

**JAGUAR MINERALS LIMITED  
WILSON RIVER PROJECT  
EL 23/2003  
ANNUAL REPORT FOR THE PERIOD  
28 NOVEMBER 2010 – 27 NOVEMBER 2011**



JAGUAR MINERALS LIMITED

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**KEY WORDS:** Sphalerite, galena, Betts Track, serpentinitised ultramafic rocks, listwanites, Meredith Granite, Heazelwood Ultramafic Complex, alteration, dolomite, sericite, fuchsite, skarn minerals, actinolite, biotite.

**MAP SHEETS:** SK55-3 BURNIE  
Map 1:50/100,000: Macintosh.  
Map 1:25,000, Luina 3640

ALL COORDINATES WITHIN ARE GDA66, ZONE 55

## EXECUTIVE SUMMARY

The Wilson River Project is located in NW Tasmania about 65 kilometres SW of Burnie and 10 kilometres SW of Waratah. The geology of the Wilson River area contains a central band of allochthonous Cambrian serpentinitised ultramafic rocks, porphyritic boninitic basalts and andesites of the Heazelwood Ultramafic Complex. Siltstones, greywackes, mudstones and tholeiitic basalts of the Early Cambrian turbiditic Cleveland-Waratah association occur to the west of the allochthonous terrain. The Devonian Meredith Granite intrudes the sequence to the south and east of the tenement area.

No field work was carried out by Jaguar Minerals in this reporting period. There exist several untested targets within the Wilson River Project, and Jaguar continues to actively seek a viable JV partner to further exploration on the tenement.

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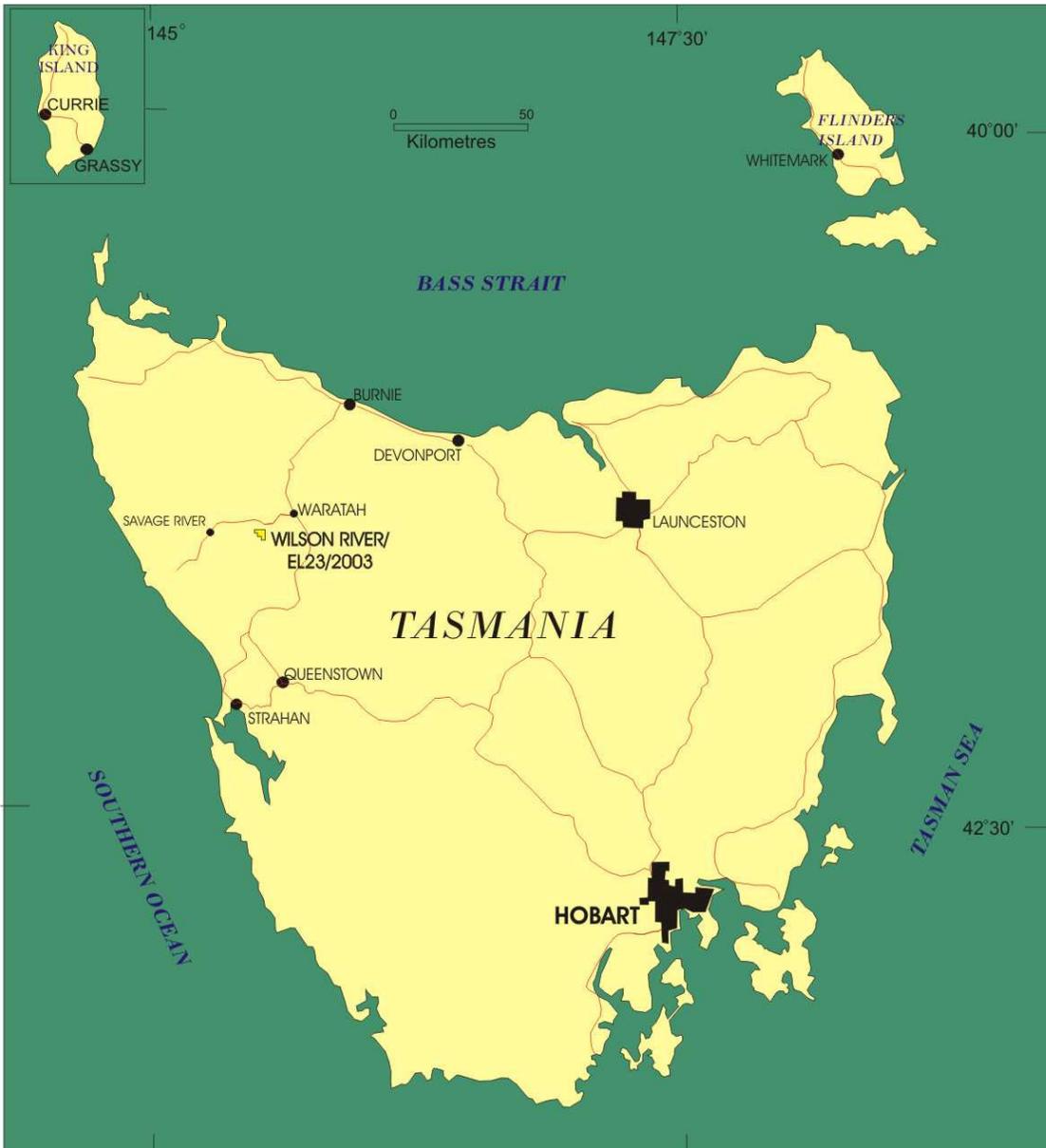
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### 1.0 LOCATION

