Project operating costs would be in the lower quartile – around US\$2.49 per pound of nickel after cobalt credits.
- Total capital costs estimated at US\$400 million.
- Quick 4 to 5 year capital payback with high grade ore being sourced for the first 3 years of production.
- The project ore is totally oxidised, negating the need for drilling and blasting.
- The shallow ore body is amenable to low cost, simple, conventional open pit mining.
- Acid consumption in processing would be low for atmospheric leach, at around 450kg per tonne.

While further pre-feasibility modelling remains to be completed, it is expected that the proceeds from Mt Thirsty's nickel production would cover most if not all of the mine's operating costs leaving the cobalt and manganese production credits delivering an undiluted revenue stream.

Mt Thirsty has a current JORC Inferred and Indicated Resource of 29 million tonnes at 0.56% nickel, 0.14% cobalt and 0.88% manganese, at a 0.06% cobalt cut-off, over an apparent strike of 1.3km and 0.8km width. This translates to a mine life of 15 years at a 2 million tpa throughput.

The total uncut JORC Inferred and Indicated Resource stands at 44 million tonnes at 0.52% nickel, 0.10% cobalt and 0.65% manganese, which equates to a potential 22 year mine life at a throughput rate of 2 million tpa. The deposit remains open along strike with the potential to further increase resources significantly through further inexpensive aircore drilling.

Further Potential

There is sound potential to expand the resource further south along strike to the tenement boundary, a distance of some 600m, as mineralisation remains open beyond the 6,300N section.

Future

The joint venture partners are planning to initiate a bankable feasibility study shortly, pending funding arrangements. This study is expected to be completed within 12 to 18 months.

URANIUM EXPLORATION (SOUTH AUSTRALIA)

Wynbring Project (Fission 100% uranium rights)

The Wynbring project is located within EL 3306 on the Gawler Craton approximately 100km west northwest of Tarcoola in South Australia. It covers a Tertiary palaeochannel 25km to the northwest of Toro Energy Ltd's Warrior uranium deposit.

A 95 hole 4,829m air core drilling programme was completed during the quarter and involved both close spaced infill drilling at the Pundinya prospect and broad spaced step out drilling to more accurately define the continuation of the Wynbring palaeochannel southwards from the Pundinya prospect for approx. 9km to the tenement boundary (Figure 2).

Infill drilling was carried out on a 50 by 50m spacing around higher grade intersections at the Pundinya prospect where drilling in the June quarter returned a best intersection of 5m at 854ppm U_3O_8 , including 1m at 3200ppm (0.32% U_3O_8). Best assay results from the latest 24 infill holes were 2m at 648ppm U_3O_8 in hole W123 from 50 to 52m, 11m at 374ppm from 41 to 52m in hole W126 and 7m at 368ppm from 47 to 54m in hole W120 (refer Table 1 and Figure 3). These latest results confirm the continuity of uranium mineralisation over the 400 by 250m area subjected to infill drilling. The uranium thickness - grade distribution (Figure 4) shows the higher-grade core developed on the eastern side of the channel adjacent to the redox boundary.

Step out drilling to the south, mostly on a broad 800m by 400m grid has defined the continuation of the Wynbring palaeochannel sands and the entry of a major tributary from the west (Figure 2). Anomalous downhole radiometrics and uranium assays were obtained in the fluvial channel sands for a further 3km to the south of the Pundinya prospect in the eastern tributary (Figure 5). The highest assays returned were 2m at 185ppm U_3O_8 in hole W143 from 39 to 41m and 9m at 166ppm in hole W167 from 37 to 46m. The strongly anomalous uranium assays which are mostly at and immediately below the weathering interface between oxidised and reduced channel sands may represent uranium leakage down-channel from the Pundinya prospect.

Hole W151 (Figures 2 & 5), drilled 2.5km SW of the Pundinya prospect, intersected totally oxidised channel sands in contrast to all of the other widely spaced holes drilled in this area which intersected reduced channel sands. Therefore, there is likely to be a redox front in the vicinity of W151 with the potential to host higher grade uranium mineralisation. Hole W167 referred to above is located a further 600m to the SE down-channel from W151. This area is a priority in-fill drilling target.

