ANNUAL REPORT for LINDEMANS’ BORE

FOR THE PERIOD 29 December 2010 to 28 December 2011

Commodity: Nickel, Copper & Platinum Group Elements

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Title Holders: Proto Resources & Investments Ltd (Operator)
  N Scriven & R Johnston

Map Sheet: 1:250,000 Limbunya SE 52-07
            1:100,000 Gregorys Depot 4963
            1:100,000 Mt Barton 4962

Datum: GDA94, Zone 52

Compilation Date: 28 February 2012
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ProtoResources & Investments Ltd

EL25307 Annual Report for Lindemans’ bore for the period 29 December 2010 to 28 December 2011

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Abstract

The Lindeman’s Bore Project is located approximately 400km SW of Katherine in the Northern Territory. The region is dominated by a series of Proterozoic metasediments overlain by Cambrian-age continental flood basalts of the Kalkarindji Volcanic Group. The Kalkarindji Volcanic Group is considered to be analogous to continental flood basalts in other parts of the world, most importantly the Nadezhdinsky series (Norilsk basalts) which host the world’s largest Ni-Cu-PGE deposits at Norilsk in Russia.

Exploration activities conducted by Proto Resources & Investments Ltd (Proto) and their JV partners are based on the possibility of the Antrim Plateau Volcanics (as part of the Kalkarindji Volcanic Group) hosting economic “Norilsk-style” Ni-Cu-PGE mineralisation.

Previous work by ProtoResources & Investments Ltd on EL25307 has included two previous deep diamond drillholes LBD 1 drilled in June 2009 to 751m and LBD 2 drilled in December 2009 to a depth of 751.6m. 2009 also included a 45 sample soil programme and a fixed loop ground EM survey completed over the collar areas of LBD 1 and LBD 2 in December 2009. Petrographic and rock geochemical studies were undertaken on drill core from LBD 1 by consulting geologist Dr Martin Gole. 2010 saw regional re-imaging of available data and a ZTEM survey over EL 25307. The Queensland University of Technology and Open University review concluded that the Kalkarindji Continental Flood Basalts needed a comprehensive assessment to conclude whether they represent a potential Norilsk type analogue.

Work during the reporting period has included the interpretation of the ZTEM Airborne survey, FLTEM ground geophysics survey and interpretation, commencement of drilling of diamond drill hole LBD 3 where 108m of diamond drilling was completed before drilling was postponed. Open University collaboration has been confirmed with the secondment of the volcanologist Dr Mike Widdowson to head the projects and the construction of a database to help identify further targets in the Northern Territory.

Work for the upcoming year (2012-2013) should include the completion of LBD 3 (drilling, logging, sampling and interpretation). It should also allow for any planning of future holes if the results are positive.
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Note: All maps are in datum GDA94 (Zone 52)
1. INTRODUCTION

The Lindeman’s Bore Project is located approximately 400km SW of Katherine in the Northern Territory. The region is dominated by a series of Proterozoic metasediments overlain by Cambrian-age continental flood basalts of the Kalkarindji Volcanic Group.

The Kalkarindji Volcanic Group is considered to be analogous to the Nadezhdinsky series (Norilsk basalts) which host the world’s largest Ni-Cu-PGE deposits at Norilsk in Russia.

Exploration activities conducted by Proto Resources & Investments Ltd (Proto) and their JV partners are based on the possibility of the Antrim Plateau Volcanics hosting economic “Norilsk-style” Ni-Cu-PGE mineralisation. Jones (2009)

2. PROPERTY DESCRIPTION AND TENURE

EL25307 of 112 sub-blocks was granted to N.Scriven and R.Johnston on 29 December 2006 for a period of six years. Since this time a Farm-In agreement has been struck with Proto Resources & Investments Ltd which commenced in April 2007. Jones (2009)