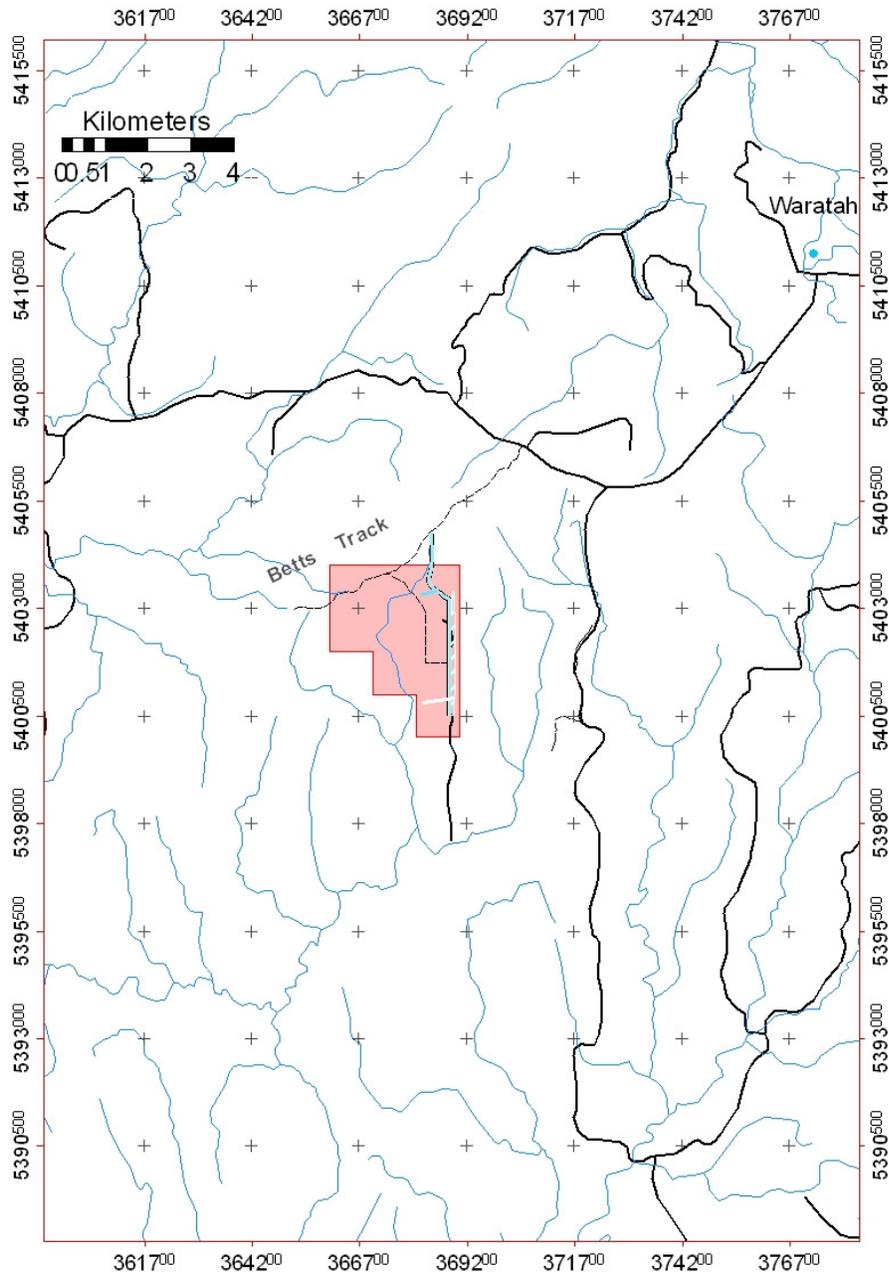
The Wilson River Project is located 10 kilometres south west of Waratah on the West Coast of Tasmania. Access is gained from Betts Track, an old logging track that comes off the Waratah – Savage River bitumen road, for a distance of 4.5 km (Figure 2). Betts Track is marked on the Luina 1:25K topographic map (3640). The area lies within the Meredith Range Regional Reserve and is overlain by high quality wilderness.



