



Report for the Quarter Ending 31st December, 2010

31st January, 2011

Highlights

- ◆ Completion of legal documentation for a second Joint Venture to explore and develop the iron ore potential of four tenements covering approximately 390km² in the Midwest region of WA. Potential for Direct Shipping Ore (DSO) with grades of up to 67.3% Fe has been identified within the tenements. Statutory formalities are currently being completed prior to commencing an extensive RC drilling program of approximately 5,000 metres with the objective of defining an initial Inferred JORC compliant resource and to investigate the potential for additional iron ore resources.
- ◆ Encouraging high grade gold, silver and copper results from initial north Queensland drilling program including;
 - Two metres grading 10.1g/t gold, 33g/t silver and 0.6% copper at a depth of 21 metres.
 - Three metres grading 2.04g/t gold and 6g/t silver at a depth of 45 metres, three metres grading 7.16g/t gold, 12.6g/t silver and 0.21% copper at a depth of 63 metres (including a 1 metre interval grading 20.3g/t gold, 35g/t silver and 0.6% copper) and two metres grading 1.3g/t gold, 3.2g/t silver at 152 metres.
 - One metre grading 8.1g/t gold at a depth of 36 metres.
 - Two metres grading 0.93g/t gold at 20 metre depth, four metres grading 4.65g/t gold and 69.75g/t silver at a depth of 33 metres (including 1 metre at 14.85g/t gold and 223g/t silver), and one metre grading 4.66g/t gold and 9g/t silver at 52 metre depth.
 - Two metres grading 6.45g/t gold and 1.35g/t silver at a depth of 13 metres.
 - Two metres grading 3.48g/t gold and 4.66g/t silver at a depth of 14 metres.
- ◆ Commencement of drilling programs targeting base metal and uranium mineralisation within the PepinNini Sinosteel Joint Venture tenements of the Curnamona Province Project.
- ◆ At the end of the quarter the Company held \$3.4 million in cash.



WESTERN AUSTRALIA

Robinson Range Iron Ore Project

During the quarter the Company finalised a Joint Venture Agreement with Grosvenor Gold Pty Limited (Grosvenor) and Fe Limited (ASX:FEL) to explore and develop the iron ore potential of four tenements covering approximately 390km² in the Midwest region of WA. Together with the Joint Venture Agreement announced last August the Company now has an interest in seven tenements covering approximately 700km². A 40kms strike length of the Robinson Range Formation considered highly prospective for iron ore has been identified within the tenements.

The Joint Venture Agreements give effect to a Heads of Agreement signed in December 2007 and are essentially on the same terms and conditions contained within that agreement. PepinNini will hold a 50% interest in the iron ore contained within three tenements and a 40% interest in the iron ore contained within the other four tenements. PepinNini will manage exploration on behalf of the Joint Venture partners.

The formalisation of the Joint Ventures facilitates the exploration and development of the identified Direct Shipping Ore (DSO) potential of the tenements. Twelve prospect areas with surface samples containing >60% Fe have been identified for priority investigation within tenements explored by PepinNini during the Farm-in period.

Statutory formalities are currently being completed prior to commencing an extensive RC drilling program of approximately 5,000m with the objective of defining an initial Inferred JORC compliant resource and to investigate the potential for additional iron ore resources.

The Robinson Range Iron Ore Project (Project) is situated in the Midwest Region of Western Australia approximately 550kms north east of the Oakajee Port and Rail development at Geraldton. The Midwest Region has emerged as Western Australia’s next major iron ore province (second to the Pilbara).

The project covers part of the Bryah-Padbury Basin and contains approximately 40km strike length of Robinson Range Formation considered highly prospective for iron ore. The sequence includes banded iron and granular iron formation units which variably outcrop within the licences (Figure 2). Supergene enriched Hematite and Hematite-Goethite mineralisation associated with these units form the primary target of the project.

Surface sampling and mapping at the twelve prospect sites investigated during the farm-in period confirmed that high grade iron mineralisation occurs within the project area. Rock chip sample results of up to 67.3% Fe have been returned with all areas sampled returning some values in excess of 60% Fe. In total 179 samples returned results in excess of 55% Fe.

The JV intends to undertake reverse circulation drilling across at least seven prospects where iron mineralisation is outcropping and where potential extensions to the mineralisation may be concealed beneath shallow alluvial sediments.



Figure 1. Location of the Robinson Range Iron Ore Project.