Table 1: Tenement Details

<table>
<thead>
<tr>
<th>Licence Number</th>
<th>Sub-blocks</th>
<th>Grant Date</th>
<th>Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>25307</td>
<td>112</td>
<td>29-Dec-06</td>
<td>28-Dec-12</td>
</tr>
</tbody>
</table>

3. ACCESSIBILITY AND INFRASTRUCTURE

The tenement is located approximately 800km south of Darwin and is accessed via the Stuart, Victoria and Buntine Highways. It is situated on Limbunya Station and lies approximately 50km west of Kalkarindji and 9km north of the Buntine Highway (Figure 1). The licence lies within the Limbunya Station Perpetual Pastoral Lease and is not subject to Native Title. Jones (2009)
Figure 1: Location of EL25307 on local topography with inset showing location relative to Katherine. Plans in GDA94.
4. GEOLOGICAL SETTING

Jones (2009) states the exploration licence is centred on a bulls-eye magnetic anomaly hosted in an area of mid-Proterozoic metasediments and Cambrian Antrim Plateau Volcanics (Figure 2). The licence area is covered by the Limbunya 1:250,000 scale map sheet (Cutovinos et al., 2002). A syncline forms the dominant structural feature with the surface expression of the magnetic anomaly occurring near the core of the syncline. The anomaly is modelled to represent a basic body associated with the Antrim Plateau Volcanics.

The Antrim Plateau Volcanics make up part of the Kalkarindji Volcanic Group Continental Flood Basalt Province. This province is considered analogous to continental flood basalts in other parts of the world, most importantly the Nadezhdinsky series (Norilsk basalts) which host the world’s largest Ni-Cu-PGE deposits at Norilsk in Russia. The PGE, Ni and Cu depletion from the Nadezhdinsky series has been attributed to assimilation of continental crust, which stimulated sulphide segregation, thus sequestering the chalcophile elements from the basaltic magma. The correspondingly low PGE and Ni values for the Kalkarindji basalts may indicate a similar process took place (Glass, 2002).

Within the Licence area the oldest rocks exposed are micaceous sub-litharenites, siltstone and mudstone of the Farquharson Sandstone of the Limbunya Group. These are in turn overlain by dolomitic mudstone, dololutite, stromatolitic dololutite, dolarenite and minor tuffite of the Blue Hole Formation also part of the Limbunya Group. In the north the Wickham Formation which makes up the basal formation of the Wattie Group outcrops as quartz sandstone, while to the south the Cambrian Antrim Plateau Volcanics lie in contact with the Blue Hole Formation. The majority of the licence area is dominated by Cainozoic ferruginous duricrust cover with subordinate Quaternary alluvium, colluvium and black soil plains.
Figure 2: Regional surface geology from NT 1:1,000,000 mapping. Plan in GDA 94.
5. PREVIOUS EXPLORATION

Previous exploration is covered in Proto Resources Annual Report for EL25307 (Jones, 2009). A brief summary follows.

• Majority of previous exploration in the district has been for diamonds.

• Base metal mineralisation was explored for in the Limbunya Group of sediments some 20km south of EL25307. Only low-grade copper sulphide mineralisation was associated with veins in the graphitic shales of the Inverway Metamorphics (Eupene, 2002).

• Delta Gold first recognised the circular magnetic anomaly currently being explored in NTGS Data. They completed a single ground magnetic traverse and concluded the top of the body lay between 300 and 1000m (Eupene, 2002).

• N. Scriven and R. Johnston exploration has concentrated on the magnetic anomaly. The NTGS geophysical data was re-assessed and the depth to top elevated to 200m. The most likely source was interpreted to be a basic body associated with the Antrim Plateau Volcanics. Ground magnetic data was acquired across the anomaly which defined the target as a “comet shaped ellipsoid with dimensions of 1000m by 500m located on a black soil plain”. Additional work included a literature review which revealed a PhD thesis drawing broad comparisons between the Antrim Plateau Volcanics and the Norilsk continental flood basalts. A number of stream sediment samples were taken to determine the presence of diamond and kimberlite indicator minerals. No kimberlite source was identified.