**Figure 1:** Regional Location Diagram for EL23/2003

**2.0 TENURE**

The Wilson River project consists of ELA 23/2003 with an area of 9 km<sup>2</sup>. Jaguar Minerals obtained the tenement from Herald Resources who had an option to purchase agreement with the tenement holder, New Challenge Resources Pty Ltd. Land tenure within EL 23/2003 is of the Meredith Range Regional Reserve with a very small area on the extreme eastern boundary managed as a Forest Community.



**Figure 2: Tenement Location for EL23/2003**

## 3.0 GEOLOGY

### 3.1 Regional Geology

The oldest rocks in the area consist of Proterozoic and Early Cambrian porphyritic andesitic lavas, serpentinised ultramafics, gabbro and minor sedimentary rocks. Proterozoic turbidites and early Palaeozoic rocks may be entirely allochthonous (i.e. over-thrust) though there is general agreement that only the Early Cambrian assemblage of ultramafics, sediments and basalts is allochthonous. Allochthon emplacement was from the east and occurred at much the same time as metamorphism and deformation in the Arthur Lineament and in the terrain that lies east of the Mt Read Volcanics. Collectively, these events marked the initial phase of the Tyennan Orogeny ( $\cong$  Delamerian Orogeny). Volcanism and unstable clastic sedimentation occurred during the remainder of the Tyennan Orogeny, which persisted to the end of Cambrian times. The orogeny was followed by stable conditions in the Ordovician, when shelf carbonates were deposited, and these stable conditions continued into Siluro-Devonian times with the accompanying deposition of clastic sediments and minor carbonates.

Another period of folding called the Tabberabberan Orogeny took place in the Devonian and was a prelude to widespread granitoid intrusion that continued into the Carboniferous. Relatively undeformed cover rocks of Carboniferous to Cainozoic age overly the granitoids. Granite and adamellite are more abundant than granodiorite in the granitoid intrusions, which were emplaced at high crustal levels and have narrow contact aureoles. Both I-type and S-type granitoids are present and some phases have been grouped as magnetite-series, others as ilmenite-series. Tourmaline may be common either in nodules or as quartz-tourmaline greisen. Fluorite, topaz, cassiterite and sulfides may also be present. The chemical and isotopic characteristics of the granitoids indicate that they were derived by partial melting of a range of different igneous and sedimentary source rocks of mostly Palaeoproterozoic to Mesoproterozoic age. Some of the melts subsequently underwent crystal fractionation.

North western Tasmania is a richly mineralised region that is a significant province for tin-tungsten deposits, which are associated with the Devonian to Carboniferous granitoids. Polymetallic silver lead zinc deposits form haloes around centres of Devonian tin mineralisation. Major tin deposits of the iron sulphide replacement type fall within the 4 km granite isobath, many near the 1 km contour, as do the more significant silver lead zinc vein deposits. (Green, 1990). The Avebury nickel deposit is a newly recognised style of granitoid-related mineralisation that has extended the prospectivity of the Cambrian ultramafic complexes beyond the previously known, small occurrences of nickel sulfides, chromite and platinoids. The Avebury deposit is in ultramafic rocks near the contact of the Heemskirk Granite. Sulfur-bearing hydrothermal fluids emanating from the granite are thought to have mobilised nickel in the ultramafics and to have facilitated the concentration of the metal. North western Tasmania is also a significant province for polymetallic base metal and gold deposits of middle to late Cambrian age, which occur in the Mount Read Volcanics. Substantial mineral deposits of apparently older age (?Neoproterozoic) occur in the Arthur Lineament. These include magnetite-pyrite and magnesite-dolomite.

### 3.2 Local Geology

In EL23/2003 the Devonian Meredith Granite has intrusive contacts with part of the Early Cambrian, allochthonous suite of ultramafics, sedimentary rocks and basalts. The Early Cambrian rocks in the tenement consist of porphyritic lavas, serpentinised ultramafics, gabbro and minor sedimentary rocks.

Boninitic compositions characterise the lavas, which include basalt and high magnesium andesite and interlayered breccia. The serpentinised ultramafics are undifferentiated, but elsewhere in the region there are primary associations of layered pyroxenite-dunite and layered dunite-harzburgite.

