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24 July 1999

The Company Announcement Officer  
Australian Stock Exchange Limited  
Post Office Box H224 - Australia Square  
SYDNEY NSW 2000

Dear Sir / Madam

**RE: HERON RESOURCES NL, QUARTERLY REPORT, PERIOD ENDING 30 JUNE 1999**

## 1 SUMMARY

- As at 30 June 1999, the **Inferred Mineral Resource** above a 0.75% Ni cut-off for Kalpini and satellite nickel projects is **84.9 million tonne at 1.07% Ni and 0.071% Co**. The resource increase has resulted from new ore discoveries at the Goongarrie Project during the June 1999 Quarter.
- The **Inferred Mineral Resource** above a 0.50% Ni cut-off for Kalpini and satellite nickel projects is now **174 million tonne at 0.82% Ni and 0.05% Co**, representing an **in-ground metal value of A\$14 billion**.
- With the strengthening of both Heron's resource position and the A\$ nickel price, detailed operating cost, capital cost and financial modelling for Kalpini was completed using 2.8, 4.0 and 10.0 million tonne per annum plant feed scenarios over a 20 year mine life. Results were:

Throughput mtpa	Tonnes mt	Nickel %	Cobalt %	Nickel tpa	NPV 10% A\$m	IRR %
2.8	56.0	1.2	0.10	28,200	329.0	18.40
4.0	80.0	1.1	0.08	37,200	416.4	19.01
10.0	200.0	0.8	0.05	67,310	204.5	13.11

On the basis of the above cash flow models, the current **base case for developing Kalpini is 80.0 million tonne at 1.1% Ni and 0.08% Co**. In exploration terms, the ultimate development target is 200mt at 1.0% Ni, generating 92,500tpa nickel metal, a 10% discount NPV of A\$1,713 million, and IRR of 26.2%.

- The industry-wide rationalisation of nickel laterite resources and infrastructure in the Kalpini-Bulong-Goongarrie-Cawse belt still appears to be a logical progression. However, on the basis of cash flow modelling, with Heron's continually improving high grade resource position and debt-free status, a Heron-owned stand-alone processing operation is financially attractive.
- The exploration focus for the current Quarter has been the Goongarrie Nickel Project, where a 10,000m RC drilling program has commenced with 1,600x160m reconnaissance drilling at **Ghost Rocks**. From geological logging of drilling to date, a Western Zone at Ghost Rocks has an 8km strike of pyrolusitic ore, and an Eastern Zone a 4km strike of siliceous ore. It is apparent that a significant ore system has been identified, which will require substantial in-fill drilling. Significant intercepts recorded include 8m at 1.14% Ni and 0.174% Co from 28m.
- A major lignite and oil shale strategic energy resource exceeding 920 million tonne has been acquired by Heron at Balladonia 250km SE of Kalpini. Preliminary research indicates oil yields of up to 150 l/t. For comparison, published yields at the Rundle Oil Shale Project in Queensland are 105 l/t. The Balladonia Project covers 2,125km<sup>2</sup>, and provides Heron with oil shale and heavy mineral sand targets within the western Eucla Basin along the south-eastern margin of the Archaean Yilgarn Craton.

The Heron Balladonia applications form a contiguous block of tenements targeting an Eocene palaeo-shoreline which trends 70km SSW from Balladonia to east of Esperance. The total area of prospective Tertiary basins controlled by Heron exceeds 350km<sup>2</sup>, compared to for example a total area for the Collie Coalfield of 30 km<sup>2</sup>. The Balladonia Project thus represents a substantial hydrocarbon exploration target.

Resource estimates are qualitative at best, but previous explorers have stated indications as follows:

<b>BALLADONIA OILSHALE PROJECT</b>			
<b>Inferred Mineral Resource</b>			
<b>Deposit Name</b>	<b>Tonnage Million Tonne</b>	<b>Overburden:Ore Inferred Ratio</b>	<b>Registered Holder</b>
Florabel	650	5:1	Heron
Coobaninya	270	7:1	Heron
Balladonia Homestead	No estimate calculated	No estimate calculated	Heron
<b>TOTAL</b>	<b>920</b>	<b>5.6:1</b>	

The impact of this energy, sulphur and limestone resource on Kalpini cash flows is yet to be quantified.

- An Information Memorandum summarising the various resources and development strategies available to Heron was compiled as an introduction to the Kalpini Nickel Project for potential investors. The document is available subject to Confidentiality Agreement. Project resource inventory is as follows:

<b>Tenement Summary with Resources</b>					
<b>Project</b>	<b>Number Tenements</b>	<b>Area km<sup>2</sup></b>	<b>Expend Commit A\$</b>	<b>Location</b>	<b>Resource Status</b>
Kalpini	43	741	301,160	65km NE Kalgoorlie	41.9mt at 1.1% Ni
Goongarrie	46	751	277,340	70km NNW Kalgoorlie	17.9mt at 1.0% Ni
Lake Rebecca	3	4	43,800	90km ENE Kalgoorlie	13.8mt at 1.1% Ni
Edjudina	40	683	402,098	130km NNE Kalgoorlie	11.4mt at 1.0% Ni
Transline	18	581	20,000	65km ESE Kalgoorlie	known Ni laterite
Merolia	12	317	117,320	240km NE Kalgoorlie	known Ni laterite
Victory	10	113	84,120	270km NNW Kalg	known Ni laterite
Lawrence Find	7	858	20,000	180km NW Kalgoorlie	known Ni laterite
Frances Lesley	6	117	8,000	100km NW Kalgoorlie	known Ni laterite
Dunnsville	12	147	0	60km NW Kalgoorlie	known Ni laterite
Logans Find	20	199	41,520	75km S Kalgoorlie	known Ni
Pioneer	3	271	0	115km S Kalgoorlie	known Ni
Mt Hunt	2	16	0	15km S Kalgoorlie	known Ni
Kurramia	9	12	0	5km E Kalgoorlie	known Co laterite
Mt Martin	5	61	10,000	30km SE Kalgoorlie	known Ni
Bungalbin	14	1,126	0	150km WNW Kalg	66mt Fe, known Ni
Maggie Hays	1	81	0	250km SW Kalgoorlie	known Ni laterite
Balladonia	13	2,125	0	250km SE Kalgoorlie	920mt lignite
<b>TOTAL</b>	<b>265</b>	<b>8,211</b>	<b>1,325,358</b>		<b>85.0mt at 1.1% Ni</b>

- Heron now has a website, containing Annual and Quarterly Reports, as well as a pictorial coverage of drilling and other field activities:

