



Report for the Quarter Ending 31st December, 2009

28th January, 2010

Highlights

- ◆ Initial assay results from the vacuum drilling within EL4048 and EL3931 located in the Musgrave province of South Australia have defined a number of encouraging anomalies that have increased the perceived prospectivity of the northern parts of the Giles Complex mafic-ultramafic Caroline Intrusion. Nickel and copper anomalies coincide with a region of low magnetic resonance which is interpreted to reflect relatively unevolved (low Fe) and potentially Ni-Cu-rich mafic-ultramafic rocks.
- ◆ Nine hundred and thirty one shallow vacuum boreholes, totaling 10,252.05m, have now been completed within EL4048 and EL3931. Nickel, copper and cobalt geochemical anomalies have been identified over the Caroline Intrusion, including 81 samples ≥ 230 ppm Ni (max. 1880ppm); 83 samples ≥ 160 ppm Cu (max. 950ppm); and 83 samples ≥ 65 ppm Co (max. 1660ppm)..
- ◆ A drilling program designed to investigate other regional uranium prospects in the vicinity of Crocker Well commenced in November. Five diamond holes have been completed at the Mt Victoria Uranium Deposit and 23 RC boreholes have been completed at the Becaroo, Anomaly A and NE Extension Prospects located within EL 4239 and EL3278.
- ◆ The joint venture alliance between Sinosteel Corporation and PepinNini Minerals Limited has decided to delay the finalisation of a BFS until there is a substantial sustained increase in the price of uranium and a substantial sustained improvement in the American dollar. Preliminary financial modeling of the Crocker Well Uranium Project undertaken as part of a Bankable Feasibility Study (BFS) for the development of a uranium mine indicates the Crocker Well project is very sensitive with regard to the price of uranium and the American dollar exchange rate.
- ◆ Processing and interpretation of detailed magnetic and radiometric surveys flown over EPM15457 The Return and over portions of EPM15440 Percyville located in north Queensland has produced better definition and understanding of geological boundaries associated with the high grade gold mineralisation previously identified within the areas investigated.
- ◆ At the end of the quarter the Company held \$7.8 million in cash.



SOUTH AUSTRALIA

Musgrave Province Project

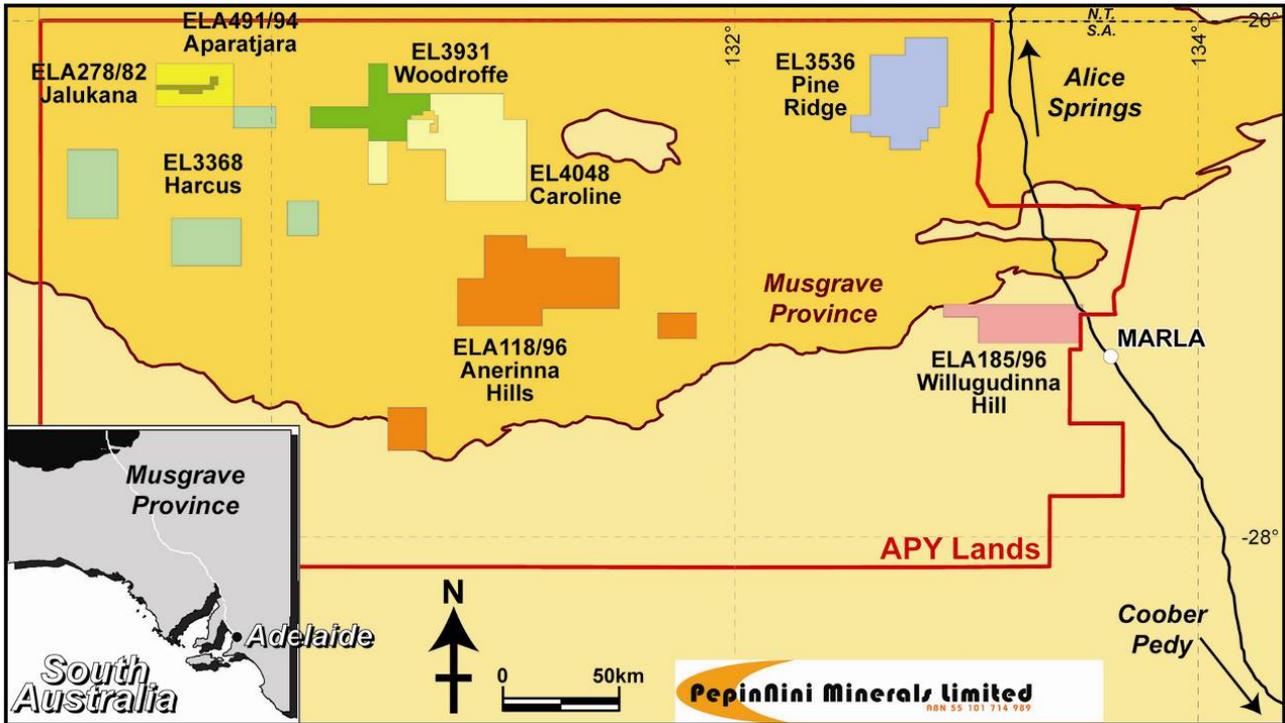
PepinNini Minerals Limited is currently undertaking exploration programs designed to target nickel-copper sulphide mineralisation and base metal mineralisation in the Musgrave Province, South Australia. PepinNini has four granted exploration licences (EL3368, EL3536, EL4048, EL3931) covering ~5,669 km² and four exploration licence applications (ELA118/96, ELA185/96, ELA278/82, ELA491/94) covering ~3,852 km². PepinNini subsidiary PepinNini Resources Pty Limited is earning a 51% interest in EL3931 and ELAs 278/82 and 491/94 under a Farm-in and Joint Venture Agreement with Rio Tinto Ltd subsidiary Rio Tinto Exploration Pty Limited.