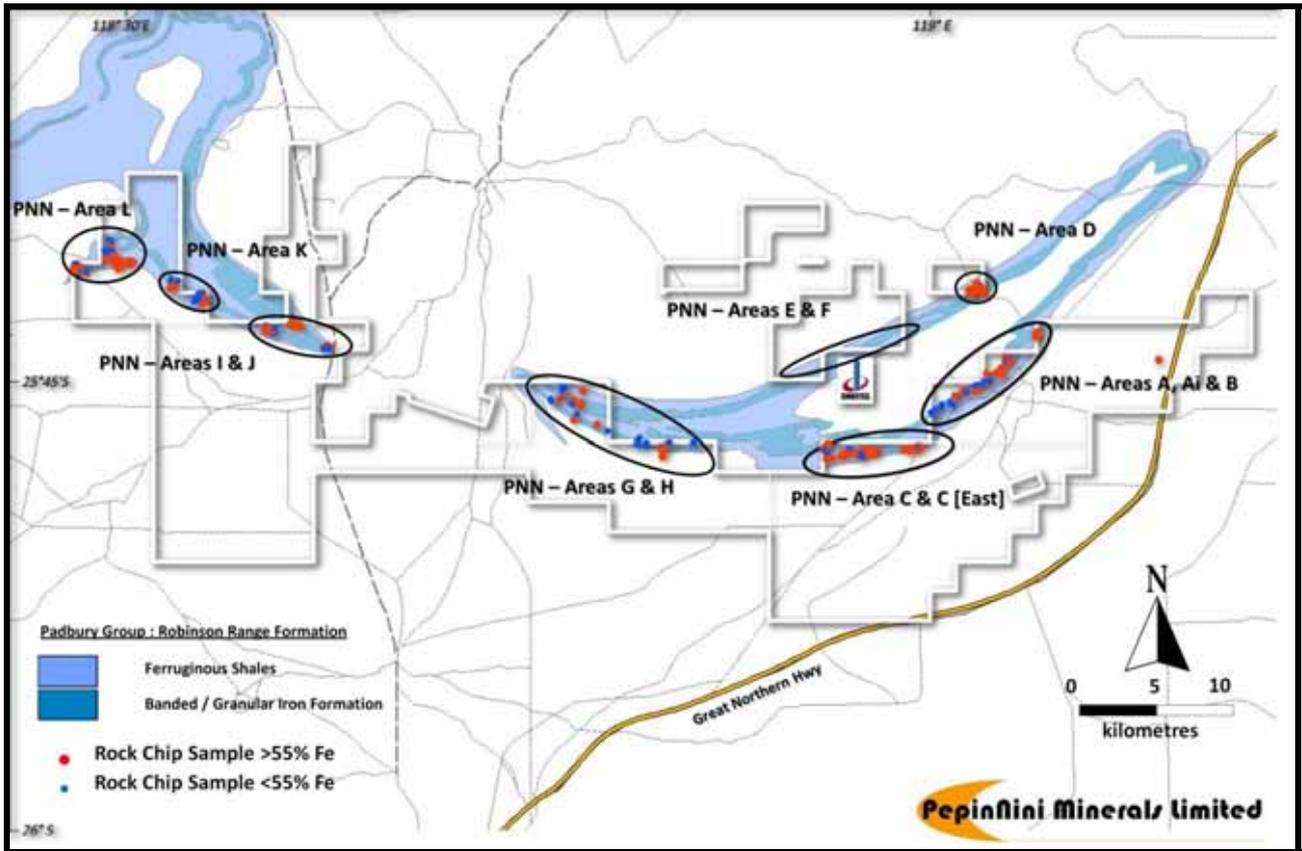


Figure 2. Robinson Range Iron Ore Project - Prospect Location & Surface Sample Results

NORTH QUEENSLAND

During the quarter a reverse circulation (RC) drilling program of 25 boreholes for a total of 3,256 metres was completed at the Forsayth and Percyville Projects in north Queensland. The drilling program was designed to investigate high grade gold, silver and copper mineralisation identified in surface outcrop or within shallow historic workings from EPM1547 'The Return' and over portions of EPM15440 'Percyville'.

Encouraging results have been reported for both project areas and include the following high grade gold, silver and copper intersections;

- ◆ Borehole RC10RT004 intersected a 2 metre interval grading 10.1g/t gold, 33g/t silver and 0.6% copper at a depth of 21 metres.
- ◆ Borehole RC10RT010 intersected a 3 metre interval grading 2.04g/t gold and 6g/t silver at a depth of 45 metres, a 3 metre interval grading 7.16g/t gold, 12.6g/t silver and 0.21% copper at a depth of 63 metres (including a 1 metre interval grading 20.3g/t gold, 35g/t silver and 0.6% copper) and a 2 metre interval grading 1.3g/t gold, 3.2g/t silver at 152 metres.

