



# IMX Resources

## **EL 47/2006 “Mt Frankland” Final Report for the Period 10th July 2007 to 9th July 2013.**

Volume 1 of 1

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## **ABSTRACT**

IMX Resources Ltd considered the Smithton area in NW Tasmania to have potential to host Ni-Cu sulphide mineralisation in sub-volcanic basic-ultrabasic intrusions. To pursue this target, several exploration licences were applied for in 2006 – 2011, one of which - EL47/2006 - is the subject of this report.

During the period of tenure, seven Mobile Metal Ion, six rock chip and 2 heavy pan concentrate samples were collected and airborne magnetic data were remodelled.

A drill hole was planned to test the Eckberg Creek Ironstone ridge, but access was prohibitive and so the hole was not drilled.

Due to contracted budgets, a decision was made to rationalise the company's asset portfolio and as such, all NW Tasmanian licences, including EL47/2006, were relinquished in favour of more advanced projects elsewhere.

Total expenditure for the reporting period was **\$190,348.30**.

## **KEYWORDS**

Tasmania North West, Burnie 250,000 map sheet, Smithton, geochemistry, Ni-Cu sulphide mineralisation, MMI sampling, HMC sampling, RC drilling.

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## DIGITAL FILES (ON REPORT CD)

EL472006\_201306\_01\_report.pdf  
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## 1.0 INTRODUCTION

The following report details work conducted at IMX Resources Ltd's ('IMX') EL47/2006 – 'Mt Frankland' during the period 10<sup>th</sup> July 2007 to 9<sup>th</sup> July 2013. The tenement is located 25km west-south west of Smithton, NW Tasmania (Figure 1).

### 1.1 Exploration Rationale

EL47/2006 is considered to have potential for Ni-Cu sulphide mineralisation in subvolcanic basic-ultrabasic intrusions.

### 1.2 Geological Setting

The Rocky Cape region of northwest Tasmania consists of thick weakly metamorphosed deformed Neoproterozoic sedimentary and volcanic successions (Calver 1998). The oldest exposed succession consists of orthoquartzite, siltstone and minor carbonate (the Rocky Cape Group) that underlies the Togari Group. The Rocky Cape Group is younger than 1200Ma. An angular unconformity separates the Rocky Cape Group from the Togari Group which occupies the Smithton Synclinorium in far northwest Tasmania. The Togari Group (Everard et al. 2007) consists of siliciclastic rocks (Forest Conglomerate), a carbonate -chert-shale unit (Black River Dolomite) dated at 750-650 Ma, rift tholeiite and associated volcanoclastic units (Kanunnah Subgroup) and dolostone (Smithton Dolomite) dated at 580-545 Ma. The Black River Dolomite contains stromatolites and probably had evaporitic affinities. The Smithton Dolomite is overlain by Middle to Late Cambrian sandstone and shale, the Scopus Formation. On older maps e.g. the 1: 50 000 SMITHTON sheet all carbonates and dolostones are shown as Smithton Dolomite.

Dolerite dykes dated at 600-588 Ma and differentiated basic- ultrabasic intrusions related to the tholeiitic sequence were emplaced into the sequence below the Kununnah Group. The Proterozoic- Paleozoic sequence is locally overlain by Tertiary basalts occurring mainly as hill cappings. Basalt compositions range from basanite through alkali olivine basalts to tholeiite.

Both the Rocky Cape Group and the Togaru Group were deformed during the Cambrian and the Devonian.