• Proto Resources has completed ground magnetic and ground gravity surveys over the bulls-eye anomaly. The Ground Magnetic Survey confirmed existing data an elliptical shaped magnetic anomaly with a diameter of ~3 km and a depth to top of ~500-800 m with a magnetic susceptibility of 0.03 SI – 0.05 SI (Turnbull, 2008). The ground based gravity survey identified a broad 25 gravity unit (gu) anomaly with a ~3 km north south wavelength and has been interpreted to be derived from the same source causing the magnetic anomaly seen in the ground based magnetic data. Modelling of the gravity data indicated a body with a depth to top of ~500 m and a density of between ~0.2 and 0.4 grams per cubic centimetre (g/cc) above the back ground density (Turnbull, 2008).
• During 2008 – 2009 Proto completed the drilling of two vertical diamond core drill holes (LBD 1 drilled in June 2009 to a depth of 751m and LBD 2 drilled in December 2009 to a depth of 751.6m), a soil sampling program of 45 samples around the collar area of LBD 1 undertaken in December 2009 and a fixed loop ground EM survey completed over the collar areas of LBD 1 and LBD 2 in December 2009. In addition, petrographic and wholerock geochemical studies were undertaken on drill core from hole LBD 1 by consultant geologist Dr Martin Gole.

Drill hole LBD 1 was designed to test a conceptual Ni-Cu-PGE target and was partially funded by the NTGS *Bringing Forward Discovery* initiative.

At the time of reporting assay results have been received from drill hole LBD 1 and from the soil sampling program. Ground EM survey results have been interpreted. Drill hole LBD 2 was partly completed and will be presented as a whole in the current year Annual Report.

Assays from drill hole LBD 1 identified two zones of particular interest.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Depth Range</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 1</td>
<td>32 to 56m</td>
<td>24m @ 4.92g/t Ag and</td>
</tr>
<tr>
<td>Zone 2</td>
<td>380 to 391m</td>
<td>5m @ 0.13g/t Au from 380m and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6m @ 0.03% Co &amp; 0.05% Cu from 385m</td>
</tr>
</tbody>
</table>

-7m @ 1.1g/t Au from 424 – 431m including 1m @ 5.32g/t Au and 1m @ 0.45g/tPd
-14m @ 0.11% Cu from 467m to 481m. Within this interval short sulphide sections were sampled returning 5760, 2680 and 2290ppm Cu.

-1m @ 0.14% Ni and coincident 1m @ 152ppm Co from 452m
6. EXPLORATION COMPLETED DURING THE REPORTING PERIOD 29\textsuperscript{TH} DECEMBER 2010 TO 28\textsuperscript{TH} DECEMBER 2011.

Work during the reporting period has included:

- Interpretation of the ZTEM airborne survey
- FLTEM ground geophysics survey and interpretation
- Commencement of drilling of diamond drill hole LBD 3 where 108m of diamond drilling was completed before drilling was postponed.
- Open University (UK) collaboration confirmed.

6.1 Open University (UK) Collaboration

During October research sponsorship was finalised. Leading volcanologist Dr Mike Widdowson of the Open University (UK) was seconded to an exploration collaboration centred on ProtoResources & Investments Ltd Waterloo Project. The collaboration will involve a PhD student whose aim will be to combine data to constrain the ‘broader geological setting and evolution on the Antrim Plateau Volcanics’. The PhD is titled “Architecture, chemostratigraphy and economic prospectivity of the Central Kalkarindji Flood basalt Province, Australia.” The programme will involve support for a database, a “virtual spatial framework” of structural geology, geochemistry and already identified geophysical anomalies used to site future exploration in the Northern Territory. The project will be funded jointly with Open University (UK) from October 1, 2011 to 30 September 2014.