Two phases of the Meredith Granite are present. A less felsic phase in the east that is called the Wombat Creek phase, and a more felsic phase in the west that makes up a large part of the Meredith Granite outside of EL23/2003. The Wombat Creek phase is an equigranular to sparsely porphyritic, biotite adamellite with minor hornblende, while the western phase consists of very coarse grained, biotite granite with numerous intrusions of porphyritic biotite granite (McClenaghan, in prep.). The Wombat Creek phase is I-type whereas the western, felsic phase is S-type. Quartz-tourmaline greisen is common in the felsic phase on a regional basis.

### **3.3 Structure and mineralisation**

Regional geophysical interpretation indicates that the Meredith Granite dips north beneath the Early Cambrian rocks in EL23/2003 Wilson River (Leaman and Richardson, 2003). There are no historical prospects within the tenement, but the old workings of the Cleveland tin-copper mine (carbonate replacement) are located some 4 km to the North West while the old South Bischoff tin field is located 3 km to the east in the Wombat Creek adamellite. Tin greisen was mined in the South Bischoff field. Scattered, fracture related lead-zinc-silver prospects are present in Early Cambrian rocks a few kilometres to the north.

## **4. WORK COMPLETED**

### **4.1. Previous Exploration by Jaguar Minerals within EL23/2003.**

In June 2005, Jaguar Minerals sampled 15 soil sample lines on a 250m x 50m sample grid. (Busbridge, 2005). A total of 228 soil samples and 27 rock chip samples were collected. These samples were submitted to ALS laboratories in Perth for 36 element analysis by ICPMS (ALS method ME-MS81). Assays are located in (Busbridge, 2005).

Following leveling, re-processing and re-interpretation of the soil geochemistry database, a 2.8-kilometre long zinc-lead-silver anomaly was identified. The anomaly straddles the contact between the Cambrian Heazelwood Ultramafic Complex and the Meredith Granite.

Four helicopter supported diamond holes (WRD01-WRD04) were drilled for a total of 405.2m in 2005-2006. Their locations, with respect to the regional aeromagnetics, are shown on Figure 3.

WRD03 intersected 5 separate intervals assaying more than 1% zinc and each displaying visible coarse grained sphalerite and galena. Chalcopyrite is rare and occurs as free euhedral grains associated with galena. The mineralisation occurs within 10m of the ultramafic granite contact and is hosted within a dolomite and quartz rich series of veins. Textures vary from cherty to brecciated vein style. Host is a skarniferous and brecciated ultramafic and granite shear zone. WRD04 also intersected anomalous zinc and lead in a pervasively potassium altered porphyritic to equigranular phase of the Meredith Granite. Significant assays are listed in Table 2 of Busbridge, 2006.

