# METEORIC RESOURCES NL ANNUAL REPORT WARREGO NORTH PROJECT EL 23764 TENNANT CREEK – NORTHERN TERRITORY PERIOD 10/12/2003 TO 9/12/2004

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FOR
METEORIC RESOURCES NL

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#### INTRODUCTION

The Warrego North Project an area of some 172 km<sup>2</sup> consists of Exploration Licence E23764 and Exploration Licence Application E24138 located near Tennant Creek in the Northern Territory (Table 1). The Tennant Creek goldfield, which has past production of 4.7Mt of gold from 16.3Mt of ore, is renowned for the high grade of its ore bodies. The project tenements are located immediately north of the largest mine in the field, the Warrego Mine, which produced 1.3Moz of gold and 91,500t of copper. Warrego had overall recovered grades of approximately 8g/t gold and 2% copper and was characterised by hight grade gold zones averaging 20g/t (Chisholm).

TABLE 1

Tennant Creek -	- Tenement Summ	nary		
Project	Number	Grant Date	Area (km <sup>2</sup> )	Annual
				Expenditure
				Requirement
Warrego North	E23764	10-Dec-03	146	\$30,000
Warrego North	E24138	Application	26	
		Total	172	\$30,000

The Warrego North Project tenements are interpreted to cover the 11 km northern extension of the favourable stratigraphy, which hosts the Warrego Mine. The Last Hope Mine, where gold was first discovered in the Tennant Creek goldfield, is located within the project area.

Copper – gold ore bodies in the Tennant Creek goldfield are commonly associated with magnetite – rich ironstones within the Warramunga Formation, a sequence of greywacke, siltstone, shale and felsic volcanics of Proterozoic age. There is evidence that the mineral deposits are structurally controlled and occur within more ferruginous horizons of the Warramunga Formation. Significantly, there is more recent evidence that copper – gold mineralisation is also associated with less magnetic, haematite rich ironstones such as at Nobles Nob and Chariot copper – gold deposits. At Chariot the deposit is coincident with a strong and shallow gravity response, which is separate from the Chariot magnetic response (Chisholm).

Meteoric Resources NL ("Meteoric") recognised that while the use of magnetics have in the past been the primary exploration tool used by explorers its use in conjunction with the use of gravimetric surveying is becoming increasingly important in identifying new exploration targets. Meteoric has carried out extensive gravity and ground magnetic surveys over target areas, as identified from review and reinterpretation of the exploration database of previous explorers (Meteoric Prospectus).

Structural controls of mineralisation are considered to be important in the Tennant Creek area and it is noted in the Warrego North project area that pronounced structural corridors interpreted from aeromagnetics are evident trending N-S through the Warrego Mine and NW-SE through the Gecko Mine. These features together

with others evident from the aeromagnetics identify a number of prospective corridors, which include several of the targets identified by Meteoric.

Previous exploration within the project area included shallow geochemical vacuum drilling which identified numerous copper gold geochemical anomalies. Deeper drilling in these areas appears to be quite limited in extent, however the reported occurrences of haematite and magnetite alteration provided encouragement for further exploration, particularly when combined with the results of the Meteoric gravity and magnetic surveys. During 2004 Meteoric carried out a programme of reverse circulation drilling, mapping and down hole geophysical surveys. This report documents the status of the Meteoric exploration to date.

#### **GEOLOGY**

The project area is located in the Tennant Creek Inlier, an area of Proterozoic rocks consisting of three distinct geological provinces; the Davenport Province to the southeast, the central Tennant Creek Block and the Tompkinson Creek Province to the northwest. The Inlier is comprised of a gneissic basement overlain by Proterozoic sediments of the Warramunga Formation, Hatches Creek Group and the Tompkinson Creek Beds. The sequence of Proterozoic sediments was intruded by younger Proterozoic granitoids around 1858 Ma to 1845 Ma during the Barramundi Orogeny. The Proterozoic rocks were subsequently overlain by Cambrian sediments of the Georgina Basin. The Tennant Creek goldfield is located within the central block where the oldest rocks are the metasedimentary rocks of the Warramunga Formation, which are the host to the ironstone – gold – copper – bismuth mineralisation of the Tennant Creek goldfield.

The Warramunga Formation is comprised of a sequence of argillaceous sedimentary rocks that includes greywacke, siltstone, shale and units of haematitic – magnetite shale. Cross – cutting and conformable quartz – feldspar porphyries occur within the sedimentary sequence.