6.2 ZTEM Airborne Geophysical Survey

The ZTEM airborne geophysical programme commenced during December 2010. The processing will be completed during February 2011. The survey covered Lindeman's Bore (EL25307) and the Wave Hill Tenements (Els 27413, 27617 and 217618) for a total of 957 line kilometres at 1 kilometre line spacing.

6.2.1 The ZTEM Survey

Helicopter-Borne Z-Axis Tipper Electromagnetic (ZTEM) and Aeromagnetic Geophysical Survey at Lindemans Bore outlined “small anomalies and deeper resistivity breaks,
particularly in the low frequencies that are associated with the main magnetic anomaly” where previous drilling (LBD1 & LBD2) has been located (Swensson, Carl., 2011-04-20, Stock Exchange Announcement).

In order to fully test the results a 2D forward modelling was performed over the area. “This used a sub-horizontal conductive body (at 250, 500 and 750m depth) with a 2000x500m size and 1000S (siemens) conductance. The surrounding host rocks were postulated to be highly resistive (2000 ohm-m) and over burden was anticipated to be conductive (0-20S). The 2D forward modelling suggested that the ZTEM survey technique could prove an effective tool provided that the overburden is not overly conductive and the targets are situated <500-750m depth.” (Swensson, Carl., 2011-04-20, Stock Exchange Announcement).

Lindemans’ Bore results suggest several smaller anomalies and deep resistivity breaks that are associated with the ‘Bulls-eye magnetic anomaly’ that is stand out in the magnetic images. The following figures show ZTEM observations at three different frequencies (36,150 & 300Hz). “These depict distinctive linear positive trends (solid black lines) oriented in a NW-SE direction just to the north of the LBD2 drill hole. The magnetic image (bottom right) highlights the known circular magnetic anomaly at the main prospect where previous drilling has been focused around magnetic/gravity anomalies. This magnetic anomaly is positively correlated with small ZTEM anomalies with variable trends. These become relatively stronger at lower frequencies and demonstrate a ring-like pattern beneath the magnetic suggestive of conductive zones. The strongest anomaly is 800m north of the position of LBD1 and is approximately 1.5km east of LBD1.” (Swensson, Carl., 2011-04-20, Stock Exchange Announcement).
Figure 3: ZTEM survey results (37, 150 and 300Hz) and Magnetics (lower right).
6.3 FLTEM Ground Geophysical Survey

During September/October 2011 two Fixed Loop TEM (FLTEM) surveys were completed by Outer Rim Exploration Services Pty Ltd. The aim of the survey was to corroborate and outline bedrock anomalies associated with the ZTEM target identified in the earlier survey. The ZTEM result is approximately 1.5-2km south east of LBD1 (deep drillhole).

“All data was acquired with a Crone PEM Coil (dB/dt) combined with a Crone PEM receiver working at a base frequency of 1.67Hz. The large transmitter loops (both 1000x1000m) utilised during this programme were powered by a Crone PEM transmitter working at ~20A current (single turn loops).” Peebles, P., 2011-11-04, Stock Exchange Announcement.

The FLTEM survey data highlighted a new ‘new broad tabular target at ~250-400m depth’ in the area of the ZTEM anomaly. Analysis has indicated that the size of the target is large (>500x 500m), a potential thick conductive unit and ‘potentially steeply orientated and is aligned in a NNE-SSW direction. Modelled conductance levels were low to moderate (~50-500S+).’ Peebles, P., 2011-11-04, Stock Exchange Announcement.

A proposed new hole (LBD03) is to be drilled to test this deep bedrock conductor. Proposed hole details are as follows: 621000E, 8065700N, 75 dip > 090 azimuth, ~600-800m EOH, target level ~300-500m+

**Figures 4 and 5** highlight the FLTEM surveying completed with respect to the ZTEM priority target and the FLTEM modelling results with the proposed LBD03 target hole highlighted.
Figure 4: Lindemans Bore FLTEM Surveying with proposed LBD3 location and ZTEM imagery.