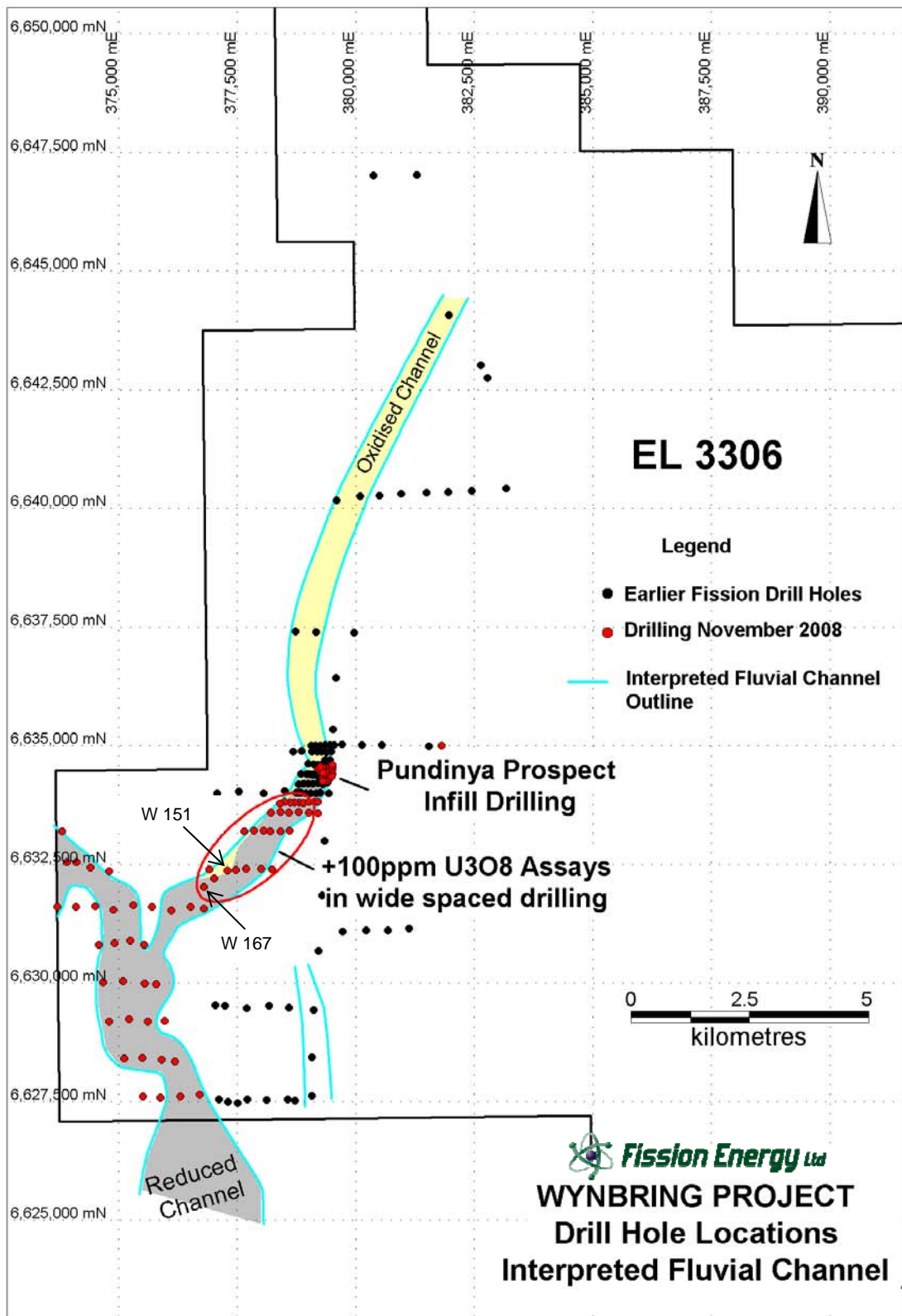


Figure 2

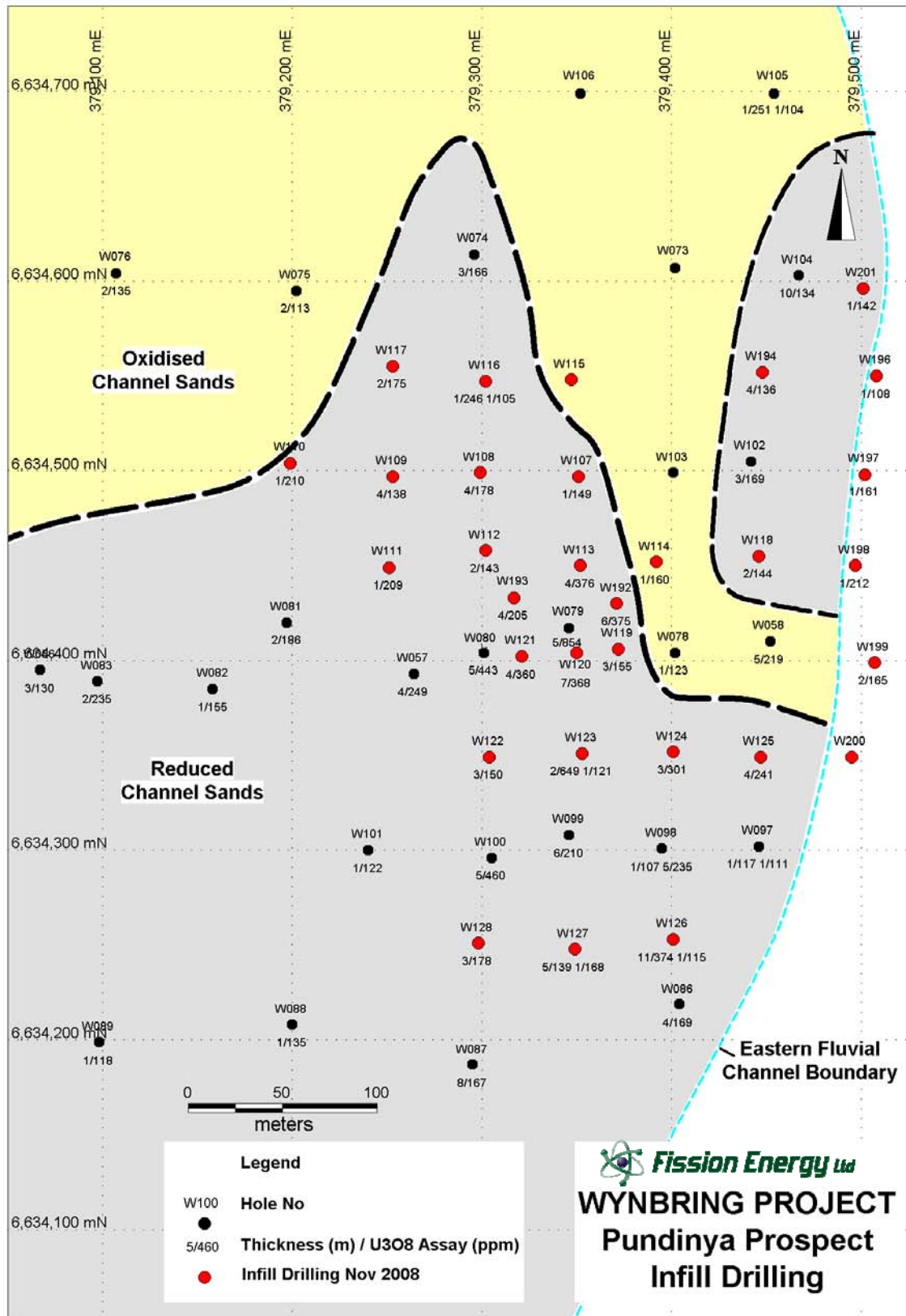


Figure 3

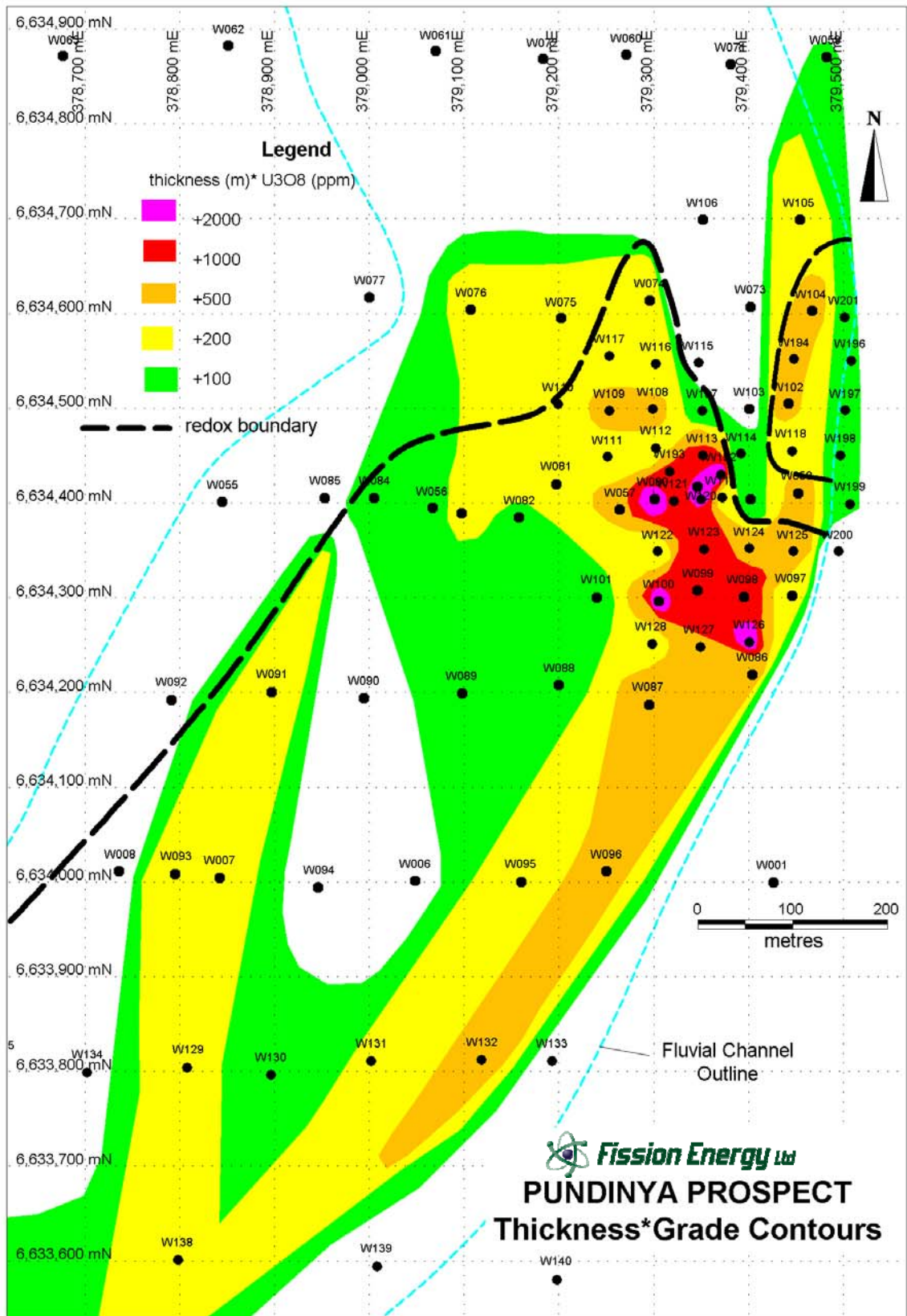


Figure 4

Table 1: Wynbring Project Air Core Drilling - Uranium Assay Results*

| Hole No | East | North | Total Depth | From | To | U ₃ O ₈ | Thickness |
|---------|--------|---------|-------------|------|----|-------------------------------|-----------|
| | m | m | m | m | m | ppm | m |
| W107 | 379351 | 6634497 | 54 | 51 | 52 | 149 | 1 |
| W108 | 379299 | 6634499 | 57 | 50 | 54 | 178 | 4 |
| W109 | 379253 | 6634497 | 54 | 48 | 52 | 138 | 4 |
| W110 | 379199 | 6634504 | 54 | 50 | 51 | 201 | 1 |
| W111 | 379251 | 6634449 | 54 | 52 | 53 | 209 | 1 |
| W112 | 379302 | 6634458 | 45 | 50 | 52 | 143 | 2 |
| W113 | 379352 | 6634450 | 54 | 48 | 52 | 376 | 4 |