<http://www.heeronresources.com.au>

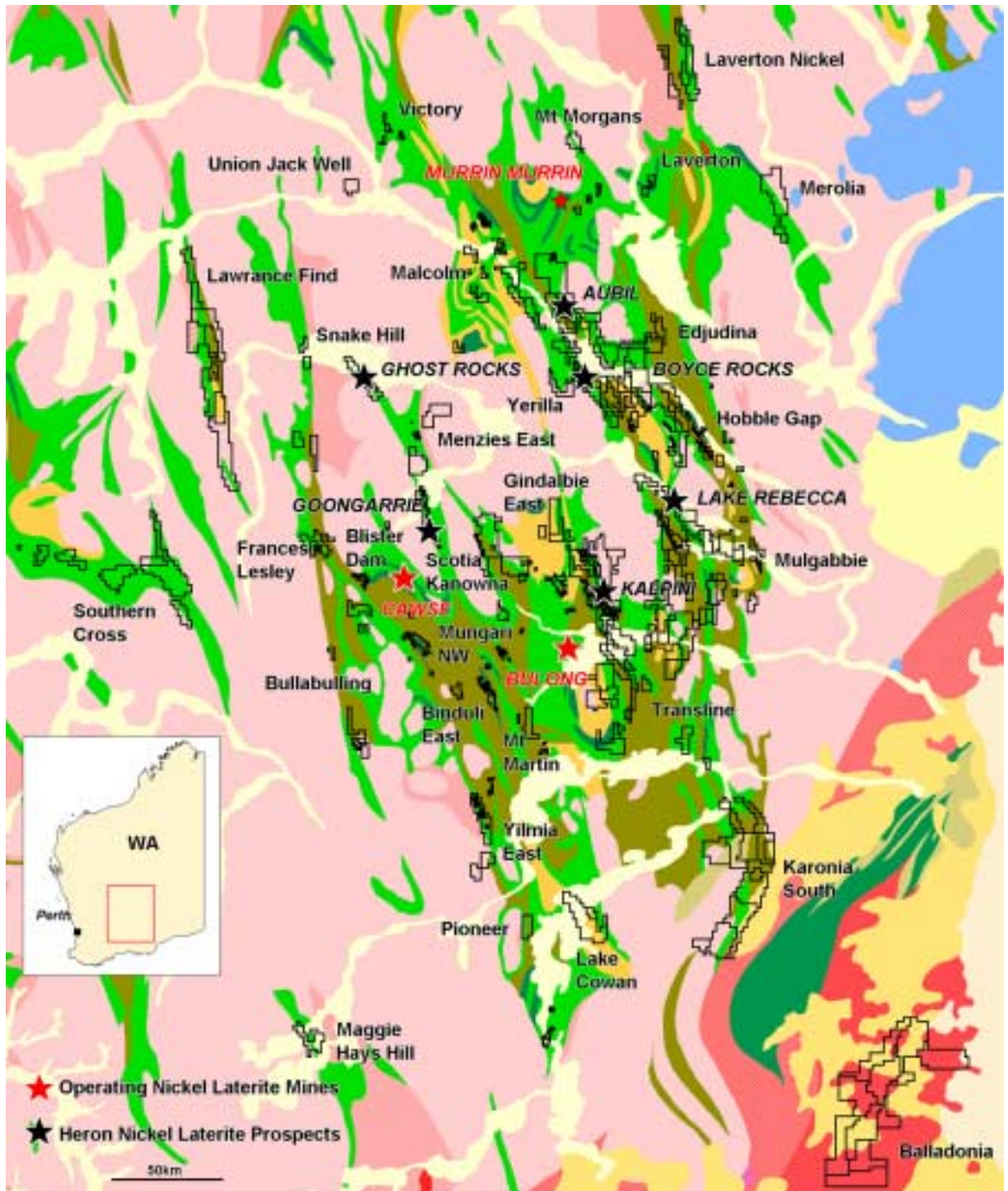


Figure 1  
Regional Geology and Tenement Locations

## 2 EXPLORATION REVIEW

### 2.1 Emu Fault Province

#### 2.1.1 Kalpini Nickel Project

Heron 100%

Nickel (- gold)

On the basis of Heron reconnaissance drilling, surface exposures, old drill-hole sampling, and aeromagnetic interpretation, the total Heron Inferred Mineral Resource at a 0.75% Ni cut-off is:

Table 1 KALPINI NICKEL PROJECT Inferred Mineral Resource Inventory, 0.75% Ni Cut-off							
Project	Pit	Strike km	Width km	Tonne million	Ni %	Co %	Ni4Co %
Acra North	K1a	1.60	0.12	1.85	1.02	0.087	1.37
Acra North	K1b	0.40	0.20	0.73	1.06	0.096	1.44
Acra North	K1c	0.40	0.12	0.72	1.00	0.092	1.37
Acra North	K1d	1.90	0.20	3.58	1.00	0.064	1.26
Acra North	K2a	1.70	0.16	4.92	1.33	0.067	1.60
Acra North	K2b	0.50	0.08	0.08	1.08	0.012	1.13
Acra North	K2c	0.50	0.08	0.38	1.13	0.056	1.35
Wellington East	K3	2.50	0.20	3.07	1.04	0.079	1.36
Wellington East	K4	3.60	0.16	7.05	1.18	0.068	1.45
Wellington East	K5	1.20	0.24	1.60	1.21	0.098	1.60
Wellington East	K6a	1.00	0.16	2.64	1.04	0.097	1.43
Wellington East	K6b	0.40	0.16	0.21	0.92	0.092	1.29
Wellington East	K6c	3.00	0.20	6.51	1.04	0.060	1.28
Wellington East	K8	2.30	0.30	4.92	0.97	0.087	1.32
Wellington Fold	K9	1.10	0.20	2.10	0.88	0.067	1.15
Wellington North	K10	0.80	0.20	1.51	1.04	0.059	1.28
<b>Total Kalpini</b>				<b>41.87</b>	<b>1.08</b>	<b>0.074</b>	<b>1.38</b>
Goongarrie Hill	G1	5.80	0.20	15.49	1.05	0.060	1.29
Ghost Rock	G2	0.80	0.08	2.40	0.98	0.076	1.28
<b>Total Goongarrie</b>				<b>17.89</b>	<b>1.04</b>	<b>0.062</b>	<b>1.33</b>
Lake Rebecca	R1	2.20	0.30	11.00	1.16	0.076	1.46
Lake Rebecca	R2	1.10	0.15	2.77	0.99	0.027	1.10
<b>Total Rebecca</b>				<b>13.77</b>	<b>1.13</b>	<b>0.066</b>	<b>1.38</b>
Boyce Creek	Y1	1.00	0.20	6.02	0.95	0.092	1.32
Lady Byron	Y2	0.60	0.20	2.82	1.06	0.049	1.26
Aubils	Y3	0.80	0.20	2.57	1.00	0.100	1.40
<b>Total Yerilla</b>				<b>11.41</b>	<b>0.99</b>	<b>0.083</b>	<b>1.32</b>
<b>TOTAL</b>				<b>84.94</b>	<b>1.07</b>	<b>0.071</b>	<b>1.35</b>

The resource estimate uses intercepts above 0.75% Ni over a minimum 2 metre vertical thickness, with a maximum 2 metre of internal waste within the calculated intercept. An SG of 1.6 is assumed, based on a range of 1.3 to 2.25 as inferred from drill chip logging, and validated by a 2,000m down-hole density log survey.