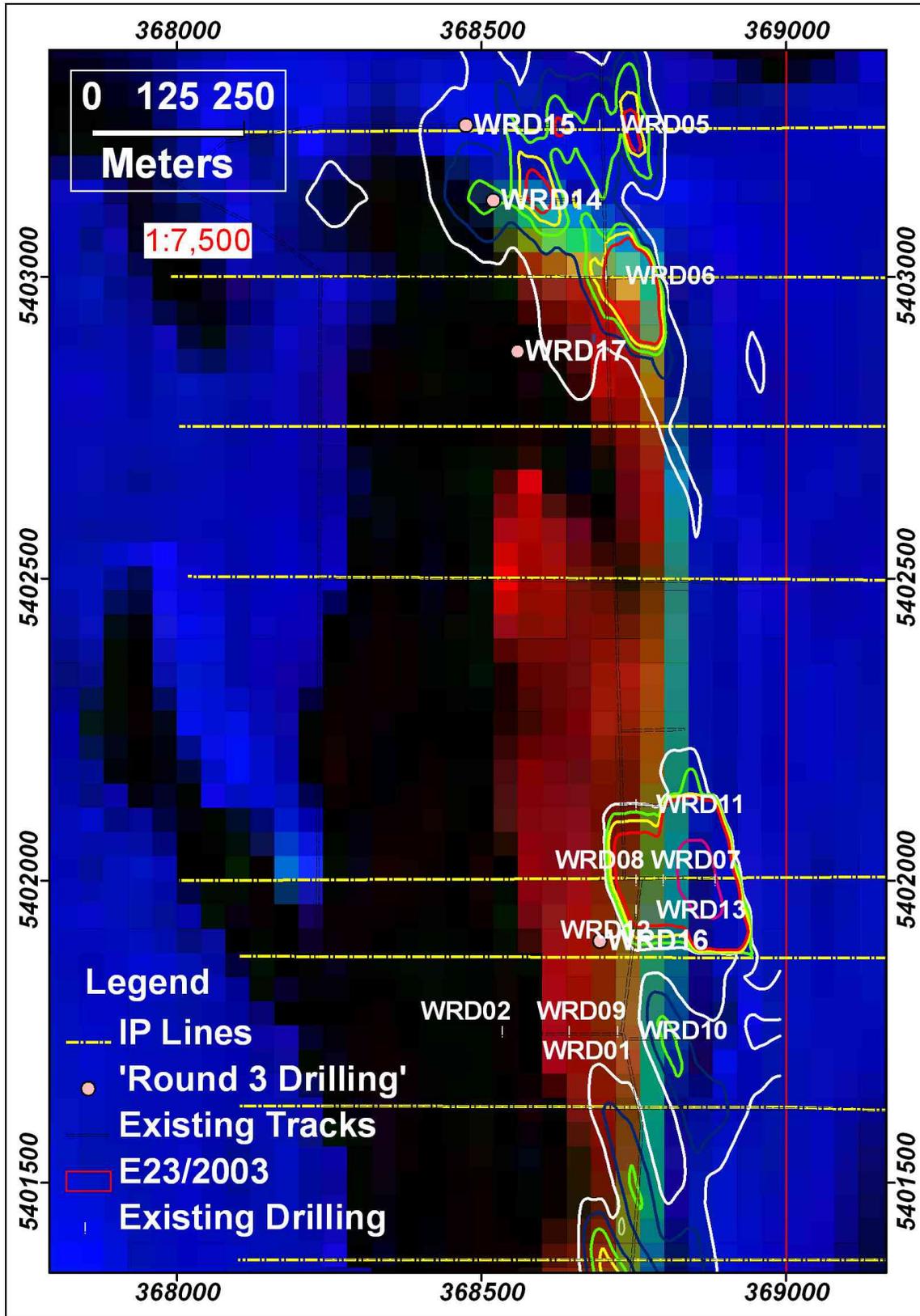


Figure 3. Diamond Drill Hole Locations on the aeromagnetic image, with Pb in soil anomalies.

In the 2006-2007 field season nine diamond drill holes (WRD05-WRD13) were drilled for a total of 1406m, targeting previously intercepted mineralization and geochemical anomalies defined in the previous year. The locations of the holes with respect to regional aeromagnetism are displayed in Figure 3. One hundred and seventy soil samples were collected on 125m spaced infill lines within EL23/2003, with sample spacing at 50m, and fifteen rock chip samples were taken. All samples were despatched to Genalysis Laboratories in Adelaide for analysis. Elements Ag, As, Bi, Mo, Pb, Sn were analysed via Genalysis method BT/MS (aqua regia digest with an Inductively Coupled Plasma Mass Spectrometry) while Ca, Cr, Cu, Fe, Mn, Ni, S, Zn were analysed via BT/OES (aqua regia digest with an Inductively Coupled Plasma Optical Emission Spectrometry), (Busbridge, 2007)

In the 2007-2008 field season four diamond drill holes (WRD14-WRD17) were drilled for a total of 1150m. OME Drilling conducted the drilling without any significant incidents. A four wheeled drive access track was prepared by Solly Investments Pty Ltd, for a total of six kilometres, which gave access to the drill pads (also prepared by Solly Investments Pty Ltd). Holes evaluated the strike and dip potential of the mineralisation encountered within the previously drilled WRD05-WRD13. Several positions of higher order geochemistry within the soil geochemical anomaly were also drilled. Collar coordinates and hole depths are shown in Appendix 1 of Busbridge 2009 and significant intersections are listed in Table 1 of Busbridge 2009.

The dominant alteration mineral assemblages in the ultramafic in the mineralisation zone are an earlier silicification, and a later overprinting carbonate (dolomite) alteration. Accompanying this alteration is a pervasive brecciation and veining of the rocks. Both vein and massive style sphalerite, galena and minor chalcopyrite fuchsite mineralisation is present close to the granite within the more intensely altered and brecciated rock types. Accompanying pervasive propylitic alteration assemblages in the granite are quartz carbonate veins containing sphalerite and galena.

