
QUARTERLY ACTIVITY REPORT FOR THE PERIOD ENDED 31 DECEMBER 2008

- **Drilling of uranium radiometric anomalies completed at Llamara and Cerro Soledad projects.**
- **The Company had a \$4.9 million cash balance at 31 December 2008.**

URANIUM

Chile and Peru - Exploration Update

Drilling programmes at Llamara and Cerro Soledad projects were completed during the quarter. Results are available for 30 of the 37 holes drilled at Llamara and assays are awaited for the 30 drill holes at Cerro Soledad. Uranium assays were disappointing for the Llamara programme with a best intersection of 2m at 161.3 ppm U from drill hole LLRC21.

However drilling has returned significant intersections of lithium grading greater than 250ppm Li; the upper limit of sensitivity for the analytical method used. Samples grading >250ppm Li are currently being re-assayed to provide an accurate result. Results have been received for one hole to date, LLRC21 which returned 22m of 911ppm Li. The lithium results are considered highly encouraging and the potential economic significance of the results will be assessed during the next quarter.

Drilling of 48 holes commenced at Pampas during the first week of January.

Llamara and Cerro Soledad Drilling Programmes

A programme of reverse circulation drilling was completed over both the Llamara and Cerro Soledad projects during the quarter. A total of 30 holes were drilled at Cerro Soledad and 37 drill holes were completed at Llamara. The drilling was designed to test the extensive uranium-channel radiometric anomalies identified during the 2008 exploration year. Drilling was designed to test the anomalies on a 250 x 50m grid. Hole depth was 30m, although hole collapse prevented a small number of holes from reaching this target depth.

Samples were collected at 1m via a cyclone and passed through a riffle splitter to produce a sample of 1-2kg in weight for shipment to the laboratory. Holes have been probed with a down-hole Gamma Surveyor differential spectrometer with readings taken every meter. Differential spectrometer readings were also taken from the sample bags prior to shipping to the laboratory. Samples were analysed by A.L.S Laboratories in La Serena, Chile. Uranium was analysed by both XRF and ICP methods with a suite of additional elements analysed by ICP.

Considerable drilling problems were encountered in both project areas due to hole collapse caused by layers of coarse, unconsolidated sand and gravels.

Llamara Drilling Results

Uranium assays are disappointing from the 30 holes returned to date (Table 1). The maximum intersection was 2m at 161.3 ppm U from drill hole LLRC21 from 3-5m. Significant intersections ranged from 20-40ppm U over intervals of 2-10m. The distribution of the results indicates that as anticipated, uranium is stratabound to particular horizons but the erratic grades indicate that the distribution of organic material in the sediments at Llamara is insufficient to provide for ore grades over significant widths. There is also a tendency for near-surface enrichment in many holes which may reflect some form of evaporative process operating.

Assays for lithium have returned potentially very high values. Lithium was assayed on a reconnaissance basis in soil samples early in the programme in 2008, returning very high assays to 1200ppm Li. This was considered to be a near surface enrichment in the Soledad Formation. However the Llamara results show that lithium is strongly stratabound and is distributed in many cases at high levels over the entire length of the hole. The ICP methods used for analysis has an upper detection limit of 250ppm Li. Those samples with Li >250ppm are currently being re-assayed. One hole, LLRC21, has been re-assayed and has returned a very high result of 22m at 911ppm Li.

The lithium results are considered highly encouraging and the potential economic significance of the results will be assessed during the next quarter.

Proposed Third Quarter Exploration

Exploration during the third quarter will consist of the completion of drilling on the Pampas and Salar Grande projects and the complete assessment of results from all four drill programmes.

CORPORATE

FINANCIAL POSITION

At the end of the quarter Lefroy had a cash balance of \$4.9 million.