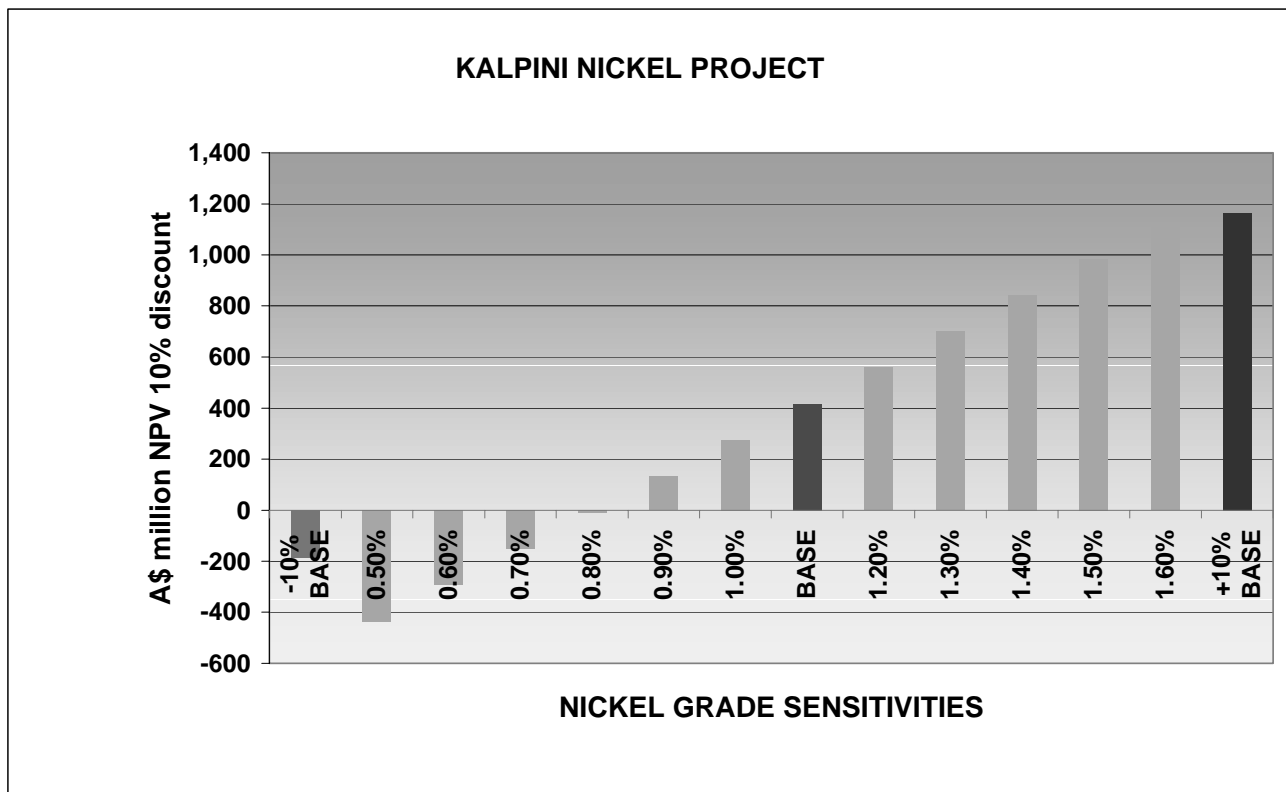


Figure 2

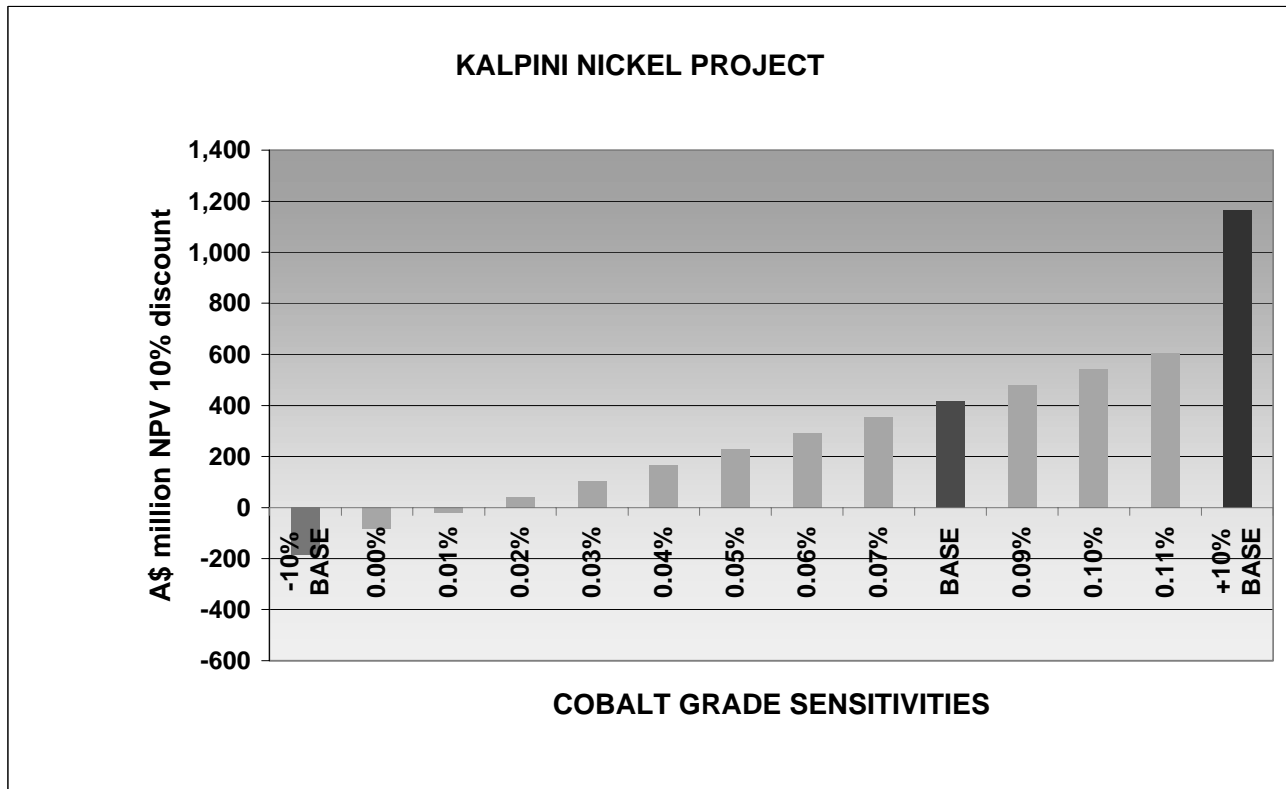


Figure 3

Detailed financial models were completed for the Kalpini Nickel Project. The base case as at 30 June 1999 is:

- 80,000,000 tonnes at 1.1% Ni and 0.08% Co. Capital and operating parameters have been scaled-up from the Bateman Kinhill Pre-feasibility Study reported in the March 1999 Quarterly Report.
- Nickel price US\$2.50/lb, cobalt price US\$10.00/lb, exchange rate A\$=US\$0.65.
- Mining cost \$11.00/t, processing + maintenance cost \$45.75/t, administration \$2.00/t.
- Capital expenditure \$880 million, 70% debt funded, 10% interest rate, payback in Year 4.
- Life of project average US\$/lb operating cost US\$1.14 after cobalt credits, or US\$1.86 as total cash cost.

The main conclusions from the financial studies were:

- The project is strongly sensitive to nickel grade, nickel price and debt:equity ratio.
- With all other base case parameters fixed, varying the nickel grade indicates a break-even grade of 0.8% Ni. Varying the cobalt grade indicates a break-even grade of 0.02% Co (Figure 2,3).
- With all other base case parameters fixed, individual break-even commodity prices are US\$1.85/lb for nickel, and US\$2.00/lb for cobalt.
- Recovery is not sensitive, indicating excessive autoclave resident times are not required.
- The NPV is maximised at a relatively coarse screen size, with 10% oversize reject being satisfactory.
- Exchange rate and capital cost are not cash flow sensitive.

At a US\$2.50/lb nickel price, the Kalpini Nickel Project is financially robust, with Internal Rate of Return ("IRR") of 19.01%, and Net Present Value ("NPV") at a 10% discount rate of A\$416.4 million.

At US\$3.00/lb and US\$3.50/lb nickel prices, the Kalpini Nickel Project is financially excellent, with projected IRRs of 23.54% and 27.26% respectively, and NPVs at a 10% discount rate of A\$729.0 million and A\$1,012.0 million respectively (Figure 4).

Global Mining Services, mining consultants of Perth, completed an independent ore reserve evaluation for Kalpini. The Heron resource estimates were validated. The exercise indicated that the in-fill drilling requirement for the next stage of feasibility is 80x40m.