During the quarter exploration activity was focused on EL4048 'Mt Caroline' and EL3931 'Woodroffe', predominantly within the vicinity of the Giles Complex layered mafic-ultramafic Caroline Intrusion. The Giles Complex is considered to be highly prospective for nickel-copper sulphide and platinum group element mineralisation following the discovery of the Nebo-Babel deposit in Western Australia by WMC (392Mt @ 0.3%Ni and 0.33%Cu).

Exploration Licence EL4048 – Mt Caroline

Recent exploration activities within EL4048 have included reinterpretation of historic Tempest electromagnetic (EM) data and aeromagnetic data, seven dipole-dipole induced polarisation traverses (14.1 line kilometres), shallow vacuum drilling and diamond drilling.

In total, 856 vacuum boreholes have been completed within EL4048, totaling 9595.35m. 1854 samples have been submitted for assaying. Twenty diamond boreholes (7,930.77m) have been completed within EL4048, sixteen of which have specifically targeted the Caroline Intrusion. Disseminated sulphides and favourable lithologies for Ni-Cu sulphide mineralisation have been observed in all boreholes.



PepinNini tenement distribution in the Musgrave Province, South Australia

Exploration Licence EL3931 – Woodroffe

Field exploration activities commenced within EL 3931 during the quarter.

A Work Program Clearance was undertaken during October 2009 in which ~800 vacuum boreholes and 12 diamond boreholes were approved for drilling by Traditional Owners. Vacuum drilling commenced on 11th November 2009. A total of 73 vacuum boreholes totaling 656.7m were completed during the quarter. 157 samples were submitted for assaying. Diamond drilling within EL3931 commenced on 28th November, 2009. Borehole DD09WOD001 is currently at a depth of 128.56m.

Regional vacuum drilling over the Caroline Intrusion has been successful in identifying areas prospective for Ni-Cu(-Co) sulphide mineralisation. It has been determined that the regolith geochemistry is affected by the presence of palaeochannels which partly obscures the geochemical footprint of the underlying bedrock. This observation provides encouragement where the margins of the palaeochannels are flanked by anomalies such as within EL3931. The magnitude of geochemical anomalies identified within EL3931 and their spatial relationship to the Caroline Intrusion stratigraphy is considered to be highly encouraging. This is because the anomalous results are associated with a region of relatively low magnetic resonance, which is likely reflecting low-Fe, high-Mg magmatic differentiates. These differentiates are more likely to be Ni-Cu enriched. Several priority targets will be tested by infill vacuum drilling and diamond drilling.



Diamond drilling – Caroline Intrusion, Musgrave Province, South Australia

Curnamona Province Project

The development of the Crocker Well Uranium Deposit by Sinosteel Corporation (60%) and PepinNini Minerals (40%) is being managed by Sinosteel PepinNini Curnamona Management Pty Limited (SPCM) on behalf of the Joint Venture partners. The project has its own dedicated website at www.crockerwell.com.au.