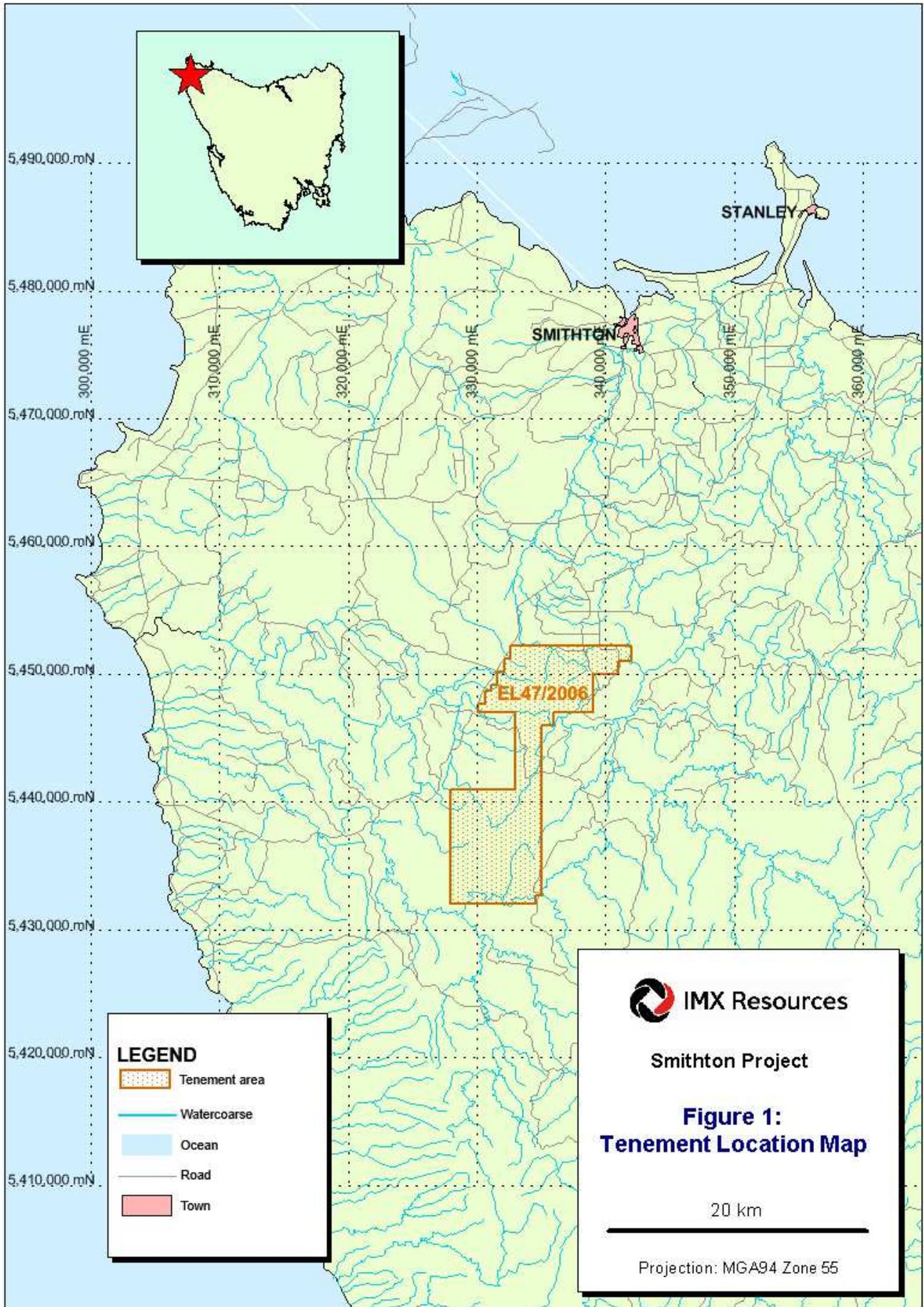
The presence of subvolcanic basic-ultrabasic intrusions in a sequence of sulphide bearing sedimentary rocks, imply that the region has potential for Ni- Cu sulphide deposits. Possible sulphur sources for Ni sulphide deposits are present in the Cowrie Siltstone (Rocky Cape Group) and in shales of the Black River Dolomite.

## 2.0 TENURE

Exploration Licence 47/2006, in the vicinity of Julius River, was granted to IMX for a term of 5 years from the 10<sup>th</sup> July 2007 and forms part of the Smithton Project. The licence is subject to a Joint Venture with Mr F. Barrett (4% ownership). Due to rationalisation of property assets and refocusing of budgets, IMX decided to relinquish all licences in the Smithton Project in April 2013. Table 1 summarises the tenement details.