Discussions are current for treating a small parcel of high grade Ni-Co ore through an established PAL plant.

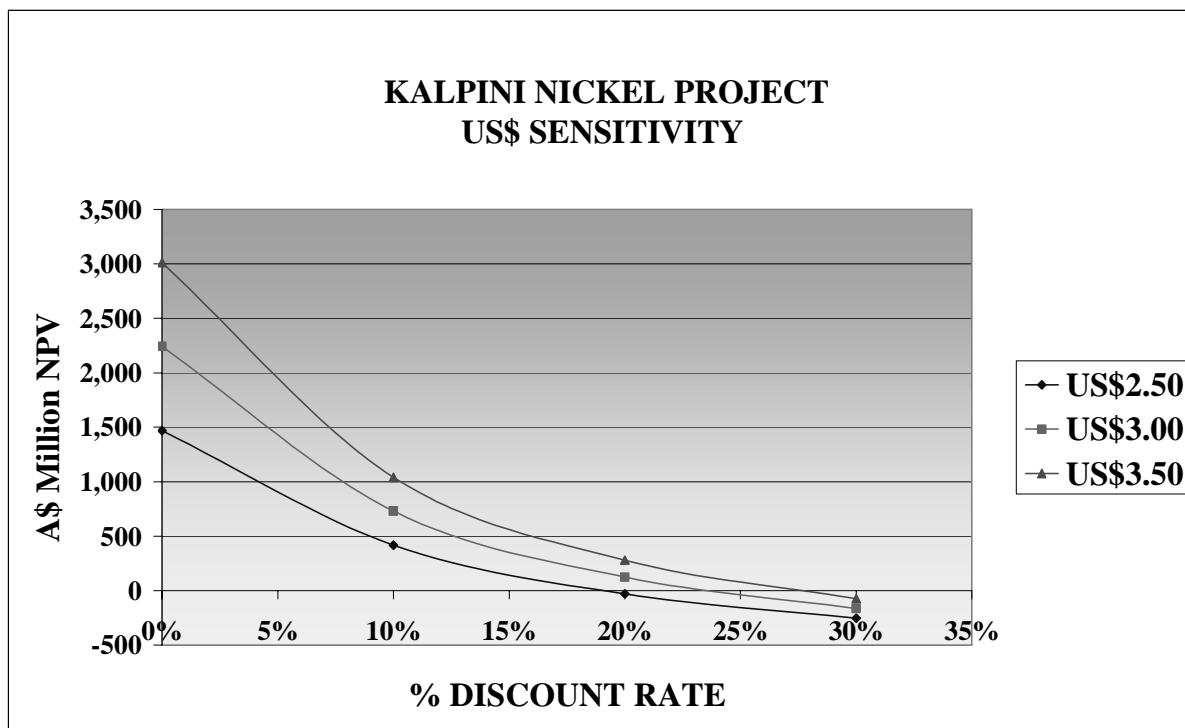


Figure 4  
US\$/lb NPV Analysis at 2.50, 3.00 and 3.50 Nickel Price

## 2.1.2 Transline Project

Heron 100%  
Nickel (- gold)

Exploration Licence applications await grant.

## 2.2 SCOTIA KANOWNA DOME PROVINCE

During the Quarter, target selection, collar survey and a 10,000m RC drilling program testing high priority lateritic nickel-cobalt targets commenced at Goongarrie South, Goongarrie Hill and Ghost Rocks.

### 2.2.1 Goongarrie South Project

Heron 100%  
Nickel

Heron executed its agreement with PacMin Mining Corporation Limited (“Pacmin”) for the purchase of Pacmin’s tenement holding between Scotia and Goongarrie South. The Cawse nickel laterite mine is located within precisely the same stratigraphic unit as the Pacmin acquisition tenements.

Based on appraisal of aeromagnetic data, a 7km strike extent of the komatiite sequence is interpreted to be highly prospective for nickel laterite mineralisation. Confirmation of ore grade nickel laterite is present in old drilling.

Heron’s composite sampling of previous RAB drilling has returned a number of significant intersections, including 22m at 0.81% Ni and 0.12% Co within siliceous laterite, and 20m at 0.89% Ni and 0.17% Co within siliceous limonitic ore. The high cobalt content of the mineralisation is encouraging.

Exploration work for gold was completed by a previous tenement holder, and included regolith and aeromagnetic interpretation, and drilling 42 RAB holes for a 1,735m total metreage. Despite the program targeting gold, minor nickel data is recorded, and includes some significant intersections, given the limited extent of the RAB drilling program:

Hole	North m	East m	From m	To m	Interval m	Ni %	Co %	Ni4Co %
SCR05	9100	6110	9	25	16	1.53	0.132	2.06
SCR21	5810	7370	18	22	4	0.73	0.069	1.01
			29	41	12	0.71	0.025	0.81
		incl	33	36	3	1.11	0.029	1.23
SCR22	5805	7330	13	18	5	0.89	0.025	0.99
		incl	16	18	2	1.08	0.024	1.12
SCR24	8960	6080	16	20	4	0.85	0.224	1.75

From logging of the old RAB spoil, the ore host is siliceous clay, which is a favourable ore type.

A 4,000m RC drilling program has been marked out at Goongarrie South, with initial drilling proposed on an 800x80m pattern.

### 2.2.2 Goongarrie Hill Project

Heron 100%

Nickel

Section interpretation and resource estimation was completed for the area covered by the March 1999 RC drilling, with an Inferred Mineral Resource of 15.5 million tonne at 1.05% Ni and 0.06% Co identified to date. In-fill drill collars for a 2,000m RC program at Goongarrie Hill have been surveyed on a 400x80m pattern.

Ethnographic surveys have commenced, to facilitate Native Title Heritage agreements on the Mining Leases.

### 2.2.3 Ghost Rocks Project

Heron 100%

Nickel

Significant lateritic nickel results were recorded in “Nickel Boom” percussion drilling at Ghost Rocks. Remnant sample cuttings are dominantly siliceous ore types, with minor chalcedonic veining. Olivine adcumulate to mesocumulate textures are observed. Very shallow drilling in very limited areas returned the following results:

Table 3 GHOST ROCKS NICKEL PROJECT “Nickel Boom” Percussion Drilling, Significant Intersections, 0.75% Ni Cut-off								
Hole	North m	East m	From m	To m	Interval m	Ni %	Co %	Ni4Co %
P66	500S	00E	8	23	15	0.75	not assay	n/a
		incl	8	12	4	1.14	not assay	n/a
		incl	20	23	3	0.94	not assay	n/a
P67	500S	25E	2	11	9	0.96	not assay	n/a
		incl	8	11	3	1.24	not assay	n/a

A 4,000m RC drilling program has commenced at Ghost Rocks, targeting a 15.7km strike length of favourable lateritised ultramafic. The target width is up to 1.1km, confirming a significant resource potential.

To date, 46 holes have been completed and initial assays returned for 13 holes. The drill target is lateritised Walter Williams Formation, which is the stratigraphic host unit of the Cawse lateritic nickel mine.

Initial drilling is on a 1,600x160m grid, aimed at elucidating the geological controls of the known Ghost Rocks lateritic nickel mineralisation. Results to date have been encouraging, and include 8m at 1.14% Ni and 0.174% Co from 28m. Significantly, shallow high grade cobalt mineralisation has been identified, hosted by “sub-0.5% Ni” ore blocks. Mineralisation styles are extremely favourable, being predominantly limonitic, pyrolusitic and siliceous. These ore styles are readily beneficiable ore types at Cawse and Kalpini.