Following deformation and uplift of the basement, the volcanics and volcaniclastics of the Flynn Sub – Group were erupted (1845 Ma to 1827 Ma), with intrusion of porphyries and minor granitoids into the Warramunga Formation. The Warramunga Formation has been subjected to three phases of deformation, the first of which formed tight to isoclinal folds with an east west axis. The two later phases formed west – northwest trending faults and shear zones, and finally northwest trending faults. The project cover an area of poor outcrop comprised of Cenozoic and Quaternary Aeolian and alluvial sand cover (Chisholm).

#### HISTORICAL EXPLORATION

Previous explorers of the Warrego North Project area have included a number of companies since the 1970's who have explored the area for gold copper and uranium mineralisation. Earlier exploration in the 1960's was conducted by Peko Mines NL and Australian Development NL, it is understood that very little data was reported for this period.

Geopeko Limited explored the area during the 1970's to early 1980's period. Their exploration effort used the data from aeromagnetic surveys flown by the Bureau of

Mineral Resources to define targets for ground follow up using ground magnetics. Numerous magnetic and geochemical anomalies were identified with only the most obvious magnetic features and highest geochemical values followed up. Included in the work were three diamond drill holes into three anomalies (Explorer 27, 36 and 59). A limonitic gossan containing up to 1500ppm Cu and 800ppm Mo was tested by Hole Number 1 at Explorer 27 prospect. Dispersed chalcopyrite was intersected in the hole from 124 metres to the EOH at 183metres but reports indicate that no core was assayed. A single diamond hole at Explorer 36 intersected alternating diorite and feldspar porphyry containing disseminated magnetite and copper-iron sulphides with best intersections of 1.2m at 0.4g/t Au from 173m and 1.2m at 0.22% Cu from 270m. A diamond hole at the Explorer 59 prospect intersected fresh weakly magnetic diorite.

Uranerz also explored the area for uranium during the 1970's period.

CRA Exploration Pty Ltd and Central Electricity Generating Board Exploration (Australia) Pty Ltd carried out exploration during the 1980's separately exploring for gold and uranium.

Posgold Ltd (Australian Development Ltd) explored the area during the late 1980's and early to mid 1990's. Their work included processing of aeromagnetic surveys flown over the area in 1984 by Aerodata and 1989 by Austirex. In addition to the use of the aeromagnetics they carried out photo geological interpretation drainage geochemical sampling and vacuum drilling with follow up ground magnetics. Ground based gravity surveys were also carried out over selected prospects. Posgold carried out follow up RAB and RC drilling over the better geochemical and geophysical anomalies.

Giants Reef Mining Ltd held parts of the area from the late 1990's and completed detailed aeromagnetics and colour air photography (Chisholm).

#### METEORIC RESOURCES NL EXPLORATION

#### COMPILATION OF HISTORICAL DATA

Meteoric has carried out literature and data searches of historical exploration carried out by others in the Warrego North Project area. The data has been tabulated and used to produce a series of historical data sets and maps. Historical data and maps are collated in Appendix 1. The data is comprised of original survey and geochemical log sheets (jpg images) and updated excel and word files. That data has been used by Meteoric to produce a series of plans showing the vacuum drilling. Appendix 1A contains Data for Vacuum Drilling, Appendix 1B contains compiled Drill Sections, Appendix 1C contains compilation maps of the vacuum drilling data, Appendix 1D contains data for historical Reverse Circulation and Percussion drilling, Appendix 1 E contains data for historical rock chip sampling and Appendix 1 F contains data for historical stream sediment geochemical sampling.

Meteoric have also produced a series of drill sections as presented in Appendix 1 B, of the Parakeet Prospect area, where historical drilling was conducted by Posgold.

## ACQUISITION AND INTERPRETATION OF AEROMAGNETIC DATA

Meteoric have acquired data from previous aeromagnetic surveys over the Warrego North Project area. The data was used as a primary tool to identify areas of interest where Meteoric then conducted ground based magnetic and gravity surveys to define drilling targets.

## GROUND BASED MAGNETIC SURVEYS AND GROUND BASED GRAVITY SURVEYS

Meteoric has conducted ground based magnetic and gravity surveys over the prospect areas to define drilling targets in the Warrego North project area. Targets were identified in both the Eastern area immediately north of the Warrego Mine and in the Western area, which is located on a northwest trending regional structure and included the Parakeet and Bustard Prospects.