Figure 5: Lindemans Bore FLTEM Survey Model Results with proposed LBD3 location
Figure 6: EL25307 Lindemans Bore Project Ground EM Lines Location over topography
6.4 Diamond Drillhole LBD 3

During December 2011 LBD3 was commenced using Wild Drilling Services Ltd. The Diamond Hole was collared vertically and reached a depth of 108m before the hole was cancelled due to slow penetration rates and increasingly poor weather.

LBD3, as previously discussed was targeted to test a 500m x 500m electromagnetic anomaly generated initially by the ZTEM airborne survey and confirmed by the FLTEM survey. ProtoResources believes that this anomaly may represent a sulphide target with the presence of base metal sulphides confirmed in LBD1.

Currently, only preliminary observations have been made on the core. These are to be found in Appendix 1 as 'LBD03 Assessment'. This is because the hole has not reached the target depth of 300-500m. No geochemical data has been collected to date.

Table 2: Collar Location Details (GDA94)

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>Northing</th>
<th>Easting</th>
<th>Datum</th>
<th>Dip</th>
<th>Current Depth (m)</th>
<th>Final Depth (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBD 3</td>
<td>8065700</td>
<td>621000</td>
<td>MGA94_Zone52</td>
<td>Vertical</td>
<td>108</td>
<td>600-800</td>
</tr>
</tbody>
</table>

Preliminary logging of the hole LBD3 shows that the first 50m of the hole were largely lost due to being heavily oxidised and broken metasediment (weathered regolith). From 50m on to 108m the lithology intersected is near flat (<10 degrees) carbonate rich sediments of the Limbunya Group with minor sandstone.
Figure 7: EL25307 Lindemans Bore, NTGS Geology, Previous Drilling – LBD 1,2 and current drilling – LBD 3. Plan in GDA94.
7. CONCLUSIONS AND RECOMMENDATIONS

2011 provided Proto Resources & Investments the opportunity to follow through with data obtained from December 2010 ZTEM Airbourne geophysical survey.

An anomaly from the ZTEM survey was identified approximately 1.5km south east of LBD1. This was followed up with a FLTEM ground geophysical survey which identified a 500m x 500m tabular body that is believed to represent a sulphide target.

LBD3 was to target this anomaly during December unfortunately the target depth of 300m – 500m was not met and the hole was postponed at 108m because of poor weather and poor recovery of sample. Currently the sample from the hole has been logged preliminarily but no geochemical samples have been taken.

During October research sponsorship was finalised confirming that leading volcanologist Dr Mike Widdowson of the Open University (UK) was seconded to an exploration collaboration centred on ProtoResources & Investments Ltd Waterloo Project. The collaboration will involve a PhD student and will involve support for a database, a “virtual spatial framework” of structural geology, geochemistry and already identified geophysical anomalies used to site future exploration in the Northern Territory.

2012 should see the completion of LBD3 with hopefully positive results allowing for the planning of follow up holes to identify a world class resource.
8. REFERENCES


Appendix 1 – LBD 3 Data

- Current Core photos
- Preliminary Drill Report
Core Photos, 0-108m, Trays 1 to 7.

Diamond Drill Hole LBD-3
Tray 1
Diamond Drill Hole LBD-3

Tray 2
Diamond Drill Hole LBD-3

Tray 3
Diamond Drill Hole LBD-3

Tray 4
Diamond Drill Hole LBD-3

Tray 5
Diamond Drill Hole LBD-3

Tray 6
Diamond Drill Hole LBD-3

Tray 7
Preliminary Drill Report – LBD3

- See Attached file - “LBD03 Assessment.pdf”
Appendix 2 – Ground Geophysics

Data - See Attached “Proto_LB_ForClient” for FLTEM data.