Drilling is continuing, and will test the total strike potential, as well as in-fill mineralised zones at 800x80m.

Table 4 GHOST ROCKS NICKEL PROJECT RC Drilling, Significant Intersections, Composite Samples*, 0.50% Ni Cut-off								
Hole Number	North m	East m	From m	To m	Interval m	Ni %	Co %	Ni4Co %
GRRC001	6731200	293520	24	44	20	0.81	0.09	1.17
GRRC006	6731200	293600	4	8	4	0.82	0.05	1.01
GRRC007	6731200	293680	0	12	12	0.75	0.01	0.80
GRRC007			16	28	12	0.76	0.05	0.97
GRRC013	6731200	293440	18	45	27	0.62	0.02	0.69

\* 1m assay results are pending, hence preliminary composite assays at a 0.5% Ni cut-off.



The Ghost Rocks ultramafic sequence is a regionally extensive, thick fractionated ultramafic flow, consisting from east to west of olivine adcumulate and mesocumulate grading into olivine orthocumulate, pyroxenite and gabbro, all overlain by basalt. The flows thus young westwards.

Previous explorers have targeted without success various Ni-Cu anomalies situated on the western side of the ultramafic sequence, now interpreted by Heron as part of the upper flow. The prospective lower sequence remains inconclusively tested for disseminated or massive nickel sulphide mineralisation, which if present, is likely to be located in the stratigraphically lower part of the olivine adcumulate to mesocumulate zone.

### **2.2.5 Menzies East Joint Venture Project**

Heron 100%. Golden State Resources right to earn 60%  
Gold - nickel

Golden State is reviewing its regional exploration results and data base.

## **2.3 KEITH KILKENNY PROVINCE**

### **2.3.1 Edjudina Nickel Project**

Heron 100%  
Nickel (- gold)

#### **Aubils Prospect**

Section interpretation and resource estimation was completed, with Inferred Mineral Resource being 2.6 million tonne at 1.00% Ni and 0.10% Co. Areas for follow-up drilling have been identified.

Ethnographic surveys have commenced for the Aubils-Lady Byron-Boyce Creek area.

### **2.3.2 Edjudina Project**

Heron 100%  
Nickel - gold

#### **Raeside Prospect**

The Raeside Joint Venture Prospect is located at Lake Raeside 150km NNE of Kalgoorlie and 90km N of the Kalpini Nickel Project.

During the Quarter, Heron purchased the remaining 30% equity previously held by Rio Tinto. The package of tenements contains a number of magnetic features associated with the Keith Kilkenny Lineament, and several gold drill intercepts have been recorded by previous explorers.

Discussions are in progress with adjacent tenement holders to form a gold joint venture. Heron's interest is in nickel laterite targets and infrastructure ground.

### **2.3.3 Southern Laverton Tectonic Zone Joint Venture Project**

Heron 100%, Gutnick Resources NL right to earn 80% in gold projects only  
Heron retains 100% of all nickel rights

Gutnick Resources (previously named Mount Kersey Mining NL) and Heron executed formal joint venture documentation, with Gutnick Resources farming-in on 31 tenements in the Edjudina - Pinjin portion of the Southern Laverton Tectonic Zone.

Under the agreement, Gutnick Resources may spend \$1.2 million within four years to earn an 80% interest in the tenements, and will then continue to fully fund exploration to the point where a Decision to Mine is made. Gutnick Resources has commenced a comprehensive GIS data evaluation, to identify drill targets. Gutnick Resources have recently reported encouraging gold exploration results in the vicinity of the Heron joint venture at Pinjin.

### **2.3.4 Laverton Tectonic Zone Joint Venture Project**

Heron 100%, Croesus Mining right to earn 80% in gold projects only  
Heron retains 100% of all nickel rights

An agreement was executed with Croesus Mining NL by which Croesus may earn an 80% interest in a group of 22 tenements in the Edjudina to Laverton areas.

Croesus may spend \$750,000 within 3 years to earn their equity, however will continue to fund all exploration to the commencement of mining.

#### **Edjudina Prospect**

A literature review was completed, followed by a field reconnaissance visit that included E31/190, E31/233, E31/234, E31/236, E31/288 and E31/311. Four prospective mineralised corridors, being from west to east the Webb Find, Yilgangi, Porphyry-Wallbrook and Yarri zones, were interpreted within the joint venture project area.

A first pass RAB drilling program was completed towards the northern end of E31/237, immediately west of the Wallbrook Hill mine. Croesus has recently announced good gold drilling results at Wallbrook Hill (not in the Heron joint venture). The E31/237 program targeted several magnetic anomalies and a gold-in-soil anomaly. Drilling was restricted to one traverse on 100m centres comprising 40 holes for a total of 515m.

Holes were drilled to blade refusal (range 1 to 47m) and encountered a variably weathered ultramafic-basalt-dolerite-felsic volcanoclastic sequence. No anomalous gold and only background nickel values (600-800 ppm) were returned.

Aeromagnetic and geochemical targets in the central and southern parts of the tenement require field inspection ahead of drilling as appropriate.

#### **Laverton Prospect**

A literature review was completed, followed by a field reconnaissance. Colour aerial photography will be acquired and regolith interpreted ahead of soil geochemical surveying and RAB drilling.

### **2.3.5 Mulgabbie Project**

Heron 100%  
Nickel (- gold)

#### **Lake Rebecca Nickel Project**

Scoping studies in respect of the high grade nickel laterite ore are current, including appraisal of selective ore hauling and sale. An archaeological survey was commissioned for the Lake Rebecca area.

#### **Mulgabbie West Prospect**

Heron completed the sale of the prospect to PacMin Mining Corporation Limited ("Pacmin"). As part of this sale, Heron secured tenure over Pacmin tenements at Goongarrie South containing known nickel laterite mineralisation.

### **2.3.5 Karonie South Project**

Heron 100%  
Gold (- nickel - base metals)

Expressions of joint venture interest are being assessed.

## **2.4 MUNGARI PROVINCE**

### **2.4.1 Mungari Northwest Joint Venture Project**

Heron 100%, Kundana Gold right to earn 50%  
Gold

RAB drilling comprising 43 holes for 257m was completed on Mungari Northwest tenements P16/1683 and P16/1684. Hole depths averaged 6 metres reflecting the shallow depth of cover over a fully stripped profile. All results have been received with no assays greater than 0.1ppm Au returned.

## **2.5 LEONORA LAVERTON PROVINCE**

### **Merolia Prospect**

The tenements cover a northern extension to the Irwin Hills-Coglia Well nickel laterite-hosting ultramafic unit. Open file records show the presence of nickeliferous laterite at Merolia. An expression of interest regarding a gold joint venture is being considered.

Tenement grant is awaited

### **2.5.2 Laverton Joint Venture (Hawks Nest) Project**

Heron 100%, Metex right to earn 70%  
Gold (-nickel)

Compilation of the March 1999 vacuum drilling is current.

### **2.5.3 Mount Morgans Joint Venture Project**

Heron 100%, Metex right to earn 70%  
Gold (-nickel)

A regional target overlay map is in preparation which will provide a focus for future exploration within the tenements.

### **2.5.5 Victory Project**

Heron 100%  
Nickel (- gold)

### **Doyle Well**

Agreement in principle was reached to sell this tenement, subject to the purchaser selling a comparable tenement in the Kalpini area to Heron.

### **Bellevue East Prospect**

Nickel prospectivity targets were generated, with the exploration model being the Cosmos nickel sulphide discovery, located 30km N along strike of Bellevue East. Negotiations continue in respect of possible gold and nickel sulphide joint ventures within the project area.