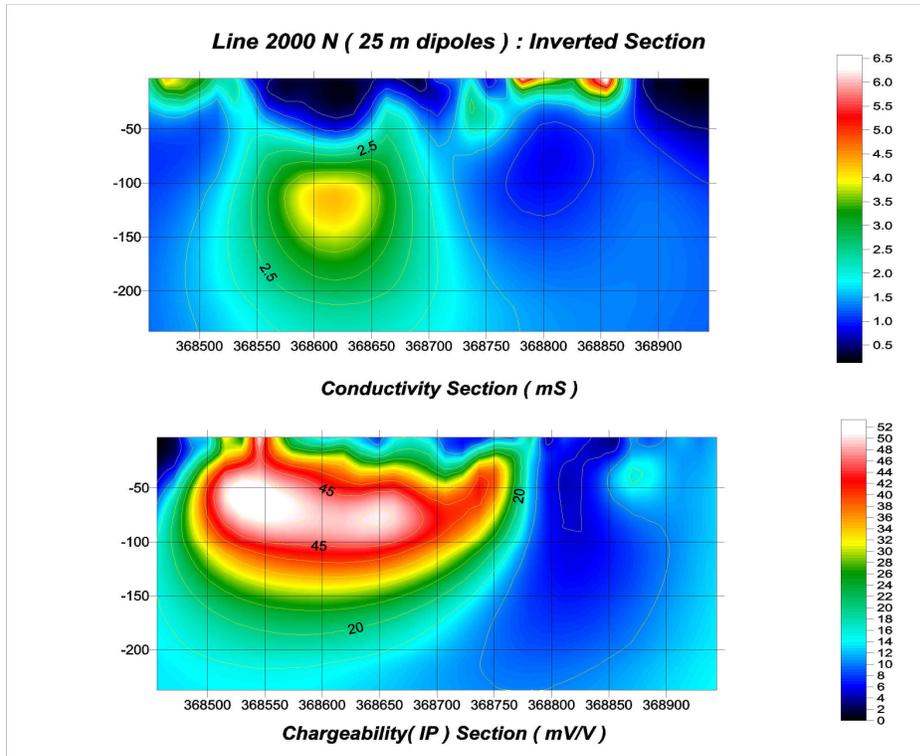
Observed and mapped North West trending faults are interpreted to have faulted out mineralisation in WRD16 (located 50m south of previously drilled WRD 13 which reported 4.2m of 10% combined Zn and Pb), in which mineralization at the ultramafic granite contact zone was weak. It should be noted however that minor mineralisation was reported in the cross cutting north west fault, located 100m up-hole of the ultramafic granite contact, this was reported in WRD17 also.

All downhole assay, survey and lithological data is provided and digital photographs of all core trays is located in Appendix 1 and Appendix 2. of Busbridge 2009.

#### **4.1.1 Resistivity/ Induced Polarisation Survey**

In January 2008 a Resistivity/Induced Polarisation (IP) survey was conducted over Wilson River in order to delineate further conductive sulphide bodies at depth. 1m wide lines were prepared by Ron Gregory Prospecting, the survey was completed by S. J. Geophysics, and the data was processed by Flagstaff Geoconsultants (Appendix 3). Ten lines were prepared on a spacing of 250 meters for a total of 15 line kilometres using chainsaws. The IP data was collected using a pole-dipole method. Electrodes constituted a pit dug every 50m along the IP line, occupying an area of 1m<sup>2</sup> and to a depth of 50cm, with foil placed at the bottom which in turn was connected to a central 10kV generator. After use all electrode sites were back filled and levelled.

Results of the IP survey did not delineate any potential targets at depth due most likely to the highly conductive nature of the ultramafic host rock (illustrated as the large red body in the Conductivity Section in Figure 4), and the narrow mineralisation zones, which the IP survey may not have been able to delineate. Full processed data is available in Appendix 3 of Busbridge 2009.