- ◆ Borehole RC10RT013 intersected a 1 metre interval grading 8.1g/t gold at a depth of 36 metres.
- ◆ Borehole RC10PV003 intersected a 2 metre interval grading 0.93g/t gold at 20 metre depth, a 4 metre interval grading 4.65g/t gold and 69.75g/t silver at a depth of 33 metres (including 1 metre at 14.85g/t gold and 223g/t silver), and a 1 metre interval grading 4.66g/t gold and 9g/t silver at 52 metre depth.
- ◆ Borehole RC10PV006 intersected a 2 metre interval grading 6.45g/t gold and 1.35g/t silver at a depth of 13 metres.
- ◆ Borehole RC10PV007 intersected a 2 metre interval grading 3.48g/t gold and 4.66g/t silver at a depth of 14 metres.

These encouraging drill intersections are interpreted to represent the lateral and vertical extensions of mineralised zones detected on the surface

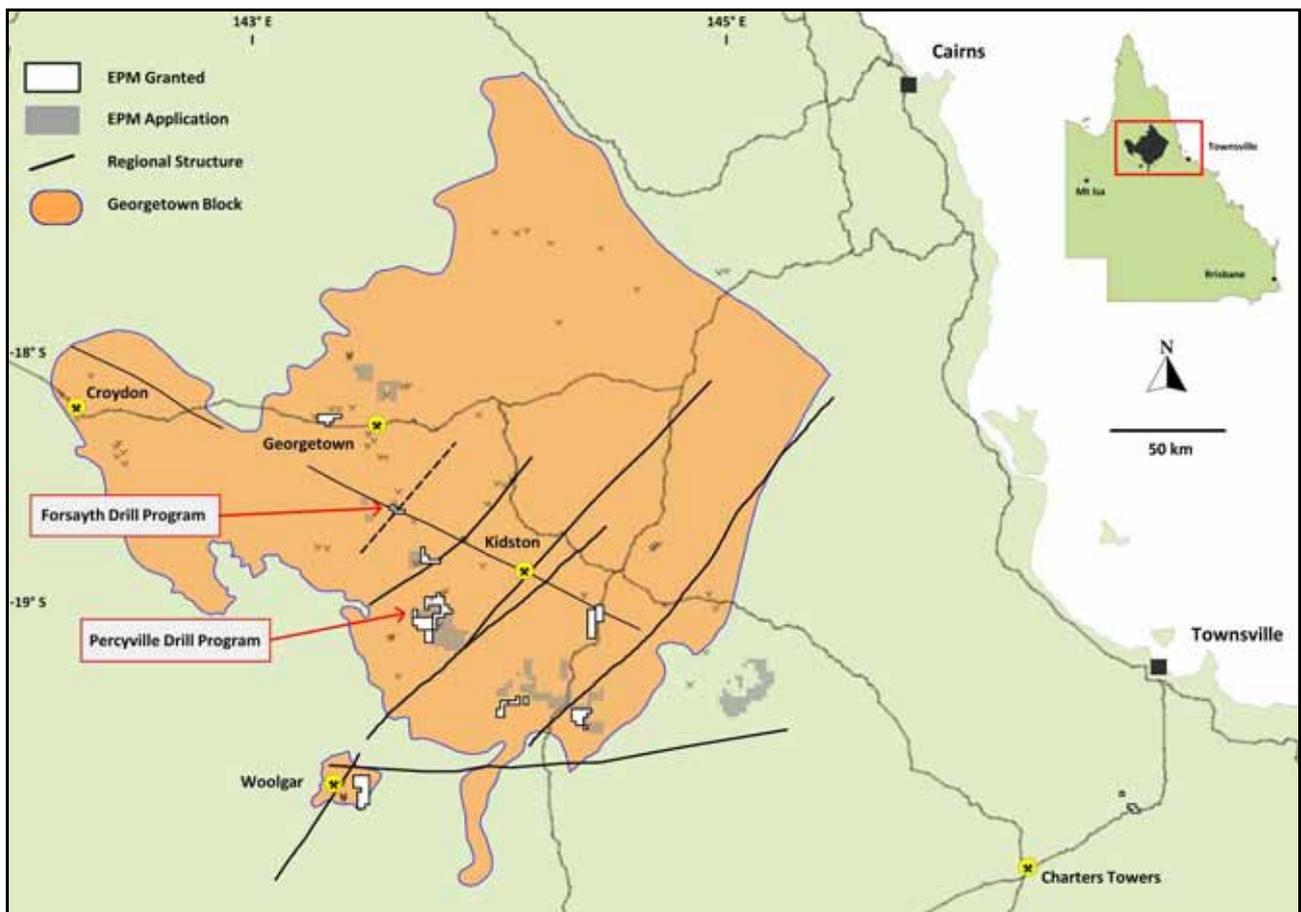


Figure 3. Location of Drilling Programs North Queensland



Figure 4. Drilling in Progress – Spring Valley Prospect EPM 15440, October, 2010.