| W114 | 379392 | 6634452 | 53 | 49 | 50 | 160 | 1 |
| W116 | 379302 | 6634547 | 54 | 49 | 50 | 105 | 1 |
| | | | | 51 | 52 | 246 | 1 |
| W117 | 379253 | 6634555 | 54 | 48 | 50 | 175 | 2 |
| W118 | 379446 | 6634455 | 51 | 46 | 48 | 144 | 2 |
| W119 | 379372 | 6634406 | 55 | 50 | 53 | 155 | 3 |
| W120 | 379350 | 6634404 | 57 | 47 | 54 | 368 | 7 |
| W121 | 379321 | 6634402 | 57 | 49 | 53 | 360 | 4 |
| W122 | 379304 | 6634349 | 57 | 49 | 52 | 150 | 3 |
| W123 | 379353 | 6634351 | 57 | 46 | 47 | 121 | 1 |
| | | | | 50 | 52 | 649 | 2 |
| W124 | 379401 | 6634352 | 57 | 49 | 52 | 301 | 3 |
| W125 | 379447 | 6634349 | 57 | 44 | 48 | 241 | 4 |
| W126 | 379401 | 6634253 | 57 | 38 | 39 | 115 | 1 |
| | | | | 41 | 52 | 374 | 11 |
| W127 | 379349 | 6634248 | 57 | 43 | 44 | 168 | 1 |
| W127 | | | | 47 | 52 | 139 | 5 |