**Table 1: Licence Details**

Licence	Period		Year	Area
	From	To		
EL47/2006	10 <sup>th</sup> July 2007	9 <sup>th</sup> July 2008	1	249 km <sup>2</sup>
	10 <sup>th</sup> July 2008	9 <sup>th</sup> July 2009	2	249 km <sup>2</sup>
	10 <sup>th</sup> July 2009	9 <sup>th</sup> July 2010	3	120 km <sup>2</sup>
	10 <sup>th</sup> July 2010	9 <sup>th</sup> July 2011	4	120 km <sup>2</sup>
	10 <sup>th</sup> July 2011	9 <sup>th</sup> July 2012	5	120 km <sup>2</sup>
	10 <sup>th</sup> July 2012	9 <sup>th</sup> July 2013	6	120 km <sup>2</sup>



### 3.0 REVIEW OF PREVIOUS WORK

Australia and New Zealand Exploration Company collected stream sediment samples over much of the ground covered by EL47/2006 during 1972 as part of their regional sampling program (Kinnane, 1972). Their pan concentrates showed remarkably high values for Sn with values up to 24.2% Sn in samples from Arthur River near Kanunnah Bridge.

From 1997-2002 Morritt Holdings, Pacific Nevada and Greenstone Resources explored for epithermal gold along the Roger River Fault and over siliceous and calcareous spring mounds like Smokers Bank immediately south of Smithton (Morritt Holdings – *author unknown*, 2003; Reid, 1998; Reid and Westbrook, 1998; Westbrook, 1999). They also explored for base metal mineralisation associated with Proterozoic Iron Formations. The spring mounds were soil and stream sediment sampled and drilled using an auger, which detected low level concentrations of elements normally associated with epithermal gold but no significant gold values. Soil and rock chip sampling over ironstones at Ekberg Creek was inconclusive.

An EM survey was carried out over the Roger River Fault but no interpretations are given, and images in open file reports suggest no significant conductors were located.

A detailed aeromagnetic survey with 200 m line spacing was flown over the tenement by AGSO/MRT in 1996.

### 4.0 EXPLORATION COMPLETED DURING LIFE OF EL47/2006

All results, including sample description, location, survey and assay data were presented in Barrett et al (2008), Chai (2009), Chai and Barrett (2010) and Doyle and Barrett (2011 and 2012) and is presented in this report as Appendix 1.

#### 4.1 Surface Sampling

Due to the highly leached nature of Tasmanian soil, MMI<sup>TM1</sup> sampling was used to test and rank magnetic features accessible in the tenement. 7 MMI<sup>TM</sup> samples were collected. The MMI<sup>TM</sup> sampling targeted stratigraphically controlled magnetic highs. Coverage was very uneven and mainly restricted due to forest and topographic access issues. One sample returned weakly anomalous Pt-Pd-Au-Ni.

Two heavy mineral concentrates were collected from the Ekberg Creek Iron Stone ridge, one of which contained high Cr and Ti chrome spinels, indicating a local source of highly-magnesian intrusive rock.

Six rock chips were collected predominantly from the Ironstones. These returned normal background geochemical values for basic rocks. Nevertheless, the ironstones