SOUTH AUSTRALIA

Musgrave Province Project

PepinNini Minerals Limited is currently undertaking exploration programs designed to target nickel-copper sulphide mineralisation and base metal mineralisation in the Musgrave Province, South Australia. PepinNini has four granted exploration licences (EL3536, EL3931, EL4048, EL4587) covering ~5,669 km² and six exploration licence applications (ELA118/96, ELA185/96, ELA278/82, ELA491/94, ELA367/09, ELA368/09) covering ~3,932 km² (Fig. 5). PepinNini subsidiary PepinNini Resources Pty Limited is earning a 51% interest in EL3931 and ELA278/82 and ELA491/94 under a Farm-in and Joint Venture Agreement with Rio Tinto Ltd subsidiary Rio Tinto Exploration Pty Limited.

During the Quarter, exploration activity focused on EL3931 'Woodroffe' and EL4048 'Mt Caroline', predominantly within green-field areas not previously explored. Exploration activities primarily targeted base metal mineralisation within Birksgate Complex metavolcanic and metasedimentary

sequences, shear-hosted gold mineralisation and nickel-copper sulphide mineralisation within Giles Complex mafic-ultramafic rocks. The Giles Complex is considered to be highly prospective for Ni-Cu sulphide and PGE mineralisation following the discovery of the Nebo-Babel deposit in Western Australia by WMC (392Mt @ 0.3%Ni and 0.33%Cu).

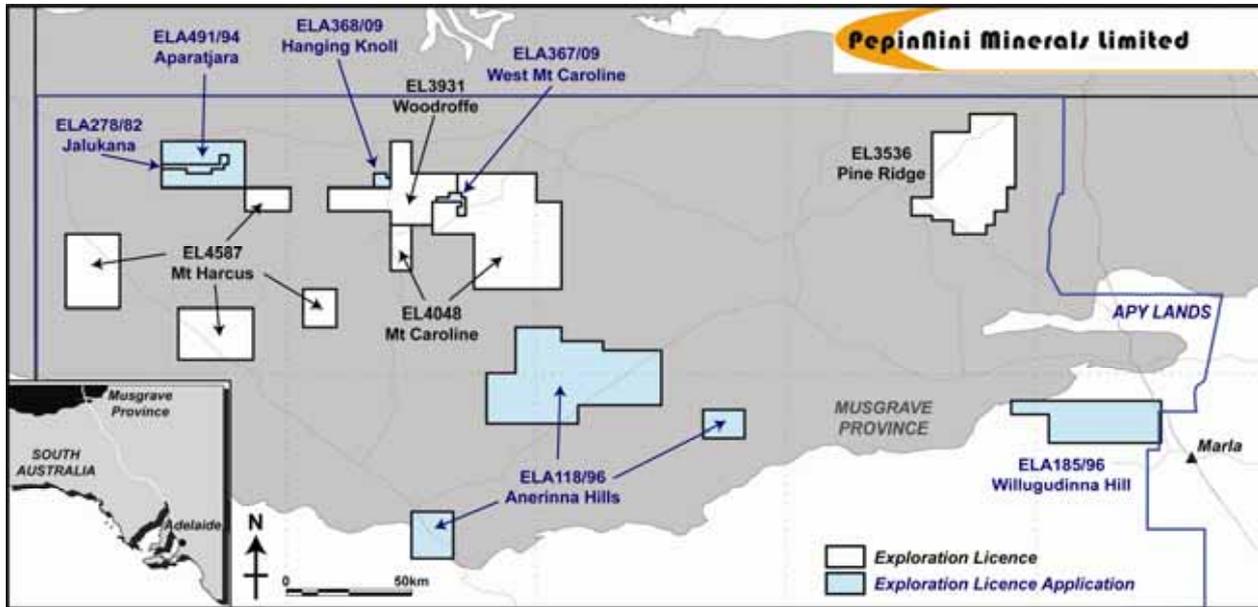


Figure 5. PepinNini Minerals Limited tenement distribution in the Musgrave Province, SA.

Exploration Licence EL3931 – Woodroffe

During the quarter, 139 vacuum boreholes were completed (WVC1045-1183), totaling 1,058m. These reconnaissance boreholes were drilled at ~400m spacing (~250m line spacing) testing predominantly Birksgate Complex rocks for base metal mineralisation. Infill drilling was also conducted within the basal sequences of the Giles Complex Caroline Intrusion and adjacent to biogeochemical survey sites.