| W128 | 379298 | 6634251 | 57 | 48 | 51 | 178 | 3 |
| W129 | 378808 | 6633804 | 54 | 43 | 45 | 135 | 2 |
| W130 | 378896 | 6633796 | 53 | 45 | 46 | 111 | 1 |
| W131 | 379002 | 6633811 | 54 | 43 | 44 | 100 | 1 |
| | | | | 45 | 46 | 126 | 1 |
| W132 | 379118 | 6633812 | 57 | 42 | 46 | 133 | 4 |
| | | | | 48 | 49 | 102 | 1 |
| W136 | 378497 | 6633812 | 48 | 40 | 41 | 129 | 1 |
| W138 | 378798 | 6633601 | 54 | 40 | 41 | 179 | 1 |
| | | | | 42 | 43 | 103 | 1 |

| Hole No | East | North | Total Depth | From | To | U ₃ O ₈ | Thickness |
|---------|--------|---------|-------------|------|----|-------------------------------|-----------|
| | m | m | m | m | m | ppm | m |
| W141 | 378592 | 6633592 | 51 | 44 | 45 | 106 | 1 |
| W143 | 378201 | 6633591 | 45 | 39 | 41 | 185 | 2 |
| W145 | 378192 | 6633194 | 54 | 46 | 47 | 119 | 1 |
| W146 | 378406 | 6633192 | 54 | 42 | 43 | 113 | 1 |
| W148 | 377852 | 6633209 | 54 | 40 | 41 | 110 | 1 |
| W167 | 376800 | 6632018 | 57 | 37 | 46 | 166 | 9 |
| W168 | 377010 | 6632203 | 57 | 51 | 52 | 104 | 1 |
| W192 | 379371 | 6634430 | 54 | 47 | 53 | 375 | 6 |
| W193 | 379317 | 6634433 | 57 | 49 | 53 | 205 | 4 |
| W194 | 379448 | 6634552 | 54 | 47 | 51 | 136 | 4 |
| W196 | 379508 | 6634550 | 54 | 33 | 34 | 108 | 1 |
| W197 | 379502 | 6634498 | 51 | 33 | 34 | 161 | 1 |
| W198 | 379497 | 6634450 | 54 | 32 | 33 | 212 | 1 |
| W199 | 379507 | 6634399 | 48 | 24 | 26 | 165 | 2 |
| W201 | 379501 | 6634596 | 57 | 34 | 35 | 142 | 1 |

Based on 100ppm U₃O₈ cut off over a minimum down hole thickness of 1m. All holes drilled vertical and selected portions sampled in 1m intervals for assay.