## 2.6 MENZIES LEONORA PROVINCE

### 2.6.1 Lawrence Find Project

Heron 100%

Nickel-gold-copper-zinc

A GIS review of all available exploration data within the area covered by Heron's tenements identified three target areas warranting follow-up exploration:

- Day Rock Prospect Volcanogenic massive sulphide Cu-Zn-Au
- Regional As-Sb-Bi-Se anomalies Epithermal Au
- Central Felsic Volcanic Complex Volcanogenic massive sulphide Cu-Zn-Au

Heron acquired the project on the basis of documented volcanogenic massive sulphide occurrences. These represent potential strategic sulphur resources for future nickel laterite processing.

A joint venture proposal is being sought, to further develop the defined Au and Cu-Zn targets.

## 2.7 IDA FAULT PROVINCE

### 2.7.1 Snake Hill Joint Venture Project

Heron 100%, Connemara right to earn 70%

Gold (- nickel)

Connemara have completed a drill target definition study.

### 2.7.2 Blister Dam Joint Venture Project

Heron 100% Delta Gold NL right to earn 75%

Gold (- nickel)

Two RC drill holes and one diamond drill hole have been completed testing beneath previously reported supergene gold mineralisation. Results of the RC holes included:

Table 5								
BLISTER DAM JOINT VENTURE PROJECT								
RCP Drilling, Significant Intersection.								
Hole	North m (local)	East m (local)	Declin	Azimuth	From m	To m	Interval m	Au g/t
BSC006	50020	18050	-60°	030°	170	175	5	1.21

This intercept occurred within broad zones of lower order mineralisation (0.1-0.3g/t), suggesting the presence of a large mineralised alteration system.

The intensity of alteration increases to the east, which is the location targeted by the diamond drill hole. Results for the diamond hole have not yet been received. This hole intersected several sub-vertical zones of altered feldspar-phyric basalt, with up to 10% sulphide (pyrite with or without pyrrhotite and arsenopyrite), silica flooding and textural destruction within mylonitic zones. In addition, a 5m zone of brecciation, silica flooding, and over 10% variably gossanous weathered sulphides is present in basalt, suggesting a late brittle overprint of the generally ductile deformation zone. This zone is open for at least 600m to the east.

Aircore drilling on 50m centres has been completed along two grid north-south lines, located 200m grid west and east along strike from previously reported RC hole BSC001 (47m at 0.36g/t). A number of anomalous gold intercepts were returned, including:

<b>Table 6</b>								
<b>BLISTER DAM JOINT VENTURE PROJECT</b>								
<b>Aircore Drilling, Significant Intersections.</b>								
<b>Hole</b>	<b>North</b>	<b>East</b>	<b>Declin</b>	<b>Azimuth</b>	<b>From</b>	<b>To</b>	<b>Interval</b>	<b>Au</b>
	<b>m (local)</b>	<b>m (local)</b>			<b>m</b>	<b>m</b>	<b>m</b>	<b>g/t</b>
BDA131	50100	17850	-90°	n/a	74	80	6	0.74
BDA139	50200	18250	-90°	n/a	44	51	7	1.79
BDA140	50150	18250	-90°	n/a	36	37	1	1.21
BDA142	50050	18250	-90°	n/a	75	92 eoh	17	0.44

Mineralisation in hole BDA140 was within a palaeochannel, and in BDA142 mineralisation extended to the end of the drill hole.

The drilling encountered silica-carbonate-sulphide altered feldspar-phyrlic basalt on both lines, extending the known supergene mineralisation and favourable altered host to a strike of over 400m. This continues to remain open for a further 600m to the east. The tenor of mineralisation, strike extent and intensity of alteration encountered to date is encouraging.

### **2.7.3 Frances Lesley Project**

Heron 100%  
Gold (- nickel)

The project area is immediately NW along strike from known nickel sulphide drill intercepts. An expression of joint venture interest has been received, which will be evaluated once key tenements have been granted.

### **2.7.4 Bullabulling Project**

Heron 100%  
Gold-nickel

Native Title negotiations have commenced, to expedite grant of Exploration Licences.

### **2.7.5 Yilmia Hill Project**

Heron 100%  
Nickel (- gold)

Joint venture discussions on gold rights only are current.

### **2.7.6 Cowan Project**

Heron 100%  
Nickel (- gold)

Grant of tenements is awaited. The project area is along strike of the Mount Thirsty lateritic cobalt-nickel deposit.

Field reconnaissance and digital data base compilation has commenced, with initial interpretation indicating a Zuleika Shear Zone structural setting. More specifically, a "Ghost Crab granitoid pressure shadow" target zone is indicated.

Joint venture discussions on gold rights only are current.

### **2.7.7 Siberia Project**

Heron 100%  
Nickel (- gold)

The tenement covers the northern part of the ultramafic succession which hosts nickel laterite mineralisation to the immediate south at the Cawse Extended deposit (85.6 million tonne at 0.7% Ni).

A nickel soil anomaly with values of 700-1,532ppm Ni confirms the presence of lateritic nickel mineralisation at Siberia.

## **2.8 DUNDAS PROVINCE**

### **2.8.1 Dundas Project**

Heron 100%  
Gold

Heron's Mining Lease applications have been recommended for grant.

## **2.9 KAMBALDA DOMAIN PROVINCE**

### **2.9.1 Binduli East Joint Venture Project**

Heron 100% MPI Gold right to earn 70%  
Gold

A program of 1,334m of RAB drilling in 34 holes on three traverses was completed at the Abattoir Shear Zone. Holes were designed to test areas of coincident low level auger geochemical anomalism and interpreted structures.

Preliminary results have been received for all drilling, with no anomalous intercepts recorded. This is in general agreement with visual indications from logging, with no zone of alteration, shearing or veining noted in the drill chips.

Several other similar targets could not be drilled, since tenement grant is awaited.

### **2.9.2 Kurramia Project and Mount Martin Project**

Heron 100%  
Nickel (- gold)

The intensely gold mineralised Boorara Shear Zone underlies the project area. In addition, ultramafic units in the area have documented lateritic nickel-cobalt. Target generation was completed. Joint venture discussions on gold rights only are current.

## **2.10 SOUTHERN CROSS PROVINCE**

### **2.10.1 Bungalbin Project**

Heron 100%  
Iron ore - nickel (- gold)

Heron executed an agreement to sell the rights to Iron Ore to Portman Mining Limited on ore reserves identified within the Bungalbin and Mount Jackson tenements.

Portman must spend \$250,000 on exploration to earn their equity, after which Heron will receive a Royalty based on the FOB revenue for Iron Ore sold from the tenements. It is projected that a mining operation is likely to commence within five years. Heron will retain the rights to all other minerals on the tenements, as lateritic nickel and gold targets have been previously identified by Heron.

## 2.10.2 Maggie Hayes Hill Project

Heron 100%  
Nickel (- gold)

Strong joint venture interest has been expressed in the project. A tenement swap or farm-out is being considered.

## 2.11 WEST EUCLA BASIN PROVINCE

### 2.11.1 Balladonia Project

Heron 100%  
Lignite-sulphur-limestone -heavy mineral sands

The 2,125km<sup>2</sup> Balladonia Project provides Heron with coverage of the western Eucla Basin along the south-eastern margin of the Archaean Yilgarn Craton.

The Heron applications form a contiguous block of tenements targeting an Eocene paleo-shoreline, which trends for 70km SSW from Balladonia to east of Esperance. The project area contains Tertiary-aged lignite resources exceeding 920mt, identified by previous explorers in the early 1980s. The total area of prospective Tertiary basins controlled by Heron exceeds 350km<sup>2</sup>, compared to the area of the total Collie Coalfield of 30 km<sup>2</sup>. The Balladonia Project thus represents a substantial hydrocarbon exploration target.