Assay results from 320 samples (WVC873-1183) were received during the reporting period. Maximum nickel and copper assay results have been recorded over the interpreted basal units of the Caroline Intrusion, including 850ppm Ni, 325ppm Cu, 400ppm Co in WVC1173 and 700ppm Ni, 550ppm Cu, 310ppm Co in WVC1176. These results confirm the prospectivity for Ni-Cu sulphide mineralisation in Giles Complex mafic-ultramafic rocks. A total of 1,183 vacuum boreholes have now been completed within EL3931, totaling 10,204.6m (Fig. 6).

Assay results from 129 core samples from 4 diamond boreholes (DD10WOD013 – DD10WOD016) were received during the quarter. Anomalous zinc concentrations (up to 800ppm) were recorded in graphitic schist units of the Birksgate Complex in borehole DD10WOD014. Graphitic units intersected in the borehole are associated with highly heterogeneous metavolcanic and metasedimentary units which can be associated with Broken Hill-style Zn-Pb-Ag mineral systems elsewhere in Proterozoic Australia. Diamond boreholes collared within the basal units of the Giles Complex Caroline Intrusion continue to return anomalous assays, including 0.12m @ 1800ppm Ni, 2160ppm Cr from 51.2m in DD10WOD015. These results further highlight the potential for Giles Complex rocks to host Ni-Cu sulphide mineralisation. A total of 16 diamond boreholes have now been completed within EL3931, totaling 3,904.14m (Fig. 6).

Exploration Licence EL4048 – Mt Caroline

During the quarter exploration activities within EL4048 were focused within the mafic-ultramafic Giles Complex Caroline Intrusion and along the Mann Fault Zone. Seventy four vacuum boreholes were completed (VC859-932) for 709.5m and two diamond boreholes were completed (DD10CAR021 and DD10CAR022) for 434.1m. Assay results from 75 vacuum samples (VC859-932) and 51 diamond core samples (DD10CAR021 & DD10CAR022) were received during the quarter. Maximum vacuum drilling assay results were returned from the eastern Caroline Intrusion and included 400ppm Ni and 350ppm Cu (VC883). A total of 930 vacuum boreholes (for 10,304.85m) and 22 diamond boreholes (for 8,364.87m) have now been completed within EL4048.

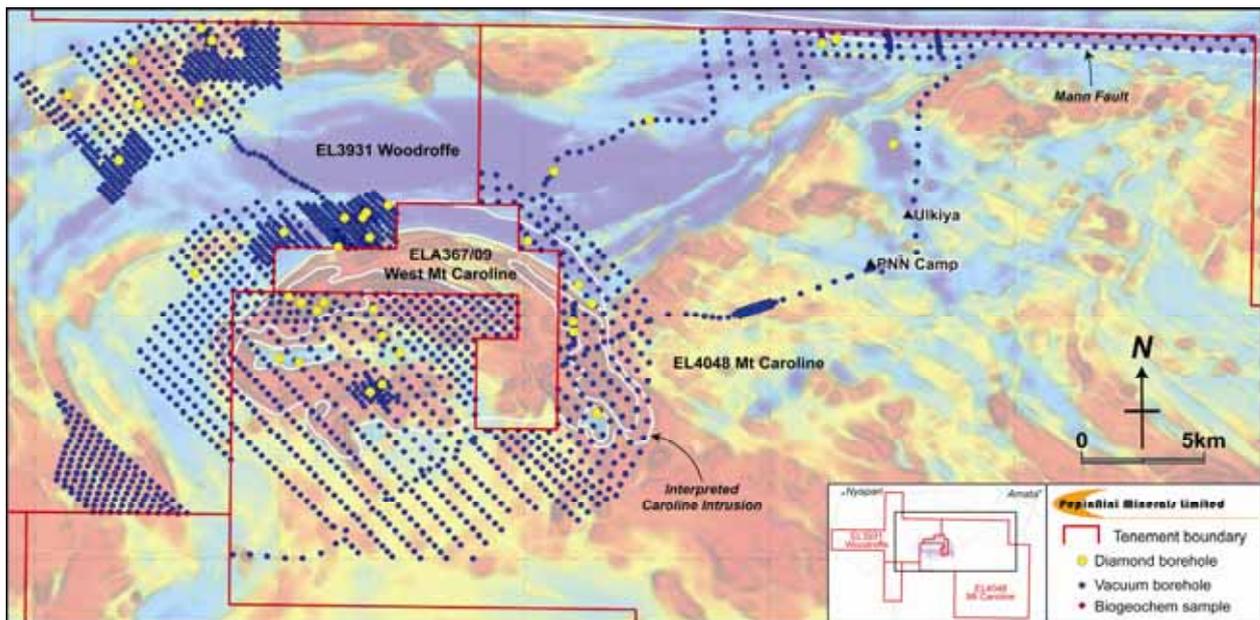


Figure 6. Diamond and vacuum borehole localities, EL3931 Woodroffe and EL4048 Mt Caroline.