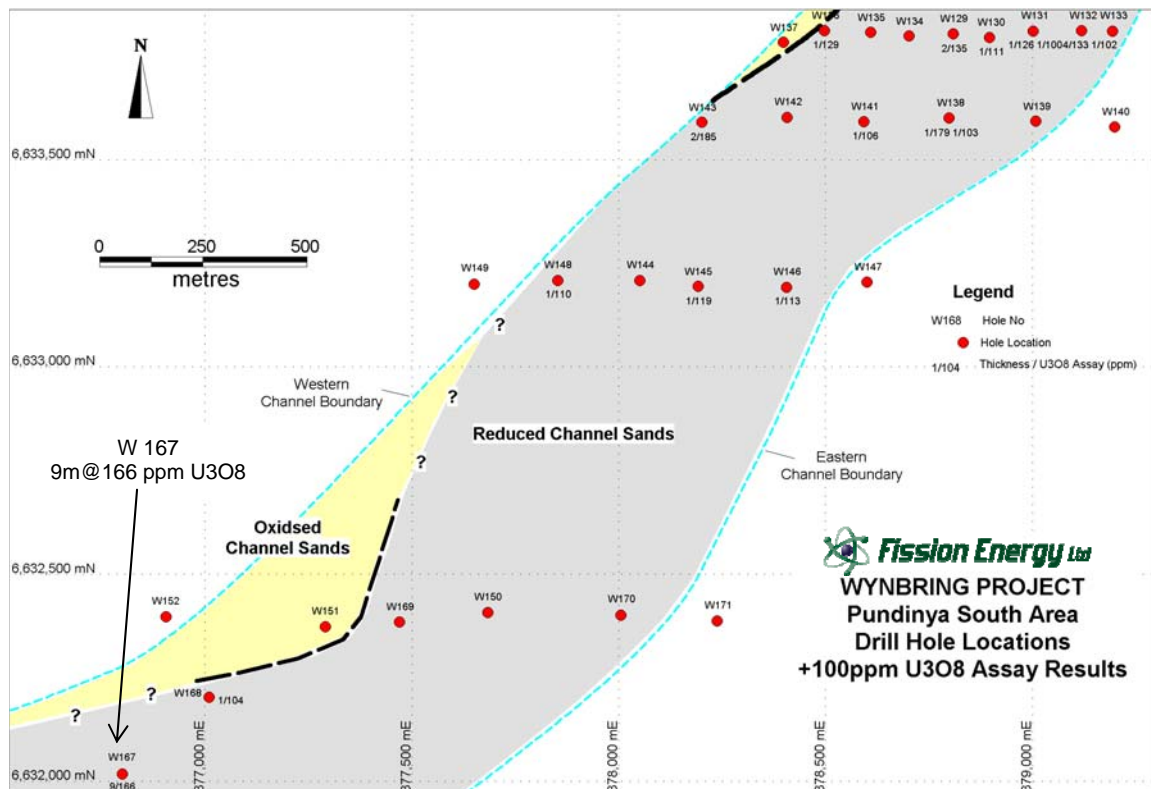


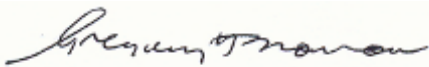
Figure 5

Parkinson Dam Project (Fission 100% uranium rights, Mega Hindmarsh earning 51%)

Fission has a joint venture with Mega - Hindmarsh Ltd, a wholly owned subsidiary of Mega Uranium Ltd of Canada to explore the Parkinson Dam Project (ELs 3307 & 3739) for uranium. The Parkinson Dam tenements, located 60 km west of Port Augusta in South Australia are held by Tasman Resources NL (ASX: TAS), and Fission Energy has the uranium rights. Tasman is currently exploring these tenements for epithermal gold mineralisation.

