



# Cluff Resources Pacific NL

ABN 72 002 261 565

## QUARTERLY REPORT FOR PERIOD ENDING 31 MARCH 2010

### HIGHLIGHTS:

- **BULK SAMPLING BY LARGE DIAMETER DRILLING COMMENCING SHORTLY**
- **DIAMOND INDICATOR MINERALS RECOVERED FROM PELLETAL CLAYSTONE**
- **EXTENT OF PELLETAL CLAYSTONE BEING DRILLED**

### **BINGARA DIAMOND PROJECT** (Cluff 100%, Atlantic Gold 10% NPR, reducing to 5%)

An extremely exciting point has been reached in bringing the Bingara Diamond Field back to production. One hundred and eighty three diamonds have now been recovered in rubble overlying weathered pelletal claystone.

We are about to commence a bulk sampling program of this pelletal claystone to determine whether beds within it are diamond bearing, and hence the source of the overlying diamond deposit.

Recent testing has yielded indicator minerals positive for the occurrence of diamonds within this rock. Some indicator minerals have been transported no more than two kilometers, demonstrating a local source for the diamonds, and the accompanying minerals which have erupted with them.

The diamond bearing rocks of Western Australia comprise pellets of clay closely resembling the Bingara rocks in appearance, but differing in composition. Recently, however, rocks containing diamonds with similar composition and textures to those at Bingara were discovered in Ontario, Canada, (Lefebvre and others, 2005). These are now the target of focused diamond exploration by major and junior mining companies in Canada, and to date thousands of stones, both macro and microdiamonds, have been recovered.

In many parts of the Bingara field this pelletal claystone is present beneath many former mine shafts, including the Monte Christo mine, famous for its rich diamond grades. 34,000 carats of 95% gem quality rough diamonds are recorded from these mines. Four of Cluff's holes were drilled beside shafts and intersected this pelletal claystone at the depth of the diamond mining, suggesting that it was the source of the diamonds.

Microscopic studies of this thickest and coarsest part of these rocks by a consultant petrologist show they are "clastic sedimentary rocks", while the fragments within them are dominantly of volcanic rock and ash. These features are consistent with formation in a volcanic lake, and with the Bingara diamond field being regarded as "alluvial" by the NSW Mines Department over 135 years ago.

This body of pelletal claystone is concealed under almost all areas by a cover of shale. It is almost flat lying, and appears to fill a shallow depression underlain by the more steeply dipping basement rocks. Its extent is shown in the contoured figure (next page) by the northwest trending red zone, with the most intense colour representing a thickness of sixty metres. The contours represent the elevation of the base of the crater, and show it to be relatively flat. These potentially diamondiferous rocks are open to the northwest. Continuation of the core drilling will demonstrate whether or not it is filling a closed basin, as expected in a crater lake overlying a potentially diamondiferous pipe.

### **Large Diameter Drilling Bulk Sampling Program**

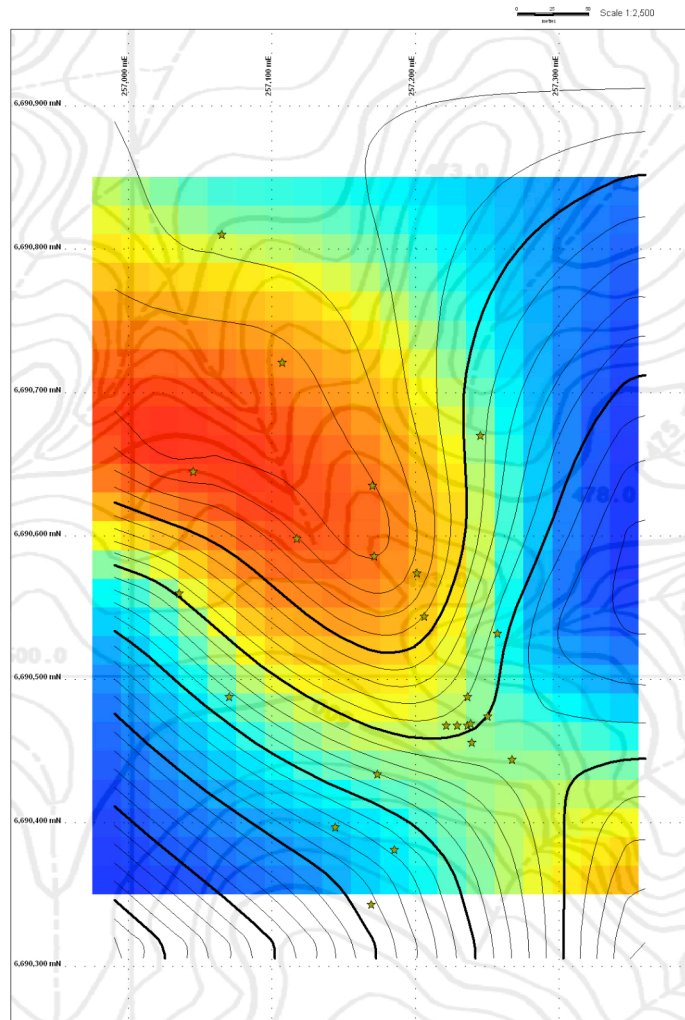
To prove that beds rich in diamonds are present within these sediments, a large diameter percussion drilling program will commence shortly to systematically sample these rocks, and to determine the grade of diamonds present and the tonnage within the limited area drilled to the present. This work is aimed at producing an inferred resource of diamonds.

