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28th January 2011

#### **GEOPHYSICAL COMPARISON OF MT BARRET AND MT WELD**

- DMN commences earning phase on 70% of the Mt Barrett project.
- Southern Geoscience Consultants report: Mt Barrett and Mt Weld Geophysical Characteristics. Extracts
  - "The source of this anomaly has been previously interpreted as a late magnetic intrusive and is considered prospective for a magnetite-gold mineralisation and or Mt Weld style REE mineralisation."
  - "The size and approximately flat lying top of the Mt Barrett magnetic anomaly/model makes it amendable to vertical drilling. Furthermore a vertical drill hole should intersect both the magnetic source and any associated overlying mineralisation."

Datamotion Asia Pacific Ltd (DMN) is pleased to announce it has commenced earning 70% of the Mt Barrett project (via its wholly owned subsidiary Universal Rare Earths Pty Ltd) by satisfying the initial \$300,000 minimum spend condition of the Mt Barrett Joint Venture Agreement. The joint venture committee appointed Oroya Mining Ltd as the operator and has approved a \$450,000 budget for the exploration and drilling program planned to commence in Q1 2011.

The Company engaged independent consultants Southern Geoscience Consultants Pty. Ltd. to conduct a geophysical review of the Rare Earth target at Mt Barrett in comparison to Lynas Corporation's (LYC) Mt Weld deposit. The Mt Weld Rare Earths deposit is approximately 10km south of Laverton in Western Australia while the Mt Barrett Magnetic Anomaly is approximately 150km north east of Laverton.

Below are images highlighting the similarities in the magnetic signatures of Mt Barrett and Mt Weld. The Company finds the similarity very encouraging as we prepare for the drilling program.

The complete S.G.C. report is attached and may also be reviewed on the company website <u>www.datamotion.asia</u>. Professional advice should be sought to assist in the interpretation of this report.



TMI images. Mt Weld (top) and Mt Barrett (bottom) with survey flight lines (black) and selected magnetic profile (magenta).



North-south TMI profiles for Mt Weld (red and left vertical axis), Mt Barrett (blue and right vertical axis).

The company is currently planning to complete a gravity survey followed by a two hole, 850m drilling program on the Mt Barrett anomaly. We look forward to providing updates on the exploration schedule as it progresses.

#### **ENDS**

For further information contact:

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#### DECLARATION OF COMPETENCY

The information in this report that relates to Exploration results is based on information compiled by Mr John Carew under the direction of Mr. Bruce Craven, a member of the Australasian Institute of Mining and Metallurgy. Mr. Carew is a full time employee of Southern Geoscience Consultants Pty Ltd. Mr Carew and Mr. Craven has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.' Mr Craven consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



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# MEMORANDUM (SGC#21(,)

ТО	Joshua Wellisch - Datamotion Asia Pacific Ltd.	
FROM	John Carew, Bruce Craven	
DATE	25 January, 2010	
RE	Mt Barrett and Mt Weld Geophysical Characteristics. S.G.C. Report #2148	

# 1. INTRODUCTION

The Mt Weld carbonatite is located ~10km south of Laverton and contains a large near surface REE resource. The Mt Barrett magnetic anomaly (located ~150 km to the north east of Laverton) has been previously interpreted as a late magnetic intrusive and is considered prospective for a magnetite-gold mineralisation system and or Mt Weld style REE mineralisation.

Southern Geoscience Consultants (SGC) have previously completed 3D inversion and 2D forward modelling of the publicly available airborne magnetic data collected over the Mt Barrett magnetic anomaly. This work was done on behalf of Oroya Mining Limited in February, 2010 and is described in the memorandum '*Mt-Barrett-Magnetic-Modelling\_SGC#2015*' (Carew, Craven).

Subsequent to this work, SGC (in December, 2010) compiled and compared the publicly available geophysical data for the Mt Barrett and Mt Weld features. This work was also done on behalf of Oroya Mining Limited and is described in the memorandum '*MtBarrett-MtWeld-Geophysical-Comparision\_SGC#2127*' (Carew, Craven). The comparison showed that the two features had similar magnetic profiles and it was recommended that a 3D magnetic model be generated for the Mt Weld feature so as to allow for further comparison with the Mt Barrett magnetic anomaly/model as well a comparison with any available Mt Weld drilling information.