The area is considered prospective for unconformity - associated uranium deposits close to the contact between the Mesoproterozoic Corunna Conglomerate and the underlying Palaeoproterozoic metasedimentary rocks. Outcropping uraninite (uranium oxide) mineralisation discovered in EL 3307 by an earlier explorer was reported by Tasman in 2006.

Mega Hindmarsh is currently interpreting results from a recent airborne EM survey with a view to defining uranium drilling targets.



Greg Solomon
Executive Chairman

The interpretations and conclusions reached in this report are based on current geological theory and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for complete certainty. Any economic decisions that might be taken on the basis of interpretations or conclusions contained in this report will therefore carry an element of risk.

The information in this announcement, insofar as it relates to Mineral Exploration activities, is based on information compiled by Guy T LePage (Mt Thirsty) who is a member of the Australian Institute of Mining and Metallurgy and Michael J. Glasson (Uranium), who is a member of the Australian Institute of Geoscientists, both of whom have more than five years experience in the field of activity being reported on. Mr LePage is a Director of the Company and Mr Glasson is a consultant. Mr LePage and Mr Glasson have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr LePage, and Mr Glasson consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

It should not be assumed that the reported Exploration Results will result, with further exploration, in the definition of a Mineral Resource.

Appendix 5B

Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/2001.

Name of entity

FISSION ENERGY LTD

ABN

49 119 057 457

Quarter ended ("current quarter")

31 December 2008

Consolidated statement of cash flows

| Cash flows related to operating activities | | Current quarter \$A'000 | Year to Date (6 months) \$A'000 |
|---|--|----------------------------|---------------------------------------|
| 1.1 | Receipts from product sales and related debtors | 40 | 40 |
| 1.2 | Payments for (a) exploration and evaluation (b) development (c) production (d) administration | (538) | (720) |
| 1.3 | Dividends received | 0 | 0 |
| 1.4 | Interest and other items of a similar nature received | 71 | 168 |
| 1.5 | Interest and other costs of finance paid | 0 | 0 |
| 1.6 | Income taxes paid – GST Refunds Received | 67 | 67 |
| 1.7 | Other (provide details if material)- | | |
| | Net Operating Cash Flows | (552) | (846) |
| Cash flows related to investing activities | | | |
| 1.8 | Payment for purchases of: (a)prospects (b)equity investments (c)other fixed assets | (1,456) | (6,147) |
| 1.9 | Proceeds from sale of: (a) prospects (b)equity investments (c) other fixed assets | | (55) |
| 1.10 | Loans to other entities | (750) | (750) |
| 1.11 | Loans repaid by other entities | | |
| 1.12 | Other (provide details if material) | | |
| | Net investing cash flows | (2,206) | (6,952) |
| 1.13 | Total operating and investing cash flows (carried forward) | (2,758) | (7,798) |

| | | | |
|---|---|---------|---------|
| 1.13 | Total operating and investing cash flows (brought forward) | (2,758) | (7,798) |
| Cash flows related to financing activities | | | |
| 1.14 | Proceeds from issues of shares, options, etc. | (263) | 1,175 |
| 1.15 | Proceeds from sale of forfeited shares | | |
| 1.16 | Proceeds from borrowings | | |
| 1.17 | Repayment of borrowings | | |
| 1.18 | Dividends paid | | |
| 1.19 | Other (provide details if material) Share Application Monies | | 1,000 |
| Net financing cash flows | | (263) | 2,175 |
| Net increase (decrease) in cash held | | (3,021) | (5,623) |
| 1.20 | Cash at beginning of quarter/year to date | 4,927 | 7,529 |
| 1.21 | Exchange rate adjustments to item 1.20 | 0 | 0 |
| 1.22 | Cash at end of quarter | 1,906 | 1,906 |

**Payments to directors of the entity and associates of the directors
Payments to related entities of the entity and associates of the related entities**

| | | Current quarter \$A'000 |
|------|--|----------------------------|
| 1.23 | Aggregate amount of payments to the parties included in item 1.2 | 170 |
| 1.24 | Aggregate amount of loans to the parties included in item 1.10 | 0 |

1.25 Explanation necessary for an understanding of the transactions

Management Fees, as per agreement, were paid during the quarter to a company of which Mr GH Solomon and Mr DH Solomon are directors.
Bona-fide reimbursement of expenses for the period to 31 December 2008
Directors Fees and Superannuation paid during the period.
Consulting fees were paid during the quarter to a company of which Mr GT LePage is a director.
Share placement fees were paid during the quarter to a company of which Mr GT LePage is a director.