Compilation of exploration work by previous explorers into a GIS data base is current, to identify and prioritise areas for future development by Heron. At this preliminary stage, several conceptual targets have been developed, all of which have potential for world-class mineral deposits, and more importantly, complement the future nickel laterite processing requirements of Heron.

### *Energy*

The hydrocarbon deposits held by Heron are:

<b>Deposit Name</b>	<b>Tonnage million tonne</b>	<b>Overburden</b>	<b>Registered Holder</b>
Florabel	650	5:1	Heron
Coobaninya	270	7:1	Heron
Balladonia Homestead	No estimate calculated	No estimate calculated	Heron
<b>TOTAL</b>	<b>920</b>	<b>5.6:1</b>	

The Balladonia lignite has a higher ash content and lower specific energy values than Victorian brown coals, but is comparable to the Leigh Creek deposits being actively mined in South Australia. A positive and unusual attribute of the Balladonia lignite is its oily character. All of the Heron lignite resources have a high oil yield, being up to 150 litre per tonne. The yields are comparable to oil shale deposits such as Rundle in Queensland, which have undergone pilot scale testwork.

The Balladonia lignite has the potential, as yet untested, to yield valuable Montan Wax, which occurs elsewhere in the world in similar low rank lignite.

### *Sulphuric Acid*

The Balladonia lignite is strongly pyritic. Following flotation, this pyrite would be a suitable feedstock for sulphuric acid manufacture. Sulphuric acid is a major consumable in nickel laterite processing. This sulphur requirement was the original reason for acquiring the tenements.

### ***Limestone Neutraliser***

The overburden above the Balladonia lignite includes a 10m thickness of white Nullarbor Limestone. It is anticipated that Heron's Kalpini nickel project will consume up to 2 million tonne per annum of limestone, as a reagent in its precipitation circuit and to neutralise acid tailings.

### ***Heavy Mineral Sands***

Marine incursion in the Eocene-Miocene created an extensive Eucla Sea shoreline, with many palaeo-strandlines, which have potential for heavy mineral sand accumulations. In Eocene-Miocene times, a continental-scale system of rivers drained into the Eucla sea from the Yilgarn Block as far west as Southern Cross and Meekatharra. This vast granitic terrain provenance would have shed huge quantities of heavy minerals such as ilmenite, leucoxene and zircon into the Eucla Basin. In Heron's ground, 65km SSW of Balladonia, previous explorers have outlined a small 2 million tonne zircon-rich heavy mineral sand deposit, confirming that palaeo-environments favourable for heavy mineral sand deposition have occurred in Heron's project area. Also within Heron's ground, previous reconnaissance drilling has confirmed at least 70km of palaeo-shoreline, prospective for heavy mineral sand deposits.

This palaeo-strandline system is of comparable age and palaeogeography to the world-class Murray Basin mineral sand deposits discovered in South Australia and Victoria.

### ***Filler-grade Kaolin***

The overburden to the lignite also contains bleached kaolin, which may have potential as a filler (or coating) grade kaolin for paper manufacture. This could be a valuable by-product from any mining operation, with economic viability assisted by proximity to the Port of Esperance and Eyre Highway.

## **2.12 GAWLER CRATON PROVINCE**

### **2.12.1 G2 Project**

Heron 100%

Gold - copper - uranium - diamonds

A new joint venture partner is being sought to sole fund. Digital data bases have been prepared for evaluation by the prospective partners.

I J BUCHHORN

MANAGING DIRECTOR

The information is based on, and accurately reflects, information compiled by Ian James Buchhorn, who is a Member of the Australasian Institute of Mining and Metallurgy.



## Glossary of Terms

“Aeromagnetic Survey” means a survey made from the air, recording variations in the earth’s magnetic field.

“Anomaly” means a value higher or lower than expected, which outlines a zone of potential exploration interest but not necessarily of commercial significance.

“Aircore drilling” means a rotary drilling technique which uses compressed air to cut a core sample and return core fragments to surface inside the drill rods. The drill sample quality is generally good.

“Au” means gold.

“BCM” means Bank Cubic Metre, which is a unit of volumetric measurement of the undisturbed material in a mine.

“Co” means cobalt

“Cu” means copper.

“FOB” means the free on board price which is payable less all charges and taxes paid after the departure of the ship.

“g/t” means grams per tonne.

“Granitoid” means a family of coarse-grained igneous rocks that contain abundant quartz and feldspar.

“km” means kilometres.

“km<sup>2</sup>” means square kilometres. There is 100 hectare in 1.0 km<sup>2</sup>.

“Komatiite” means an ultramafic rock with high magnesium content extruded from a volcano. Textural variations include:

- “Orthocumulate” means a rock which exhibits a high proportion of crystallised trapped interstitial (“intercumulus”) liquid. The surrounded (“cumulus”) olivine crystals are subhedral to euhedral in form. This komatiite type is regarded as prospective for nickel sulphide mineralisation (eg Kambalda nickel)
- “Mesocumulate” means a rock with cumulus crystals exhibiting extensive mutual boundary contact, but retaining some recognisable interstitial material. This rock type is prospective for lateritic nickel.
- “Adcumulate” means a rock with little or no intercumulus material and characterised dominantly by anhedral crystals. This rock type is regarded as prospective for nickel laterite mineralisation.

“m” means metres.

“Mineralisation” means, in economic geology, the introduction of valuable elements into a rock body.

“Ni” means nickel.

“Olivine” means a magnesium-iron silicate mineral, often occurring in rocks prospective for nickel.

“Prospect” means a target upon which exploration programs are planned or have commenced.

“Project” means a grouping of prospects within a geographic location, often with a common geological setting.

“Province” means a grouping of projects within a geological district defined by a major crustal structure.

“ppb” means parts per billion.

“ppm” means parts per million (1g/t equals 1ppm, and 1000ppb equals 1ppm).

“RAB drilling” means the drilling technique in which a sample is returned to surface outside the rod string by compressed air. The drill sample may be subject to some degree of contamination.

“RC drilling” means the drilling method employing a rotating or hammering action on a drill bit which returns a sample to the surface inside the rod string by compressed air.

“ROM” means run of mine, referring to the grade and type of ore that is expected to be fed to the processing plant.

“Shear Zone” means a zone in which crushed rock has been produced by the action of a shearing stress as on a fault. This setting is often favourable for the occurrence of gold mineralisation.

“Specific Gravity” is the mass per unit volume of material, usually in reference to ore and waste.

“Waste: Ore ratio” means BCM of waste + BCM of low grade sub ore divided by BCM of ROM ore.

“Ultramafic” means rocks composed almost entirely of mafic minerals, which are prospective for nickel.