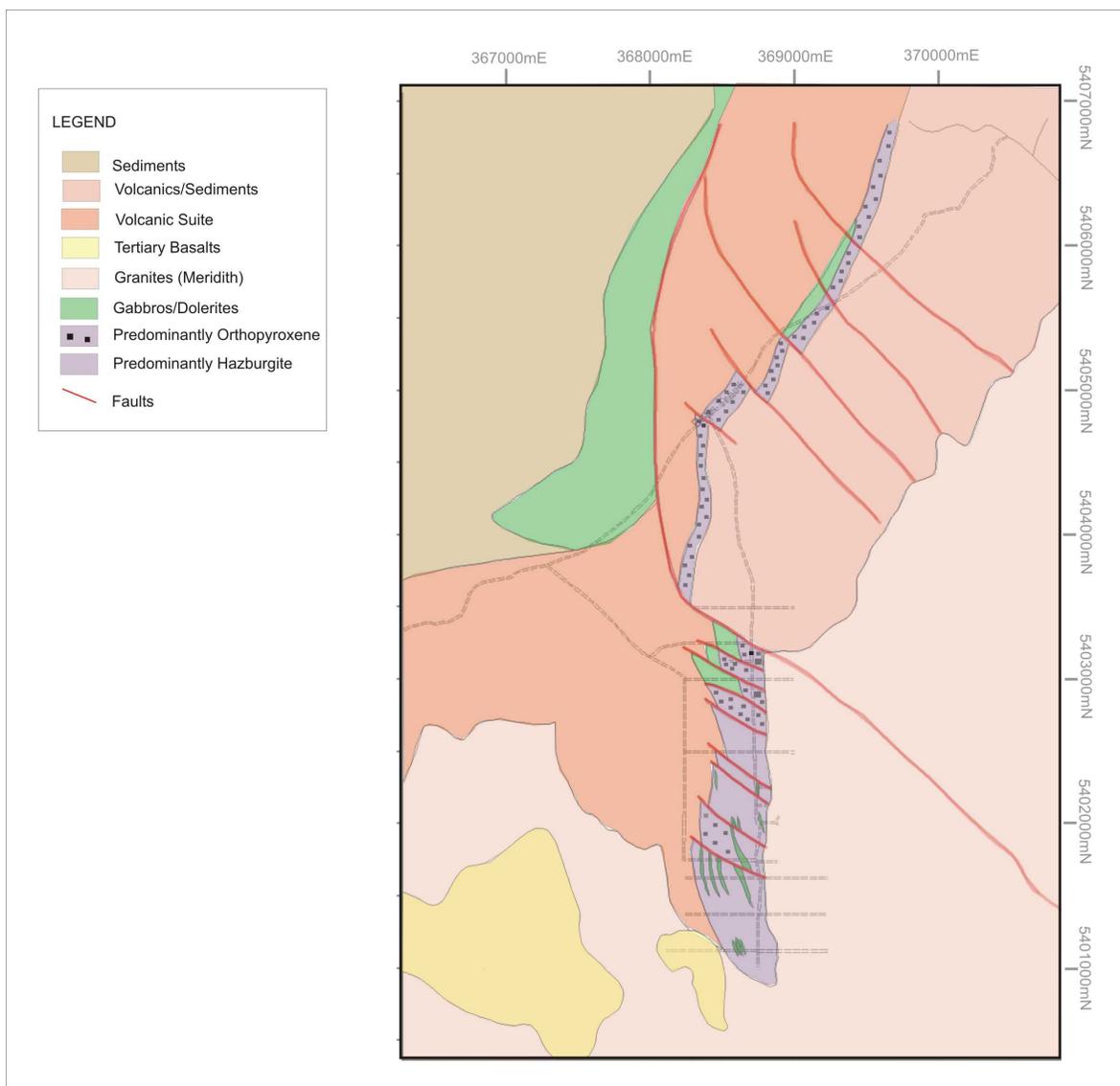
**Figure 4.** Resistivity/ Induced Polarisation image from Line 54032000 North at Wilson River showing highly chargeable ultramafic body to the west.

#### 4.1.2 Local mapping program

In June 2008 a two week local mapping program was conducted in order to gain a better understanding of the local geology. Results of the mapping are displayed below in Figure 5.

Mapping units within the ultramafic-mafic succession were split into “orthopyroxene dominant”, and “harzburgite-dominant”, both successions having undergone severe metamorphism. Coarse orthopyroxene mesocumulates have been recorded from Wilson River with single orthopyroxene crystals occurring up to 5cm in length.

The main features observed from the local mapping program were a series of north west striking faults offsetting stratigraphy within the Cambrian ultramafic-mafic succession. These north west striking faults have become obvious structures observed within the diamond drill hole core, and it is proposed that one of the faults is responsible for offsetting the southerly plunging mineralisation seen at Wilson River, hosted on the contact between the Devonian Meredith granite, and the Cambrian ultramafic-mafic succession.



**Figure 5.** Geological mapping of the area highlights a number of cross cutting structures within the tenement.

#### 4.1.3 Infill Soil Sampling and Rock chip sampling.

One hundred and fifty two soil samples were collected on 125m spaced infill lines within EL23/2003. Sample spacing was 50m and 25m over target horizons. Lines were planned to cover the prospective ultramafic – granite contact. Samples weighing 200 – 300 grams were collected from 10-20 cm deep holes dug with a pelican pick. As the samples were very wet, no sieving was employed. Holes were back filled when the sample was taken. All samples were despatched to Genalysis Laboratories in Adelaide for analysis. Elements Ag, As, Bi, Mo, Pb, Sn were analysed via Genalysis method BT/MS (aqua regia digest with an Inductively Coupled Plasma Mass Spectrometry) while Ca, Cr, Cu, Fe, Mn, Ni, S, Zn were analysed via BT/OES (aqua regia digest with an Inductively Coupled Plasma Optical Emission Spectrometry). Assays and spatial data for the soils and rock chips are located in Appendix 4 of Busbridge 2009.