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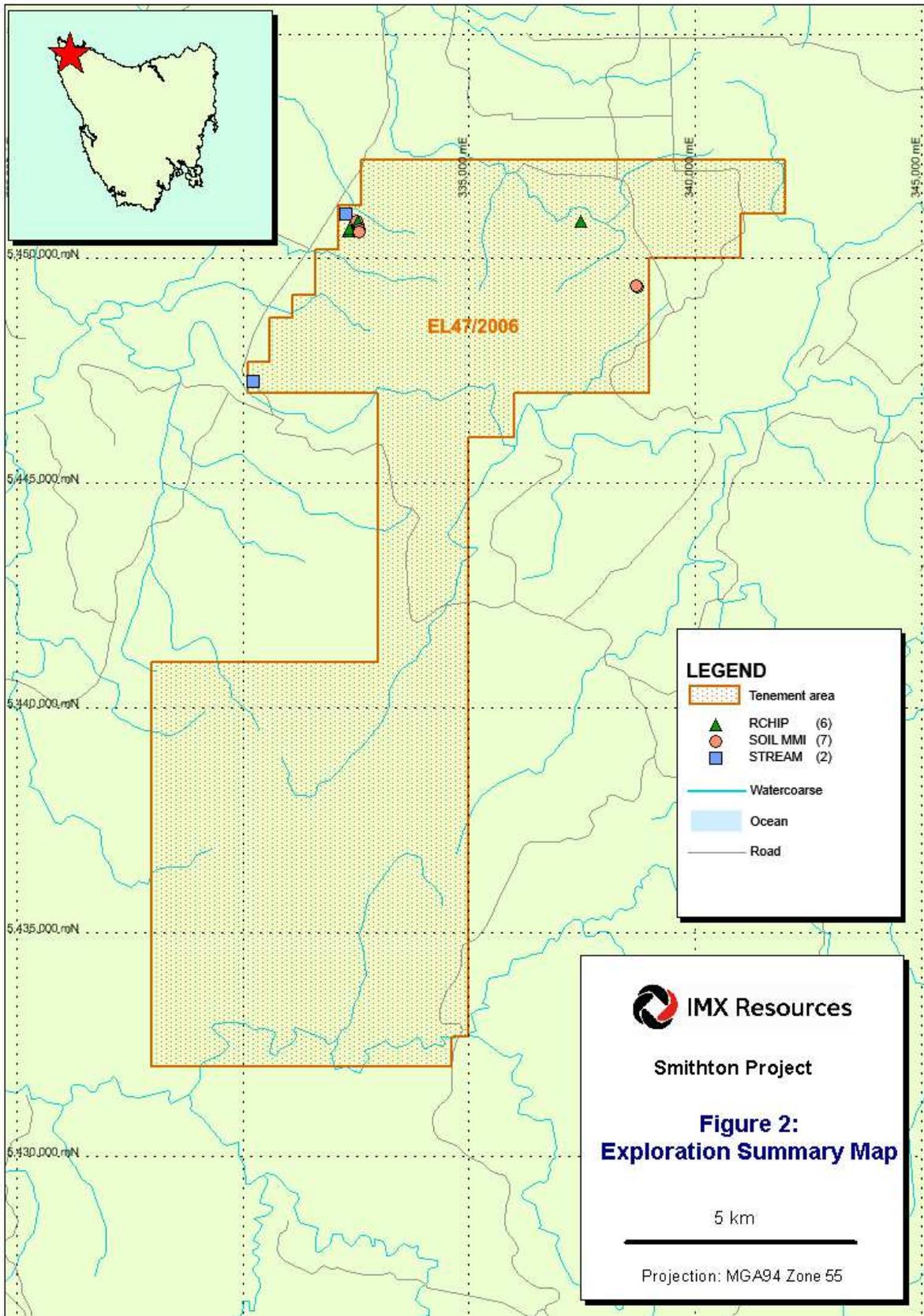
<sup>1</sup> MMI<sup>TM</sup> - Mobile Metal Ion analysis is a low level detection geochemical process that analyses metals in soils and weathered materials using extremely weak solutions of organic and inorganic compounds rather than the conventional aggressive acid digest solutions or fusions. MMI<sup>TM</sup> extractants, containing strong ligands, are used to detach and hold in solution metal ions which are loosely bound to soil particles by weak atomic forces. The metal ions held in solution are therefore the chemically active or 'mobile' component. These mobile forms occur in very low concentrations that are readily measurable by modern ICP-MS analysis with considerable precision. Source- <http://www.geochem.sgs.com/mmi-process.htm>

were targeted for drill testing, however, safety concerns due to access difficulties, this was not carried out.