Appendix 5B

Mining exploration entity Quarterly Report

Name of entity	
Heron Resources NL	
ACN or ARBN	Quarter ended ("current quarter")
068 263 098	30 June 1999

**Consolidated statement of cash flows**

	Current Qtr \$A'000	Year to Date (9 months) \$A'000
<b>Cash flows related to operating activities</b>		
1.1 Receipts from product sales and related debtors		
1.2 Payments for: (a) exploration and evaluation	(346)	(1,723)
(b) development		
(c) production	(92)	(488)
(d) administration		
1.3 Dividends received		
1.4 Interest and other items of a similar nature received	19	84
1.5 Interest and other costs of finance paid		
1.6 Income taxes paid		
1.7 Other (provide details if material)		
<b>Net Operating Cash Flows</b>	<b>(419)</b>	<b>(2,127)</b>
<b>Cash flows related to investing activities</b>		
1.8 Payment for purchases of: (a) prospects	(107)	(351)
(b) equity investments		
(c) other fixed assets		(21)
1.9 Proceeds from sale of: (a) prospects	67	67
(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)		
<b>Net Investing Cash Flows</b>	<b>(40)</b>	<b>(305)</b>
1.13 Total operating and investing cash flows (carried forward)	(459)	(2,432)

1.13 Total operating and investing cash flows (brought forward)	(459)	(2,432)
<b>Cash flows related to financing activities</b>		
1.14 Proceeds from the issue of shares, options, etc.		1,250
1.15 Proceeds from the 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 Issue Expenses		
<b>Net financing cash flows</b>		1,250
<b>Net increase (decrease) in cash held</b>		
	(459)	(1,182)
1.20 Cash at beginning of quarter/year to date	1,745	2,468
1.21 Exchange rate adjustments 19		
<b>1.22 Cash at end of quarter</b>	<b>1,286</b>	<b>1,286</b>

**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 Qtr \$A'000
1.23 Aggregate amount of payments to the parties included in item 1.2	61
1.24 Aggregate amount of loans to the parties included in item 1.10	

1.25 Explanation necessary for an understanding of the transactions

Directors fees, salaries and superannuation (45).  
 Provision of secretarial services by director related entities (1).  
 Provision of office accommodation and yardage by director related entities (15).

**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

See attached schedule
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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		

**Estimated cash outflows for next quarter**

	\$A'000
4.1 Exploration and evaluation	450
4.2 Development	
<b>Total</b>	<b>450</b>

**Reconciliation of cash**

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to related items in the accounts as follows.

	Current Quarter \$A'000	Previous Quarter \$A'000
5.1 Cash on hand and at bank	209	68
5.2 Deposits at call	1,077	1,677
5.3 Bank Overdraft		
5.4 Other (provide details) Bank Bills		
<b>Total: cash at end of quarter (Item 1.22)</b>	<b>1,286</b>	<b>1,745</b>

**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	See attached schedule		
6.2 Interests in mining tenements acquired or increased	See attached schedule		

**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.

	Number Issued	Number quoted	Par value (cents)	Paid-up value (cents)
<b>7.1 Preference securities</b> (description)				
7.2 Issued during quarter				
<b>7.3 Ordinary securities</b>	69,600,000	69,600,000	25	25
7.4 Issued during quarter				
<b>7.5 Convertible debt securities</b> (description)				
7.6 Issued during quarter				
<b>7.7 Options</b> (description)	10,000,000	Nil	Exercise Price 25	Expiry Date 30/06/2000
	125,000	Nil	25	28/08/2001
	150,000	Nil	25	01/09/2001
	500,000	Nil	25	15/12/2001
	65,000	Nil	25	05/03/2002
7.8 Issued during quarter				
7.9 Exercised during quarter				
7.10 Expired during quarter				
<b>7.11 Debentures</b> (totals only)				
<b>7.12 Unsecured notes</b> (totals only)				

**Compliance 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.**

1. Golden State Resources NL has the right to earn a 60% equity interest in the Menzies East Joint Venture Project tenements through sole funding the initial \$250,000 of exploration.
2. Metex Resources NL has the right to earn a 70% equity interest in the Laverton Joint Venture Project tenements through sole funding the initial \$500,000 of exploration.
3. Metex Resources NL has the right to earn a 70% equity interest in the Mt Morgans Joint Venture Project tenements through sole funding the initial \$200,000 of exploration.
4. Connemara Gold Mines Pty Limited has the right to earn a 70% equity interest in the Snake Hill Joint Venture Project tenements through sole funding the initial \$300,000 of exploration.
5. Kundana Gold Pty Limited has the right to earn a 50% equity interest in the Mungari Northwest Joint Venture Project tenements through sole funding the initial \$3,000,000 of exploration.
6. Mining Project Investors Pty Limited has the right to earn a 70% equity interest in the Binduli East Joint Venture Project tenements through sole funding the initial \$750,000 of exploration.
7. Delta Gold NL has the right to earn a 75% equity interest in the Blister Dam Joint Venture Project tenements through sole funding the initial \$1,000,000 of exploration
8. Mount Kersey Mining N.L. has the right to earn an 80% equity interest in the Southern Laverton Tectonic Zone Joint Venture Project tenements through sole funding the initial \$1,200,000 of exploration expenditure. Mount Kersey will continue to sole fund exploration until a Decision to Mine is made.
9. Croesus Mining NL has the right to earn an 80% equity interest in the Edjudina and Laverton Joint Venture Project tenements through sole funding the initial \$750,000 of exploration expenditure. Croesus will continue to sole fund exploration until a Decision to Mine is made.
10. Portman Mining has entered into an option to purchase the iron ore rights for the Bungalbin and Mount Jackson Project tenements for \$25,000 and expend \$250,000 on exploration. Heron will retain a 2% FOB royalty on any Iron Ore sold from the tenements, and Heron will retain all other mineral rights.

**6.1 Interests in Mining Tenements relinquished, reduced or lapsed**

<i>Tenement Reference</i>	<i>Nature of Interest</i>	<i>Interest Beginning Quarter</i>	<i>Interest End of Quarter</i>
E28/871	Registered Applicant	100	0
E28/972	Registered Applicant	100	0
E28/973	Registered Applicant	100	0
E28/975	Registered Applicant	100	0
E38/1138	Registered Applicant	100	0
E39/550	Registered Applicant	100	0
E39/669	Registered Applicant	100	0
E39/692	Registered Applicant	100	0
E39/760	Registered Applicant	100	0
E77/897	Registered Applicant	100	0
E77/918	Registered Applicant	100	0
E77/945	Registered Applicant	100	0
E77/971	Registered Applicant	100	0
E77/972	Registered Applicant	100	0

**6.2 Interests in Mining Tenements acquired or increased**

E25/216	Registered Applicant	0	100
E25/222	Registered Applicant	0	100
E28/1056	Registered Applicant	0	100
E29/147	Sale Agreement	0	100
E29/462	Sale Agreement	0	100
E31/139	Sale Agreement	70	100
E31/143	Sale Agreement	70	100
E31/145	Sale Agreement	70	100
E31/164	Sale Agreement	70	100
E31/489	Registered Applicant	0	100
E31/494	Registered Applicant	0	100
E39/357	Sale Agreement	70	100
E39/390	Sale Agreement	70	100
E39/509	Sale Agreement	70	100
E39/813	Registered Applicant	0	100
E39/820	Registered Applicant	0	100
E69/1492	Registered Applicant	0	100
E69/1493	Registered Applicant	0	100
E77/971	Registered Applicant	0	100
E77/972	Registered Applicant	0	100
E77/975	Registered Applicant	0	100
E77/976	Registered Applicant	0	100
E77/978	Registered Applicant	0	100
E77/971	Registered Applicant	0	100
E77/972	Registered Applicant	0	100
E77/975	Registered Applicant	0	100
E77/976	Registered Applicant	0	100
M28/230	Registered Applicant	0	100

### Statement

1. This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Law 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: \_\_\_\_\_  
Company Secretary

Date: \_\_\_\_\_

Print name: \_\_\_\_\_

### Notes

1. The quarterly report is to provide a basis for informing the market how the activities of the entity for the past quarter have been financed and the effect on its cash position. Any 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. The definitions in, and provisions of, AASB 1022: Accounting for Extractive Industries and AASB 1026: Statement of Cash Flows apply to this report.
4. **Accounting Standards** ASX will accept, for example, the use of International Accounting Standards for foreign entities. If standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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