Datamotion Asia Pacific Limited has asked SGC to generate a 3D magnetic model over the Mt Weld carbonatite, using the publicly available magnetic data (as per the recommendation in *SGC#2127*). Datamotion has also asked that the previous worked (*SGC#2015* and *SGC#2127*) be combined and presented along with the results of the 3D Mt Weld magnetic model.

This memorandum presents the previous work SGC has done on the Mt Barrett and Mt Weld features, the 3D Mt Weld magnetic model and a comparison of the Mt Barrett and Mt Weld 3D magnetic models. Much of the material has been extracted from the previous SGC reports, with minor modifications.

# 2. MT BARRETT MAGNETIC MODELLING (FEBRUARY, 2010)

This section describes the previous modelling work done on the Mt Barrett magnetic anomaly. This work was originally presented in *Mt-Barrett-Magnetic-Modelling\_SGC#2015* (Carew, Craven).

Part of the publicly available Lake Wells Magnetic data (collected in 1994 along 200 m spaced east-west flight lines at a nominal flying height of 60 m) has been modelled using both the forward and inverse modelling techniques. A brief description of these modelling techniques is given in *Appendix A*.

The aim of the modelling was to obtain estimates for the depth to top, attitude and upper-surfacegeometry of the targeted circular 'bulls eye' magnetic anomaly at the Mt Barrett project. The source of this anomaly has been previously interpreted as a late magnetic intrusive and is considered prospective for a magnetite-gold mineralization system and or Mt Weld carbonatite-style REE mineralisation. **Figure 1** shows an image of the total-magnetic-intensity (TMI) over and around the targeted Mt Barrett anomaly.

All models are referenced to **GDA94/MGA51**. The ground surface has been assigned an RL of zero and is assumed flat over the modelling area.





### 2.1 Forward Modelling-Mt Barrett

Two elliptical pipe-like bodies have been used to forward model six profiles of the magnetic data. This model along with the line data used for the modelling is shown in *Appendix B*. The modelled depth to top below surface varies and is shallowest in the south western corner of the modelled source. Here the modelled depth to top is ~280 m. The maximum depth to top of the forward modelled source occurs in the north western corner and is ~500 m.

The outline of the top of the forward model (orthogonal projection to surface) is shown below in **Figure 2**. The modelled north-south and east-west dimensions are 1330 m and 2050 m respectively. The modelled vertical depth extent is 3400 m and the modelled source is essentially vertically dipping.



**Figure 2**. Outline of the top of the forward modelled magnetic source (red) with modelled profiles (magenta) on analytic signal (top) and 1<sup>st</sup> vertical derivative of the reduced-to-pole magnetics images (bottom).

## 2.2 3D Modelling-Mt Barrett

The 3D inversion model is contained in the file *Mt-Barrett-3D-Magnetic-Model.bin* and can be viewed using the freely available software on the attached CD. The elliptical forward modelled bodies have also been imported into the 3D environment for viewing and comparison with the inversion model. Images of the TMI, analytic signal and 1<sup>st</sup> vertical derivative of the reduced-to-pole (RTP) magnetics are also shown. Level depth slices and north-south and east-west sections through the 3D inversion model are shown in *Appendix C*.

The 3D inversion model indicates the upper surface of the magnetic source has complex geometry with a variable depth to top and or a variable magnetic susceptibility. The shallowest part of the inversion model is (as in the forward model) in the south west corner of the magnetic source. **Figure 3** shows a screenshot of the 3D inversion model with the targeted magnetic feature in the central foreground. An image of the analytic signal (AS) has been displaced downwards to an RL of -450 m to illustrate the variability in the depth to top below surface.



**Figure 3.** View looking north-west of at the 0.020 SI magnetic susceptibility iso-surface of the 3D inversion model with a semi-transparent image of the AS displayed at an RL of -450m.

#### 2.3 Discussion-Mt Barrett

The forward modelled source is comprised of two simple magnetically homogenous elliptical pipes; a relatively small, shallow one in the south west corner overlying a larger one. This simplicity is due to the limitations and practicalities of the forward modelling technique and it is clear that these simple shapes only approximate the upper surface of the real magnetic source. The magnetic profiles and inversion modelling results show the top of the magnetic source is considerably more complex and either has a varying depth to top and or an inhomogeneous magnetic susceptibility.