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**Registered Office:**  
Suite 21, Level 7,  
44 Bridge St. Sydney 2000  
Australia  
**ASX Code:** CFR

**Postal Address:**  
Suite 21, 44 Bridge St.  
Sydney NSW 2000  
Australia

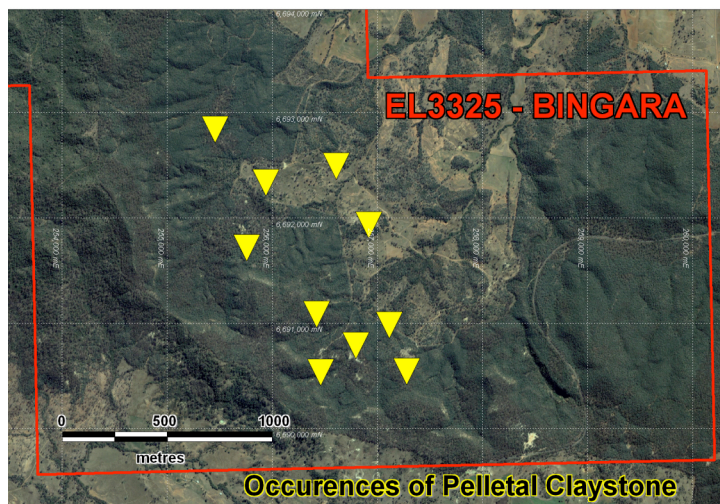
**Tele-Communications:**  
Tel: (612) 9247 2277  
Fax: (612) 9247 7055  
email: [Cluff@bigpond.com](mailto:Cluff@bigpond.com)  
Internet: [www.cluff.com.au](http://www.cluff.com.au)



**Thickness and extent of pelletal claystone (Thickest parts in red)**

The rocks to be bulk sampled are very hard volcanic lake sediments formed from large amounts of volcanic ash fragments. They have decomposed to weathered rubble and scree on an old land surface, and it was from this rubble that diamonds were recovered by the Company's recent operations.

If diamonds can be proven to occur in this possible hard rock source, the potential of this diamond field is substantial. Based on Cluff's recent drilling, and earlier modern drilling, the pelletal claystone has been identified over the area below at the locations shown by yellow triangles. They may, however, be much more extensive as diamonds have been recorded over a surrounding district of twenty five kilometers by ten kilometers.



**Locations where pelletal claystone has been intersected by modern drilling.**

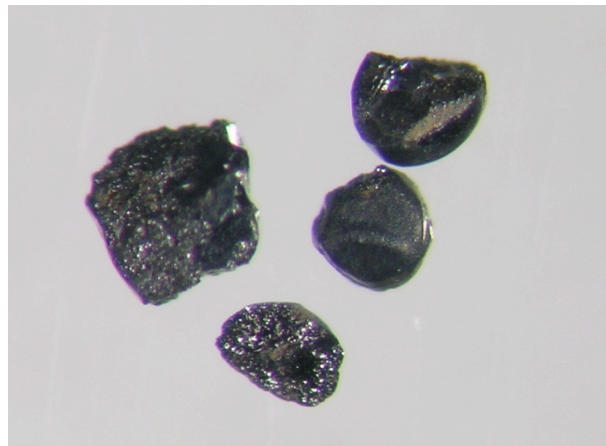
Landsat imagery shows that these diamond occurrences are within a large basin-like depression open to the north, and four kilometers across. This may be a residue of a crater lake created 217 million years old, and formerly filled to the rim with these sediments. Its central and northern parts may have eroded away, resulting in a substantial semi circular zone of crater lake sediments preserved as relics around the rim of this possible lake.

**Reference**

Lefebvre, L., Kopylova, M., and Kivi, K., 2005: Archaean calc-alkaline lamprophyres of Wawa, Ontario, Canada: Unconventional diamondiferous volcanoclastic rocks. *Precambrian Research*, 138, 57-87.

**Indicator Mineral Sampling**

Approximately 1,200 diamond indicator chromite grains, together with eight diamond indicator pyrope garnet grains and one chrome bearing diopside, have been recovered from rocks which recently produced 183 diamonds. Both occur in rubble overlying weathered pelletal claystone in the upper reaches of Doctors Creek. Forty one similar grains were recorded in an overlying clay bed.