Curnamona Province Project

Exploration within the Curnamona Province Project area, which includes the Crocker Well Uranium Deposit, is being managed by Sinosteel PepinNini Curnamona Management Pty Ltd (SPCM) on behalf of the Joint Venture partners Sinosteel Corporation (60%) and PepinNini Minerals (40%).

A drilling program of four deep precollared diamond boreholes to investigate priority drill targets defined by ground gravity data over EL3587 (Scott Hill) commenced during the quarter. Drilling operations were affected by inclement weather and difficult drilling conditions. A precollar for borehole DD10SH001 has been completed. Borehole DD10SH002 was stopped on 21st December, 2010 at a depth of 480.6metres. Borehole DD10SH002 failed to intersect significant lithological or geological variation to explain the defined gravity target and will be deepened when drilling recommences in early February, 2011 when weather conditions are expected to be more amenable.

Inclement weather conditions also affected the progress of an extensive aircore drilling program being undertaken within EL4239 (Kalabity) to investigate uranium and base metal targets. During the quarter 76 boreholes were completed at three target areas for 1,856metres of drilling. Handheld spectrometer readings of drill cuttings suggest anomalous uranium values are present. A total of 943 drill samples have been submitted for assay with results awaited.

Heritage Clearances, postponed due to inclement weather conditions, are currently being re-organised for the remaining seven target areas to facilitate the completion of the aircore drill program.