Details of the geophysical work and its interpretation are presented on a report titled:

Interpretation of Ground Magnetic and Gravity Surveys Warrego North Project Tennant Creek NT by Peter C Smith. (Presented in Appendix 2 B) while gravity data is presented in Appendix 2 A.

#### REVERSE CIRCULATION DRILLING

Meteoric carried out a programme of Reverse Circulation drilling during 2004. The drilling tested geophysical targets in both the Eastern and Western areas of the Warrego North project. Drilling was carried out by Gomex Drilling Contractors and geologically logged by the author of this report. Samples were collected for assay using a PVC spear and composting samples over 4 metre intervals. Split samples at one metre intervals were retained and selected intervals were submitted for assay where anomalous geochemistry was obtained from the 4 metre composite assay. Three standard assay pulps were submitted in a variety of combinations with each batch of drill samples submitted for assay as a check on the analytical process. Samples were submitted to North Australian Laboratories Pty Ltd's sample preparation facility in Tennant Creek and then assayed at their Pine Creek Laboratory. Drill logs, assays, Geological Legend, Rehabilitation report and geological summary of drilling are presented in Appendix 3. Appendix 3 A contains RC Drill logs, survey data and table of PVC cased holes, Appendix 3 B contains assay data, Appendix 3C contains the geological legend used for the RC Drilling, Appendix 3 D contains a tabulation of drilling results and Appendix 3 E contains the drill site rehabilitation report.

#### **WESTERN AREA**

The Western area which is located on a north west trending regional structure to the north west of the Warrego Mine includes the Parakeet and Bustard Prospects and nearby targets. Drill hole ID for each prospect is tabulated below.

#### PARAKEET PROSPECT

Geophysical							
Target	Hole	Collar	Coords	Azimuth	Dip	Collar	Hole
ID	ID	E	N			RL	Depth
GM8	WNRC-03	365225	7862845	360	65	346	200
GM9	WNRC-01	364974	7862570	180	60	334	250
GM10	WNRC-02	365809	7863132	180	60	351	250
GM12	WNRC-16	365218	7863053	225	60	333	200
GM10A	WNRC-17	365925	7862972	360	60	338	160
GM10A	WNRC-18	365925	7862960	360	65	336	196

#### **BUSTARD PROSPECT**

Geophysical								
Target	Hole	Collar	Coords	Azimuth	Dip	Collar	Hole	
ID	ID	E	N			RL	Depth	
GM11	WNRC-04	363169	7858120	270	60	330	292	

#### **OTHER ANOMALIES**

Geophysical							
Target	Hole	Collar	Coords	Azimuth	Dip	Collar	Hole
ID	ID	E	N		-	RL	Depth
G6	WNRC-19	363042	7857642	225	60	319	160

#### **EASTERN AREA**

The Eastern area is located immediately north of the Warrego Mine. Drilling targeted a number of geophysical targets with that at the Cuddihy Prospect being a prime target. Drill hole ID for each prospect is tabulated below.

#### **CUDDIHY PROSPECT**

Geophysical							
Target	Hole	Collar	Coords	Azimuth	Dip	Collar	Hole
ID	ID	Е	N			RL	Depth
GM1	WNRC-05	374512	7857620	270	60	369	219
GM2	WNRC-06	374501	7857735	360	60	377	94

#### **GM ANOMALIES**

Geophysical							
Target	Hole	Collar	Coords	Azimuth	Dip	Collar	Hole
ID	ID	E	N			RL	Depth
GM3	WNRC-11	376090	7856810	360	60	323	180
GM4	WNRC-07	375400	7853750	270	60	316	190
GM5	WNRC-09	375240	7854230	270	60	322	180
GM6	WNRC-08	375100	7853890	270	60	321	198
GM7	WNRC-10	375478	7855410	270	60	330	184

#### **GRAVITY ANOMALIES**

Geophysical							
Target	Hole	Collar	Coords	Azimuth	Dip	Collar	Hole
ID	ID	E	N			RL	Depth
G2	WNRC-13	374748	7859110	270	60	337	160
G3	WNRC-14	374728	7858760	270	60	328	160
G4	WNRC-12	374428	7861470	270	60	343	140
G5	WNRC-15	375098	7856840	270	60	316	160

#### **GEOCHEMISTRY**

Drill Cutting Samples were collected for assay using a PVC spear and composting samples over 4 metre intervals. Samples were submitted to North Australian Laboratories Pty Ltd's sample preparation facility in Tennant Creek and then assayed at their Pine Creek Laboratory. Split samples at one metre intervals were retained on site and selected intervals were submitted for assay where anomalous geochemistry was obtained from the 4 metre composite assay. Three standard assay pulps prepared by Ore Research & Exploration Pty Ltd and were submitted in a variety of combinations with each batch of drill samples submitted for assay as a check on the analytical process. The standards used were OREAS 24P, 45P and 51P(see memo Appendix 3 A). Drill assays for drilling are presented in Appendix 3 B.