The joint venture alliance between Sinosteel Corporation and PepinNini Minerals Limited has decided to delay the completion of a BFS until there is a substantial sustained increase in the price of uranium and a substantial sustained improvement in the American dollar. Preliminary financial modeling of the Crocker Well Uranium Project undertaken as part of a Bankable Feasibility Study (BFS) for the development of a uranium mine indicates the Crocker Well project is very sensitive with regard to the price of uranium and the American dollar exchange rate.

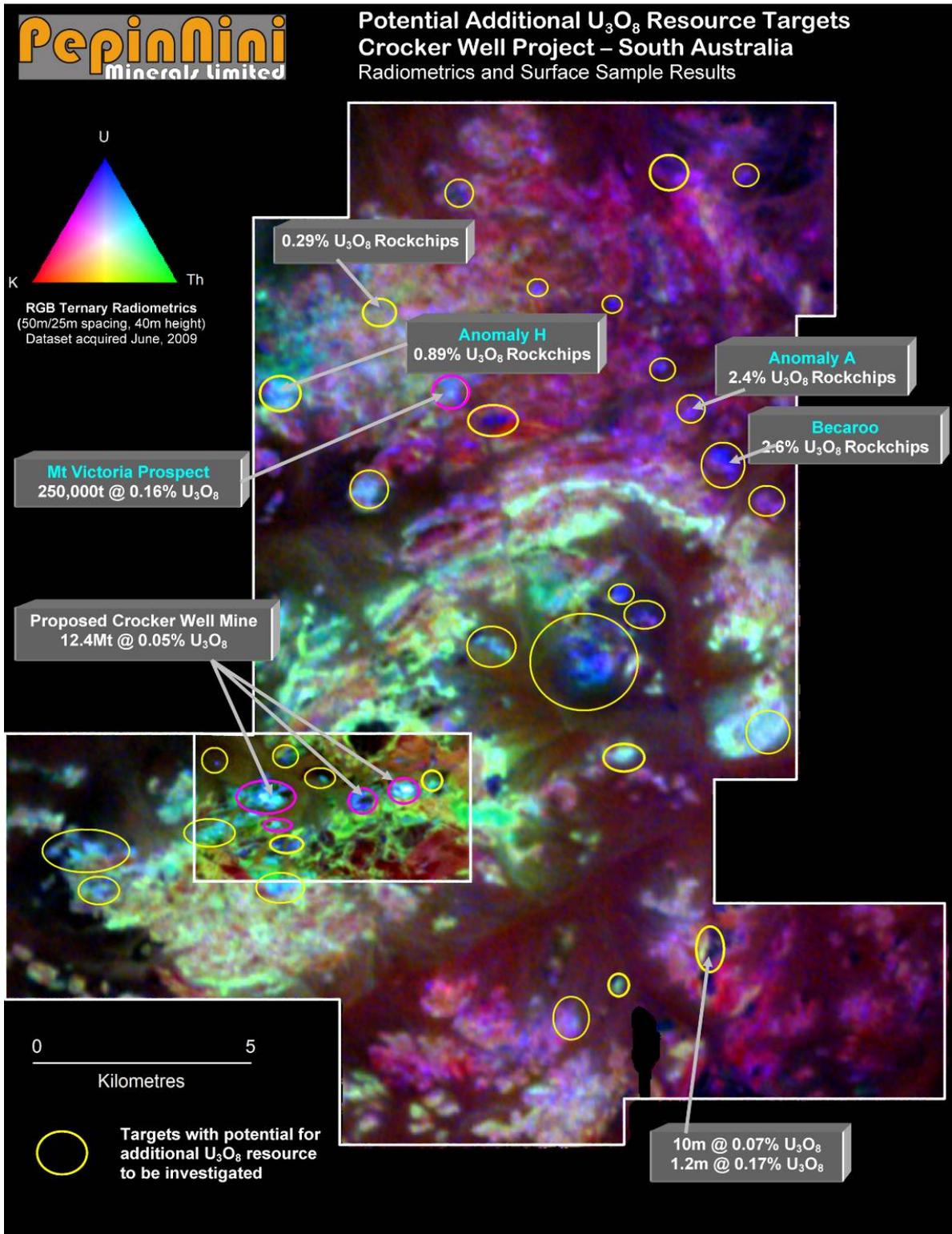
Investigation of potential additional resource targets