**HVY 2/MCR45 Garnet Indicator Minerals**

**HVY 2/MCR45 Chromite Indicator Minerals**

The presence of these minerals indicates that this rock has the potential to carry diamonds. The garnets are interpreted as having travelled less than two kilometres, hence are clearly from a local source.

The indicator minerals present are outlined below, and were taken from the upper reaches of Doctor’s Creek. Indicator mineral sampling is continuing.

Sample Number	Number of Indicator Minerals	Diamond Indicator Minerals Present	Sample Weight
<b>HVY 2/MCR45</b>	Approx. 1,200	Chromite Group A, Chromite Group B	26.2 Kg
	8	Pyrope Group 1-8	
<b>HVY 1/MCR45</b>	41	Chromite Group A, Chromite Group B	22.7 Kg
<b>HVY 1/49</b>	9	Chromite	50.8 Kg
	1	Cr-bearing Diopside	
<b>HVY 6/5</b>	1	Chromite	27.8 Kg
<b>HVT 7/5</b>	1	Chromite	12.3 Kg

**Large Diameter Percussion Drilling**

The planned bulk sampling program aims to produce an inferred resource of diamonds by large diameter percussion drilling through the pelletal claystone at four sites 100 to 200 metres apart and to depths of about 60 metres.

Groups of four ten inch percussion drillholes will be drilled at each site, and the drill cuttings samples from each of the four holes will be bulked together. This will be done over each ten metre interval to produce a composite sample of percussion chips of about four tones per ten metres. Such a sample is large enough, if

grade is economic, to further crush and process at Copeton, and obtain meaningful thickness and grade data. This data can then be used to calculate an inferred resource.

## Bulk Sampling at near Surface Sites

A bulk sampling pit into hard rock to determine whether, and at what grade, diamonds are present will be completed after the large diameter drilling bulk sampling.

Pelletal claystone which appears to have been worked in a former mine has been interpreted as present at between eight and sixteen metres depth in the Doctors Creek area. This will be bulk sampled by removal of overburden to six metres depth, and by extraction of the underlying hard rock using a thirty tonne excavator with a jack hammer attachment.

The rock is expected to be hard, and to need two stages of crushing before processing. Total cost of the bulk sampling drilling and pitting program is budgeted at \$400,000.

## Core Drilling Program

Core drilling of the pelletal claystone is continuing in the Doctors Creek area, and future holes are shown below, aimed at determining the further extent and thickness of the pelletal claystone.



**Planned Core Drilling Program, and Bulk Sampling Pit, Doctors Creek:** Planned core drill holes as stars, completed drill holes as dots, bulk sampling site as triangle.

## INTERNATIONAL PROJECTS

The Indian Gold project is advancing, but there have been no further reportable developments.

## TIN PROJECTS (Cluff 100%)

Excepting DPI reporting, no activities were undertaken on Cluff's tin projects during the quarter. The Company has had several approaches to joint venture its tin projects, and these are under discussion.

## EGERTON GOLD PROJECT (Cluff earning up to 75% from Tech-Sol Pty Ltd)

There were no field activities undertaken at the Egerton Gold Project during the quarter.

## **RUBY MINE** (Cluff 100%)

The Ruby Mine remains on care and maintenance, and equipment not suitable for establishing a trommel and jig processing operation at Bingara has been sold. Water turbidity monitoring continued and lease requirements were met.

## **FINANCE**

Sale of the Company's head office and warehouse premises at Hornsby was completed at a value of \$520,000, of which \$180,000 was made available in cleared funds after the mortgage over the premises was discharged and sale costs deducted. The premises were purchased for \$330,000. The Company has subsequently relocated to new office premises in Sydney's CBD.

\$425,000 was raised via a placement to sophisticated investors, who were issued a total of 94,444,444 fully paid ordinary shares and 94,444,444 free attaching 31 July 2011 \$0.01 listed options at a price of \$0.0045 per share. Another \$500,000 has also been placed with Firebird Global Master Fund under the same terms, however approval of this placement is required by shareholders at the AGM before the funds can be made available and the securities issued.

The diamond indicator mineral results reported are based on information provided by John Towie of Independent Diamond Laboratories Pty Ltd, Perth.

The information in this report that relates to exploration results is based on information compiled by Peter John Kennewell, who is a corporate member of the Australasian Institute of Mining and Metallurgy included in a list promulgated by the ASX from time to time. Peter John Kennewell is a full time employee of Cluff Resources Pacific NL and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a competent person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Identified Mineral Resources, and Ore Reserves". Peter John Kennewell consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

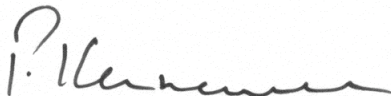
For further information contact:

Scott Enderby on Phone (02) 9482 4655

Email: [Cluff@bigpond.com](mailto:Cluff@bigpond.com) or

Peter Kennewell on Phone: (02) 9482 4655

Yours faithfully,



Peter Kennewell,  
Managing Director,  
30 April, 2010