The forward model indicates the depth to top of the targeted magnetic source ranges from ~300 m in the south western corner to ~500 m in north western corner with the centre of the modelled magnetic source ~450 m below surface. These depth estimates are considered well constrain, particularly given the small (~1/3) depth/width ratio of the modelled source which is favourable for the forward modelling technique. The modelled aerial extent and x-y position of the magnetic source are also considered well constrained. The modelled depth extent for the magnetic source is 3400 m. This parameter is inherently unconstrained; however, the 3D inversion also indicates the source has a depth extent of ~3 km. It is considered unlikely that the real magnetic source has a vertical depth extent of less than ~500 m.

The inversion models show the shallowest parts of the source forms a well developed annulus with somewhat squarish outer edges. These square edges may be indicating the edges of the interpreted intrusion are in part structurally controlled. The overall shape of the magnetic susceptibility model is also evident in various images made from enhancements of the TMI data. This shape is considered reasonably indicative of the real magnetic source and can be used with some confidence when attempting to interpret the geological setting and the cause of the anomaly.

The inversion modelling does not clearly define the boundaries of the magnetic body. The locations (top and outer sides) indicated by the forward modelled are better constrained and should be used as a guide for any targeting or drill testing in the future.

The mean depth to top of the magnetic body is probably between 350 m and 450 m below surface. Some shallower sections have been indicated in the south western corner of the system. However, it is possible this perceived shallowness is due, at least in part, to locally increased magnetic susceptibility, or possibly even due to magnetic material overlying the main magnetic complex.

Any drill holes designed to target the magnetic source should be planned to a vertical depth of ~500 m. If warranted, geological magnetic susceptibility information obtained from the drilling can then be used to help refine and constrain the magnetic modelling. Therefore, if two or more holes are planned for initial testing purposes, it may be optimal to test a central portion of the magnetic complex before targeting the relatively less constrained outer boundaries.

Given the ~400 m modelled depth to top it is unclear and probably unlikely that gravity surveying would provide any additional information that may be useful for targeting or interpretive purposes. The modelled depth to top is also beyond the effective depth of exploration limit for induced-polarisation (IP) surveys that are often used to map or assess sulphide content and distribution within possible large intrusive-alteration systems of this type. Nevertheless, an investigation into the usefulness of IP may be warranted if drilling indicated that the system is sufficiently mineralised, particularly in the shallower (~250-350 m) parts of the system or in overlying, non magnetic greenstones.

# 3. COMPARISION OF GEOPHYSICAL DATA (DECEMBER, 2010)

This section describes and compares the publicly available geophysical data over the Mt Weld carbonatite and the Mt Barrett bullseye style magnetic anomaly. The work in this section was previously presented in *MtBarrett-MtWeld-Geophysical-Comparision\_SGC#2127* (Carew, Craven).

## 3.1 Magnetic Data

The freely available magnetic data over Mt Weld is 400 m line-spaced airborne magnetic data (collected in 1992 by the Government) and over Mt Barrett is 200 m line-spaced data (collected in 1994). Both magnetic surveys were flown with 60 m (nominal) terrain clearances along east west lines. Figure 4 shows images of the total magnetic intensity (TMI) over each of the areas of interest. These images are shown at approximately equal horizontal scale but have been generated using different colour stretches.

**Figure 5** shows the north-south TMI profiles (taken from survey tie-lines) over each feature. The locations and extents of these profiles are shown by the magenta coloured lines in **Figure 4**. Note the Mt Barrett magnetic profile was shifted south for comparison with the Mt Weld anomaly on the same north-south axis. The TMI amplitudes in **Figure 5** are in nT (nano-Tesla) and are shown on the left and right vertical axis for Mt Weld and Mt Barrett respectively.

The TMI profiles have similar wavelengths; however the Mt Weld anomaly has ~5 times the amplitude of the Mt Barrett anomaly. This indicates that if the bulk of the two magnetic sources are at similar depths below surface, the Mt Barrett magnetic source would contain significantly less magnetite/pyrrhotite than the Mt Weld magnetic source. Alternatively if the two magnetic sources had similar magnetic content, then the Mt Barrett source would be deeper and smaller than the Mt Weld magnetic source.