#### **PETROGRAPHY**

Selected drill chip samples were collected to identify paragenesis of alteration and mineralisation styles. Petrographic reports are attached in Appendix 3 F.

#### REHABILITATION

Rehabilitation of all drill sites was carried out at the completion of the drilling programme, the Rehabilitation report is attached in Appendix 3 E.

#### DOWN HOLE GEOPHYSICAL LOGGING

Peter Smith of Global GeoInfo reviewed and monitored the collection of geophysical data including borehole 3 component magnetic data over the Parakeet Prospect. Borehole Survey Collected by Downhole Surveys (<a href="www.downhole.com.au">www.downhole.com.au</a>) using the following equipment.

Equipment: Flexit 3 Component Borehole Magnetometer.

Inclination Measurement: via 3 orthogonal accelerometers

Reading Interval: 1m

Dip Accuracy: +/- 0.2 degrees

Magnetic Field Measurement: via 3 orthogonal fluxgate magnetometers

Sampling Resolution: 1m Maximum Field: +/-100,000nT Direction Range: 360 degrees

Survey Azimuth Accuracy: +/- 0.5 degrees

A report titled Interpretation Of The Parakeet Prospect Magnetic, Gravity, and Borehole Surveys Warrego North Project, Tennant Creek, NT by Smith is attached in Appendix 2 C. in that report the borehole magnetometer readings are presented as vectors plots against hole trajectory. Sections have been created for WNRC01, WNRC02, WNRC-3-WNRC16, and WNRC17-18.

#### **ROCK SAMPLING**

At the Parakeet Prospect previous exploration had identified areas of outcropping and sub-outcropping ironstone. A total of 34 samples were collected (sample numbers 2001 - 2034) Assay data is presented in Appendix 4 A. Sample locations are shown on a map of the Parakeet Prospect as produced at scale of 1:1000 in Appendix 4 B while location data is given in Appendix 4 A.

#### GEOLOGICAL MAPPING – PARAKEET PROSPECT

The area of the Parakeet Prospect corresponding to areas of outcrop over the main geophysical anomaly was mapped at a scale of 1:1000. The area contains narrow outcrop and sub outcrop of magnetic ironstone. Mapping indicated that the ironstone trended generally east west where as regional structure mapped in a north northwesterly trend. The mapping is presented in Appendix 4 B and has been produced as a PDF file ant scales of 1:1000 and at 1:2500. A zip file containing data and MapInfo files is also presented in the appendix.

#### PLANNED EXPLORATION EXPENDITURE 2004/2005

Meteoric resources plans to follow up ground magnetic /ground gravity anomalies generated from the work done during this reporting period but as yet untested by geochemistry or drilling. Prior to this the company is contemplating the drilling of two deep RC holes to a depth of over 500m to test two deep gravity/mag targets close to the RC drilling previously reported above. Expenditure for this work is expected to be in the region of \$90,000 should the work be carried out.

#### **REFERENCES**

Chisholm, J.,	April	Consulting Geologists Report, in Meteoric Resources NL
	2004,	Prospectus May 2004.
Anon.,	May 2004	Meteoric Resources NL Prospectus

### **LIST OF APPENDICES**

APPENDIX NUMBER	TITLE
1A	Historical - Data Vacuum Drilling
1B	Historical – Drill Sections
1C	Historical – Maps Vacuum Drilling
1D	Historical – RC & Percussion Drilling
1E	Historical – Rock Chips
1F	Historical – Stream Sediments
2A	Geophysics – Gravity
2B	Geophysics – Magnetics
2C	Geophysics – Down Hole Report
3A	RC Drilling – Drill Logs
3B	RC Drilling – Assays
3C	RC Drilling – Geological Legend
3D	RC Drilling – Drilling Results Summary
3E	RC Drilling – Drill Site Rehabilitation
3F	RC Drilling – Petrology
4A	Parakeet Prospect – Rock Chip Assay
4B	Parakeet Prospect – Mapping