The location of the samples is shown in Figure 2.

## 4.2 Geophysical Modelling

Paul Mutton of Southern Geoscience Consultants (SGC) was contracted to model the dip and depth to fresh magnetic rock to determine ideal orientation for drilling that was not ultimately carried out.



## **6.0 DISCUSSION OF RESULTS**

Most of the tenement is covered by timber plantations of various ages. The basalt sequence appears to be flat lying and not easily amenable to surface sampling. A planned hole to test the ironstones at Montagu River/ Canadian Creek was not drilled, as access along steep slippery tracks was deemed too dangerous during the wet conditions. The ironstones showed strong geochemical similarity to the alkaline volcanics encountered in a drillhole in an adjoining tenement. The area around the ironstones has been tested by an IMX airborne EM survey and no strong anomaly associated with massive sulphides was found. The remainder of the tenement is covered by a Pacific- Nevada EM survey, and no strong anomalies were identified.

The main part of the tenement shows an elevated magnetic response, and the magnetic data is not very useful for identifying sampling and/ or drill targets with our current level of understanding. Blanket geochemical sampling would be very expensive and may not identify any significant targets

## **7.0 CONCLUSIONS**

Hampered by access difficulties, the tenement was not satisfactorily tested during the tenure period. Due to company budget re-prioritisation, IMX has decided to allow the licence to lapse.

## **8.0 ENVIRONMENT**

No ground disturbing activities were carried out during the life of the licence.

## 9.0 EXPENDITURE

Expenditure for Mt Frankland EL47/2006 for the reporting period is summarised in Table 2. This summary includes all expenses accrued up to 31<sup>st</sup> May 2013.

Total expenditure for the reporting period was **\$190,348.30**.

**Table 2: Expenditure Life to Date**

<b>Activity</b>	<b>TOTAL</b>
Assaying	\$ 22,758.14
Soil Sampling	\$ 5,828.86
Geological Salaries (recharge - staff S & W)	\$ 39,433.00
Field Supplies	\$ 1,509.01
Geological Consultants	\$ 26,254.37
Geophysical Consultants	\$ 5,687.00
Geophysical Data	\$ 15,613.95
Petrology/ Mineralogy	\$ 1,417.00
Data Entry / Drafting	\$ 148.50
Tenement Administration	\$ 3,821.80
Tenement Rentals	\$ 24,954.00
Heritage & Native Title	\$ 7,190.00
Vehicles - Fuel	\$ 148.88
Light vehical hire	\$ 145.98
Computer (and IT support)	\$ 346.50
Computer Software	\$ 11,324.90
Consulting fees	\$ 540.50
Office costs	\$ 32.00
Communication	\$ 174.14
Courier	\$ 45.00
Travel & Accomodation - International	\$ 55.65
Travel & Accommodation - Domestic	\$ 4,381.01
Food & Messing	\$ 674.87
Training	\$ 558.85
Overheads	\$ 17,304.39
Total	\$ 190,348.30

## 10.0 REFERENCES

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# APPENDIX 1

## Exploration Metadata

### Metadata: Surface Sample

H01	Tenement Holder	IMX Resources Ltd	
H02	Tenement Name	EL47/2006	
H03	Activity	Stream Sediment samples	Mobile Metal Ion soil samples
H04	Location of the data	EL472006_02_Appendix1.txt	
H05	Date created	27/06/2013	
H06	Date modified	1/07/2013	
H07	Parameters of data acquisition / processing	-80# size fraction sampled	
H08	Contractor	Genalysis	Genalysis
H09	Translation Parameters		
H10	Equipment	4 Acid Digestion, MS finish	Mobile Metal Ion Analysis. ICP-MS finish.
H11	Original data format	csv	
H12	Codes	SOIL MMI	Soil sample: MMI
H13	Codes	STREAM	Stream sediment sample: heavy mineral concentrate
H14	Codes	RCHIP	Rock chip sample