During the quarter a drill program to investigate regional uranium targets in the vicinity of Crocker Well commenced. Five fully cored diamond drill holes have been completed for a total of 648.1m to verify the previously identified resource at the historic Mt Victoria Uranium Deposit. A reverse circulation drilling program of 23 boreholes for 2236m was also completed during the quarter to investigate other regional prospects in the vicinity of Crocker Well including Becaroo, Anomaly A

and NE Extension located within EL 4239 and EL3278. Results from laboratory analysis of core and RC samples are awaited. A total of 1201 samples, inclusive of standards (42) and duplicates (37), were submitted for multi-element analysis. All holes were geophysically logged for total gamma as well as magnetic deviation and magnetic susceptibility.

Mt Victoria has a previously announced (4th October, 2005) Inferred JORC compliant resource of 250,000 tonnes at an average U_3O_8 grade of 0.16% using a cutoff grade of 300ppm. High grade surface samples of up to 2.6% U_3O_8 have been reported for the Becaroo Prospect and 2.4% U_3O_8 for Anomaly A.

All of the prospects investigated have extensive surface radiometric anomalies.



WESTERN AUSTRALIA

Robinson Range Iron Ore Project

During the quarter PepinNini continued to maintain the status of the Robinson Range Iron Ore Farm-In and Joint Venture notwithstanding disagreement between PepinNini and the Receiver and Manager of Grosvenor Gold Pty Limited on that issue.

The seven tenements subject of the Farm-In Agreement contain a significant portion of the area within the Bryah-Padbury Basin deemed prospective for iron ore. The potential iron ore deposits have grades of up to 65% Fe with low phosphorous content suitable for exploitation as Direct Shipping Ore (DSO). The prospects have never been drilled, and exploration for iron ore has not been conducted over this ground since 1974.

PepinNini Minerals has identified approximately 40 kms strike length of the prospective Robinson Range Formation within the JV tenements and has completed a detailed 250m grid gravity survey to assist in identifying priority drill targets.

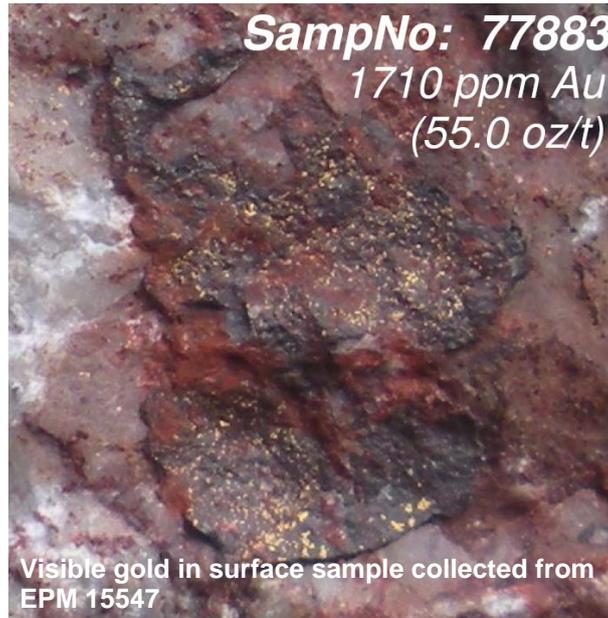
During the quarter a detailed reconnaissance surface mapping and sampling program was completed and included the collection of 302 surface samples from 12 outcropping prospects.