Non-cash financing and investing activities

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

| |
|--|
| |
|--|

2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

| |
|----------------|
| Not applicable |
|----------------|

Financing facilities available

Add notes as necessary for an understanding of the position.

| | Amount available \$A'000 | Amount used \$A'000 |
|---------------------------------|-----------------------------|------------------------|
| 3.1 Loan facilities | Nil | Nil |
| 3.2 Credit standby arrangements | Nil | Nil |

Estimated cash outflows for next quarter

| | \$A'000 |
|--------------------------------|------------|
| 4.1 Exploration and evaluation | 250 |
| 4.2 Development | |
| Total | 250 |

Subsequent to end of quarter additional capital has been raised to fund part of this expenditure.

Reconciliation of cash

| Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows. | Current quarter \$A'000 | Previous quarter \$A'000 |
|---|----------------------------|-----------------------------|
| 5.1 Cash on hand and at bank | 1,906 | 1,177 |
| 5.2 Deposits at call | - | 3,750 |
| 5.3 Bank overdraft | - | - |
| 5.4 Other (provide details) | - | - |
| Total: cash at end of quarter (item 1.22) | 1,906 | 4,927 |

Changes in interests in mining tenements

| | Tenement reference | Nature of interest (note (2)) | Interest at beginning of quarter | Interest at end of quarter |
|-----|---|-------------------------------|----------------------------------|----------------------------|
| 6.1 | Interests in mining tenements relinquished, reduced or lapsed | | | |
| 6.2 | Interests in mining tenements acquired or increased | | | |

Issued and quoted securities at end of current quarter

Description includes rate of interest and any redemption or conversion rights together with prices and dates.

| | | Total number | Number quoted | Issue price per security (see note 3) (cents) | Amount paid up per security (see note 3) (cents) |
|------|---|---|---------------------------------|---|--|
| 7.1 | Preference +securities (description) | NOT APPLICABLE | | | |
| 7.2 | Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs, redemptions | | | | |
| 7.3 | +Ordinary securities | 119,280,258 | 83,860,258 | | |
| 7.4 | Changes during quarter (a) Increases through issues (b) Increase release from Escrow (b) Decreases through returns of capital, buy-backs | 6,250,000 | 6,250,000 | 16 cents | 16 cents |
| 7.5 | +Convertible debt securities (description) | NOT APPLICABLE | | | |
| 7.6 | Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted | | | | |
| 7.7 | Options | 1,000,000 40,999,992 1,000,000 500,000 | NIL 28,499,992 NIL NIL | <i>Exercise price</i> 20 cents 20 cents 20 cents 19 cents | <i>Expiry date</i> 18 June 2010 28 February 2011 31 March 2011 26 May 2013 |
| 7.8 | Issued during quarter | 500,000 | NIL | 19 cents | 26 May 2013 |
| 7.9 | Exercised during quarter | | | | |
| 7.10 | Expired during quarter | 500,000 | NIL | 20 cents | 31 March 2011 |
| 7.11 | Debentures (totals only) | NOT APPLICABLE | | | |
| 7.12 | Unsecured notes (totals only) | NOT APPLICABLE | | | |

Compliance statement

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 4).
- 2 This statement does give a true and fair view of the matters disclosed.

AARON PHILIP GATES
JOINT COMPANY SECRETARY/CFO
Date: 29 January 2009

Notes

- 1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.
- 2 The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities.** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- 4 The definitions in, and provisions of, *AASB 1022: Accounting for Extractive Industries* and *AASB 1026: Statement of Cash Flows* apply to this report.
- 5 **Accounting Standards** ASX will accept, for example, the use of International Accounting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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