Zinc and lead soil geochemical contours for the total soil sampling database (infill and original 250m lines) are illustrated in Figures 6 and 7 respectively.

Fifty three rock chip assays were also collected, 35 being despatched to Genalysis Laboratories in Adelaide, and 18 being despatched to Burnie Labs in Burnie. Assays and spatial data are located in Appendix 4 of Busbridge 2009.

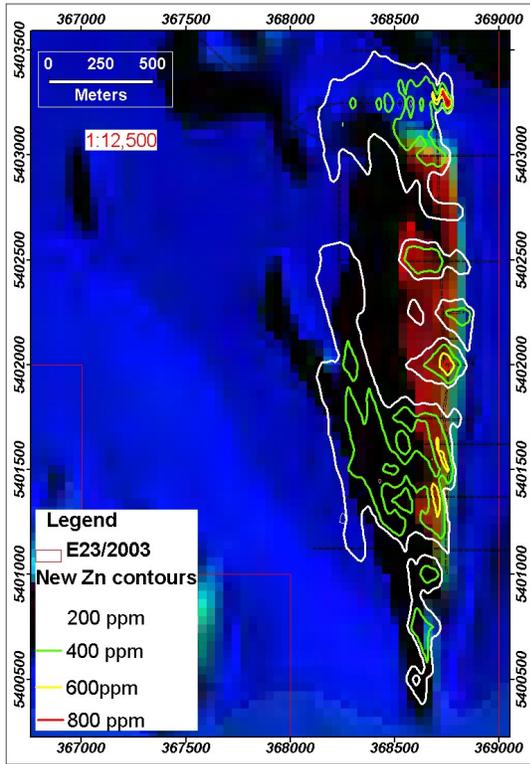


Figure 6. Zn soil geochemistry.

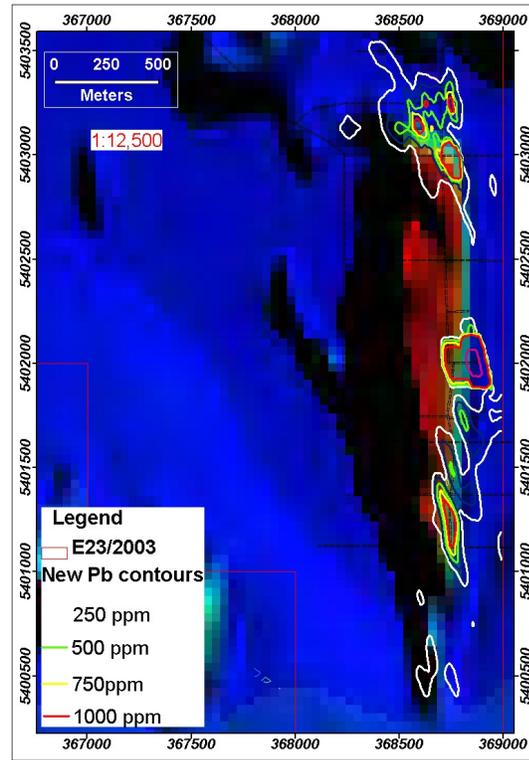


Figure 7. Pb soil geochemistry.

#### 4.2. Exploration by Jaguar Minerals during the Period covered by this report.

Jaguar completed no field work during the reporting period. Jaguar is committed to furthering exploration on this project and to this end actively seeks a suitable joint venture partner.

### 3. REHABILITATION

Prior to a site inspection undertaken by John Pemberton from MRT in September 2011 contractors were sent out to clear fallen trees on Betts Track. Following recommendations Jaguar has commenced preparations to obtain a suitable drill rig to seal the drill hole that is making water and the remaining holes will be capped, this work is expected to take place mid summer. Field crew will be sent out in the coming weeks to generally remove any rubbish remaining on site from previous programmes.

### 4. EXPENDITURE

Expenditure this year has been on storage of equipment used on the project, maintenance and monitoring of the project and administration.

Salaries	\$3,400	Geologist, Geologist Assistant
Contractors	\$5,671	Field Inspection, track clearing
Rent/Fees	\$798	Annual Rent, Renewal Fees
Admin	\$987	10% Admin Costs
Total	\$10,865	

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