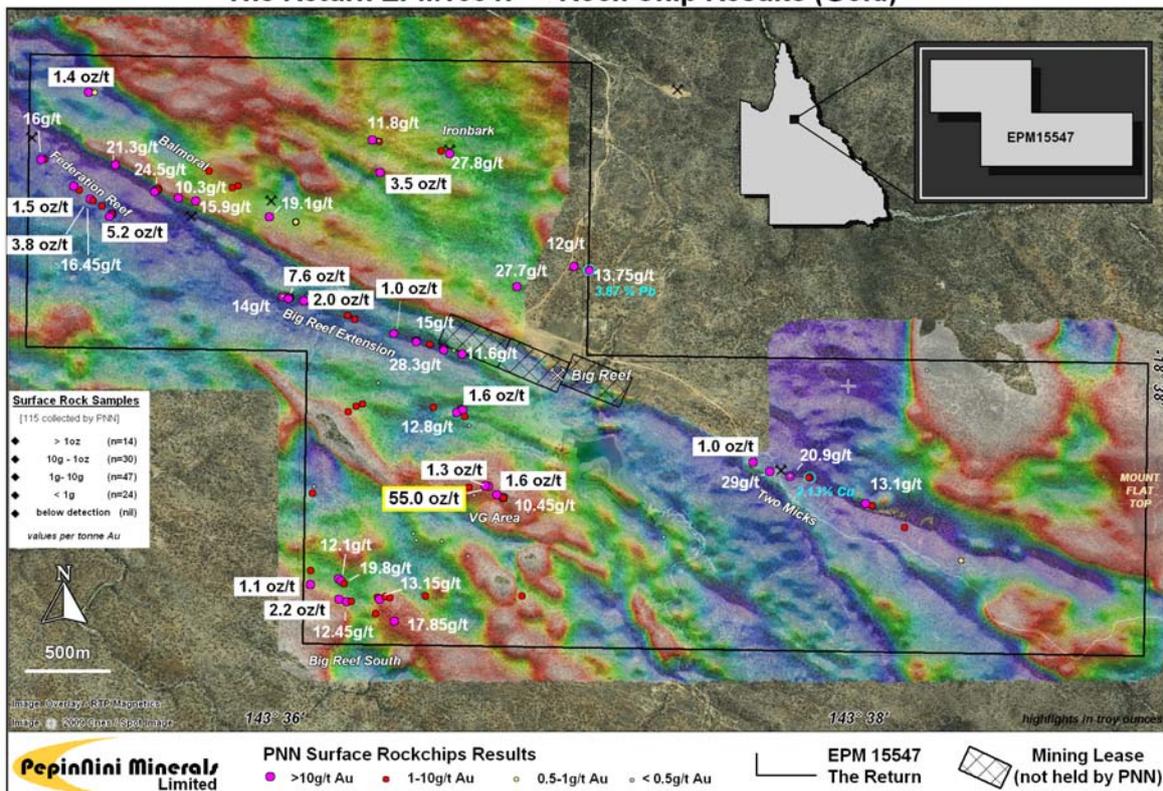
Iron outcrop – Robinson Range Project, Western Australia

NORTH QUEENSLAND

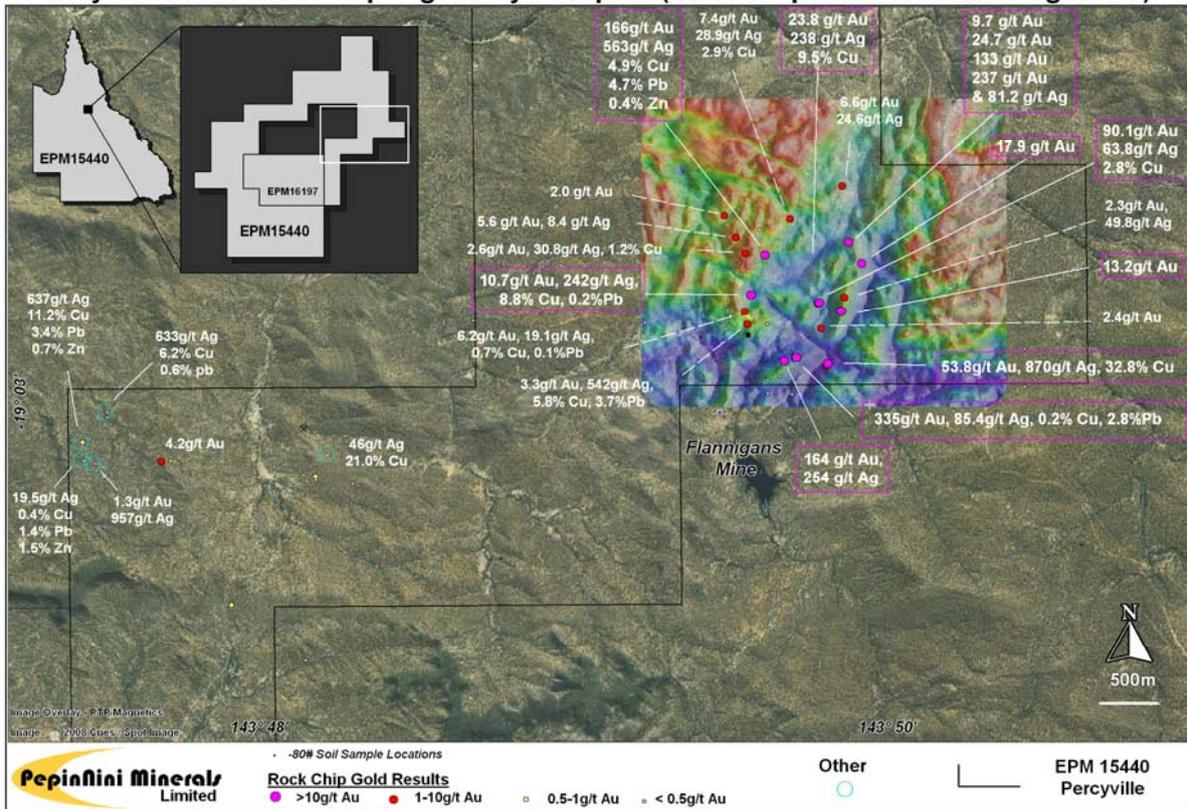
During the quarter data from detailed magnetic and radiometric surveys flown over EPM 15547 The Return and EPM 15440 Percyville have been processed and interpreted. Detailed geological mapping at a scale of 1:2,000 has been used in conjunction with the geophysics to better understand geological boundaries associated with the high grade gold mineralization previously identified. A drilling program is currently in preparation and subject to obtaining statutory approvals is scheduled to commence in March, 2010.