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The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Carl Swensson who is a Member of the AUSIMM. Mr. Swensson is a Director of the Company. Mr. Swensson 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, Mineral Resources and Ore Reserves". Mr. Swensson consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Table1: Summary Results for Uranium and Lithium, Llamara Project

| Hole | Depth(m) | Uranium | | | | Lithium | | | |
|--------|----------|---------|----|--------|-----------|---------|----|--------|-----------|
| | | From | To | Meters | Grade ppm | From | To | Meters | Grade ppm |
| LLRC01 | 30 | 13 | 18 | 5 | 20 | 16 | 30 | 14 | >250 |
| LLRC02 | 30 | 2 | 4 | 2 | 32.5 | 7 | 30 | 23 | >250 |
| LLRC03 | 30 | 0 | 9 | 9 | 27.83 | 0 | 20 | 20 | >250 |
| LLRC04 | 30 | | | | NSA## | 18 | 23 | 5 | >250 |
| LLRC05 | 30 | 0 | 6 | 6 | 39.9 | 0 | 19 | 19 | >250 |
| LLRC06 | 30 | 2 | 9 | 7 | 43 | 0 | 21 | 21 | >250 |
| LLRC07 | 30 | | | | TBA** | | | | TBA |
| LLRC08 | 30 | | | | TBA | | | | TBA |
| LLRC09 | 30 | 0 | 6 | 6 | 54 | 0 | 26 | 26 | >250 |
| LLRC10 | 30 | | | | TBA | | | | TBA |
| LLRC11 | 30 | | | | TBA | | | | TBA |
| LLRC12 | 30 | | | | NSA | 0 | 22 | 22 | >250 |
| LLRC13 | 30 | | | | TBA | | | | TBA |
| LLRC14 | 30 | | | | TBA | | | | TBA |
| LLRC15 | 30 | | | | NSA | 0 | 24 | 24 | >250 |
| LLRC16 | 30 | | | | TBA | | | | TBA |
| LLRC17 | 14 | | | | NSA | 0 | 14 | 14 | >250 |
| LLRC18 | 30 | 0 | 10 | 10 | 63.9 | 0 | 30 | 30 | >250 |
| | | 3 | 5 | 2 | 161.3 | | | | |
| LLRC19 | 30 | 8 | 16 | 8 | 33.1 | 8 | 30 | 22 | >250 |
| LLRC20 | 28 | 3 | 8 | 5 | 36.4 | 0 | 24 | 24 | >250 |
| LLRC21 | 22 | 0 | 1 | 1 | 33 | 0 | 22 | 22 | 911 |
| LLRC22 | 30 | | | | NSA | 4 | 27 | 23 | >250 |
| LLRC23 | 30 | 15 | 16 | 1 | 36 | 2 | 23 | 21 | >250 |
| LLRC24 | 30 | 0 | 7 | 7 | 33 | 0 | 17 | 17 | >250 |
| LLRC25 | 30 | 2 | 3 | 1 | 27 | 0 | 17 | 17 | >250 |
| LLRC26 | 30 | | | | NSA | 0 | 10 | 10 | >250 |
| LLRC27 | 30 | 1 | 8 | 8 | 41.4 | 0 | 20 | 20 | >250 |
| LLRC28 | 30 | 2 | 11 | 9 | 26 | 1 | 23 | 22 | >250 |
| LLRC29 | 30 | 6 | 7 | 1 | 47.2 | 0 | 15 | 15 | >250 |
| LLRC30 | 30 | 10 | 16 | 6 | 37 | 1 | 30 | 29 | >250 |
| LLRC31 | 30 | 2 | 10 | 8 | 45.7 | 0 | 20 | 20 | >250 |
| LLRC32 | 30 | 3 | 4 | 1 | 27.7 | 0 | 25 | 25 | >250 |
| LLRC33 | 30 | 0 | 3 | 3 | 39.7 | 0 | 21 | 21 | >250 |
| LLRC34 | 30 | 0 | 4 | 4 | 53.3 | 0 | 24 | 24 | >250 |
| LLRC35 | 30 | 1 | 17 | 16 | 30.5 | 1 | 28 | 27 | >250 |
| LLRC36 | 30 | | | | NSA | 14 | 30 | 16 | >250 |
| LLRC37 | 30 | 1 | 3 | 2 | 44.4 | 0 | 30 | 30 | >250 |