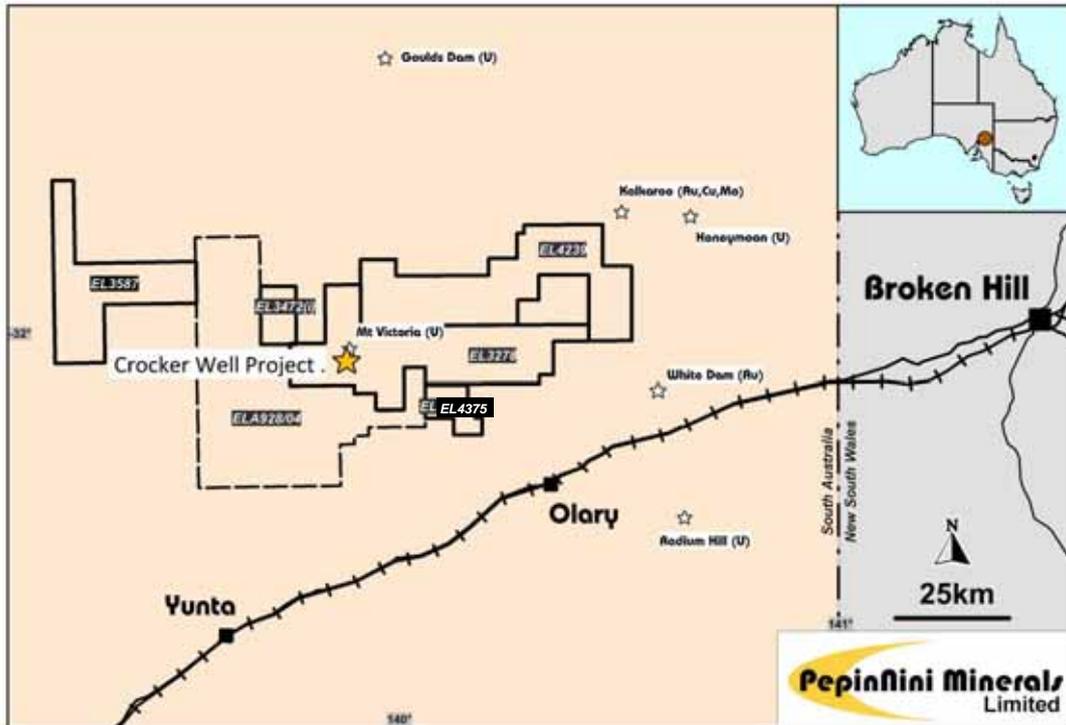


Figure 7. Curnamona Province Project Tenement Location Plan

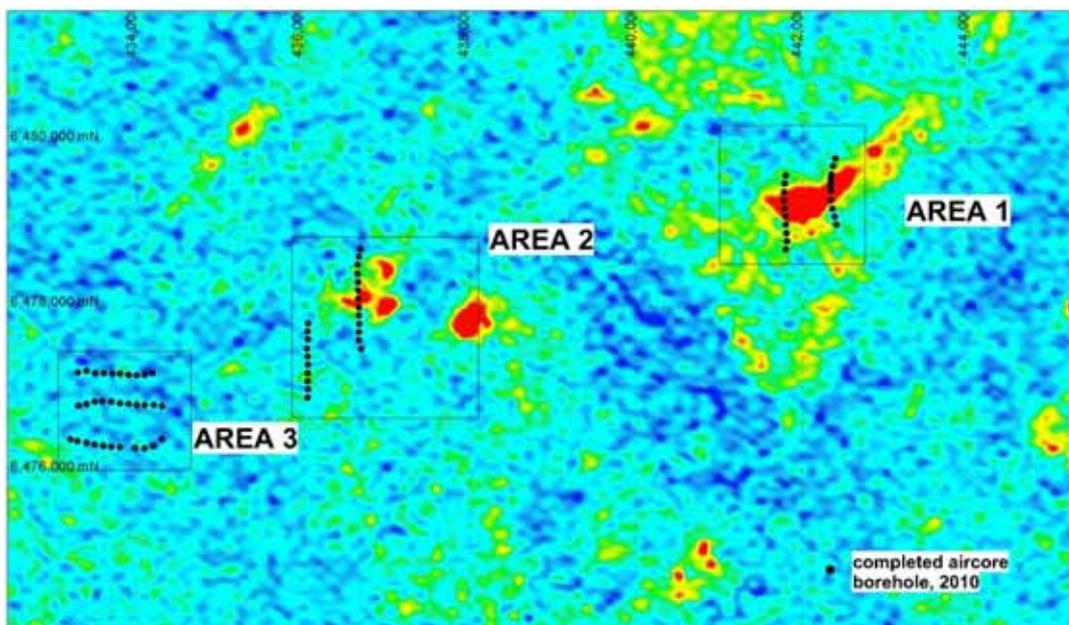


Figure 8. Completed aircore boreholes on U-channel airborne radiometrics EL4239 (Kalabity)

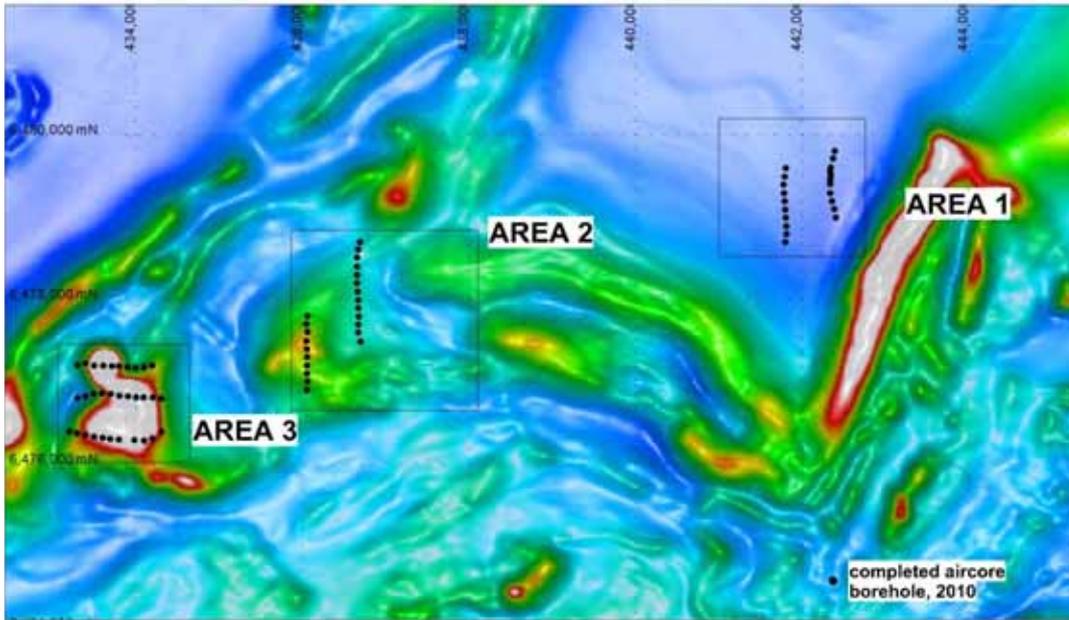


Figure 9. Completed aircore boreholes on RTP airborne magnetics EL4239 (Kalabity)

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Norman Kennedy BSc MAusIMM. Norman Kennedy is the Chairman and Managing Director of PepinNini Minerals Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Norman Kennedy consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

For further information please contact:

Mr Norman Kennedy
Chairman and Managing Director, PepinNini Minerals Limited
Phone: (08) 8218 5000

Note: Additional information on PepinNini Minerals Limited can be found on the website:
www.pepinnini.com.au

Appendix 5B

Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/2001, 01/06/10.