The Return EPM15547 - Rock Chip Results (Gold)



Percyville EPM15440 - Spring Valley Prospect (Rock Chip Results & Helimagnetics)



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

Additional information for the Crocker Well Uranium Project can be found on the website:
www.crockerwell.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.

Name of entity

PepinNini Minerals Limited

ABN

55 101 714 989

Quarter ended ("current quarter")

December 2009

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		
1.2 Payments for (a) exploration and evaluation (b) development (c) production (d) administration	(800)	(3,130)
1.3 Dividends received	(281)	(534)
1.4 Interest and other items of a similar nature received	79	207
1.5 Interest and other costs of finance paid		
1.6 Income taxes paid		
1.7 Other (PACE drilling refund – SA govt grant)		
Net Operating Cash Flows	(1,002)	(3,457)
Cash flows related to investing activities		
1.8 Payment for purchases of: (a)prospects (b)equity investments (c)other fixed assets	(57)	(111)
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) – controlled entity contributing cash		
Net investing cash flows	(57)	(111)
1.13 Total operating and investing cash flows (carried forward)	(1,059)	(3,568)

+ See chapter 19 for defined terms.

Appendix 5B
Mining exploration entity quarterly report

1.13	Total operating and investing cash flows (brought forward)	(1,059)	(3,568)
	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 – On market Share Buy-back	-	-
	Net financing cash flows	-	-
	Net increase (decrease) in cash held	(1,059)	(3,568)
1.20	Cash at beginning of quarter/year to date	8,885	11,394
1.21	Exchange rate adjustments to item 1.20		
1.22	Cash at end of quarter	7,826	7,826

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	109
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	\$106,784
2. Reimbursement of Directors' expenses	\$1,834

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	1,000
4.2	Development	
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	3,294	3,839
5.2 Deposits at call	4,532	5,046
5.3 Bank overdraft		
5.4 Other (provide details)		
Total: cash at end of quarter (item 1.22)	7,826	8,885

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 14454 EPM 15440 EPM 15801	Lapsed Statutory partial relinquishment Statutory partial relinquishment	3 sub-blocks 62 sub-blocks 29 sub-blocks	0 sub blocks 31 sub-blocks 14 sub-blocks
6.2 Interests in mining tenements acquired or increased	nil	nil	nil	nil

+ 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>	500,000 600,000 100,000		<i>Exercise price</i> 138cents 130 to 230 cents 35cents	<i>Expiry date</i> 30 Nov 2010 31 Jan 2011 31 Dec 2010
7.8 Issued during quarter				
7.9 Exercised during quarter				
7.10 Expired during quarter				
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 give a true and fair view of the matters disclosed.



Sign here:

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Date **Thursday 28th January 2010.**

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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