Name of entity

PepinNini Minerals Limited

ABN

55 101 714 989

Quarter ended ("current quarter")

December 2010

Consolidated statement of cash flows

	Current quarter \$A'000	Year to date (..6.. months) \$A'000
Cash flows related to operating activities		
1.1 Receipts from product sales and related debtors	13	35
1.2 Payments for (a) exploration & evaluation (b) development (c) production (d) administration	(907) (523)	(1,989) (739)
1.3 Dividends received		
1.4 Interest and other items of a similar nature received	70	154
1.5 Interest and other costs of finance paid		
1.6 Income taxes (paid)/refund		
1.7 Other (Government Grants)	3	8
Net Operating Cash Flows	(1,344)	(2,531)
Cash flows related to investing activities		
1.8 Payment for purchases of: (a) prospects (b) equity investments (c) other fixed assets		
1.9 Proceeds from sale of: (a) prospects (b) equity investments (c) other fixed assets		
1.10 Loans to other entities		
1.11 Loans repaid by other entities		
1.12 Other (provide details if material)		
Net investing cash flows	0	0
1.13 Total operating and investing cash flows (carried forward)	(1,344)	(2,531)

+ See chapter 19 for defined terms.

Appendix 5B
Mining exploration entity quarterly report

1.13	Total operating and investing cash flows (brought forward)	(1,344)	(2,531)
Cash flows related to financing activities			
1.14	Proceeds from issues of shares, options, etc.		
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)		
	Net financing cash flows	0	0
	Net increase (decrease) in cash held	(1,344)	(2,531)
1.20	Cash at beginning of quarter/year to date	4,695	5,882
1.21	Exchange rate adjustments to item 1.20		
1.22	Cash at end of quarter	3,351	3,351

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	115
1.24	Aggregate amount of loans to the parties included in item 1.10	

1.25 Explanation necessary for an understanding of the transactions

Within Item 1.2

1. Managing Director, Administration Director and non-executive directors' remuneration.....	\$106,783.00
2. Managing Director and Administration Director Superannuation.....	\$8,214.00

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

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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

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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		
3.2	Credit standby arrangements		

+ See chapter 19 for defined terms.

Estimated cash outflows for next quarter

		\$A'000
4.1	Exploration and evaluation	800
4.2	Development	-
4.3	Production	-
4.4	Administration	200
Total		1,000

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	1,351	695
5.2 Deposits at call	2,000	4,000
5.3 Bank overdraft		
5.4 Other (provide details)		
Total: cash at end of quarter (item 1.22)	3,351	4,695

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	EPM 15170	Surrender	6 sub-blocks	0 sub-blocks
	EPM 15990	Surrender	45 sub-blocks	0 sub-blocks
	EPM 16289	Surrender	9 sub-blocks	0 sub-blocks
6.2 Interests in mining tenements acquired or increased	EPM 17879	Granted	0 sub-blocks	18 sub-blocks
	EPM 18168	Granted	0 sub-blocks	11 sub-blocks
	EPM 18979	Application	0 sub-blocks	43 sub-blocks
	E51/1033	Acquired 40%	0 blocks	53 blocks
	E52/1613	Acquired 40%	0 blocks	30 blocks
	E52/1670	Acquired 40%	0 blocks	9 blocks
	E52/1672	Acquired 40%	0 blocks	35 blocks

+ See chapter 19 for defined terms.

Appendix 5B
Mining exploration entity quarterly report

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 <i>(description)</i>				
7.2 Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs, redemptions				
7.3 *Ordinary securities	78,202,499	78,202,499	N/A	N/A
7.4 Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs				
7.5 *Convertible debt securities <i>(description)</i>				
7.6 Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted				
7.7 Options <i>(description and conversion factor)</i>				
7.8 Issued during quarter				
7.9 Exercised during quarter				
7.10 Expired during quarter	(600,000)	(600,000)	35 to 138 cents	Employee options expired
7.11 Debentures <i>(totals only)</i>				
7.12 Unsecured notes <i>(totals only)</i>				

+ See chapter 19 for defined terms.

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 /does not* (~~delete one~~) give a true and fair view of the matters disclosed.



Sign here:Date: .. **Monday 31st January 2011**....
(Director/Company secretary)

Print name: ... **Rebecca Holland-Kennedy**.....

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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+ See chapter 19 for defined terms.