3D inversion modelling of the Mt Barrett magnetic anomaly indicated it had a depth to top in the 300-500 m range (Carew, Craven, *Mt-Barrett-Magnetic-Modelling\_SGC#2015*). The same modelling technique could also be applied to the Mt Weld anomaly. Comparison of the Mt Weld model with known information about the depth of the real Mt Weld magnetic source should provide an indication of the reliability of the modelling technique, and specifically, indicate if the technique was under or over estimating the depths to top of the Mt Weld and Mt Barrett magnetic sources. A review of the drilling information from Mt Weld should also provide an insight into the depth and strength of oxidation within the carbonatite.



Figure 4. TMI images. Mt Weld (top) and Mt Barrett (bottom) with survey flight lines (black) and selected magnetic profile (magenta).



**Figure 5**. North-south TMI profiles for Mt Weld (red and left vertical axis), Mt Barrett (blue and right vertical axis).

### 3.2 Gravity Data

**Figure 6** shows the (freely available) gravity stations and gridded gravity data over each anomaly. These images are shown at approximately equal horizontal scale but have been generated using different colour stretches.

The large spacing of the gravity stations over and around both features means the gravity data is primarily reflecting broader regional variations. There is insufficient gravity data available to properly isolate and evaluate the signature of each feature. **Figure 7** shows the gravity stations and the respective Bouguer gravity values (in gravity units) on images of the reduced-to-pole (RTP) magnetics.



**Figure 6**. Bouguer gravity images over the Mt Weld (top) and Mt Barrett (bottom) with gravity stations (black) and selected magnetic profile (magenta).





**Figure 7**. RTP images over the Mt Weld (top) and Mt Barrett (bottom) with gravity stations (black) and Bouguer gravity values and selected magnetic profile (magenta).

### 3.3 Radiometrics

**Figure 8** shows the total count radiometrics over each feature. This radiometric data was collected in the airborne surveys described above. There is no radiometric anomalism associated with either the Mt Barrett or Mt Weld features. This is solely reflecting the lack of outcrop (presence of transported cover) over each feature rather than their elemental composition.



Figure 8. Total count radiometric images over the Mt Weld (top) and Mt Barrett (bottom) with selected magnetic profile (magenta).

### 3.4 DISCUSSION

The Mt Barrett and Mt Weld magnetic profiles have similar shape and wavelength, possibly indicating similar depths to top. If the depth to top of the Mt Weld magnetic source is known then modelling of the freely available magnetic data is recommended as it would provide a means of assessing the reliability of the previously generated (Carew, Craven, *Mt-Barrett-Magnetic-Modelling\_SGC#2015*) Mt Barrett magnetic model.

The gravity signature of Mt Weld, although poorly sampled in the freely available data appears subdued. Furthermore the Mt Barrett magnetic signature is ~5 times less than that of Mt Weld, possibly indicating a significant difference in composition. Therefore it is unclear if a gravity survey over the Mt Barrett feature would provide any significant or definitive information, (e.g. a distinct gravity profile that could be used to model the depth to top). No gravity surveying of the Mt Barrett feature is recommended at this stage.

As indicated by the existing model (Carew, Craven, *Mt-Barrett-Magnetic-Modelling\_SGC#2015*) and without further modelling/information, the depth to top of the Mt Barrett magnetic source is still considered to be in the 300-500 m range. It should be noted that this is the estimated depth to top of the magnetite and or pyrrhotite component and it is possible that prospective mineralisation (particularly REE mineralisation) overlies the magnetic source. A locally intense and deep oxidation profile could generate this scenario. The existing magnetic modelling and or any additional modelling cannot determine the existence of and or depth to any non-magnetic mineralisation.

The size and approximately flat lying top of the Mt Barrett magnetic anomaly/model makes it amendable to vertical drilling. Furthermore a vertical drillhole should intersect both the magnetic source and any associated overlying mineralisation. A vertical drill hole planned for ~400-500 m deep is recommended as the best means of assessing the prospectivity of the anomaly.

# 4. MT WELD MAGNETIC MODELLING

This section describes the recently (January, 2011) generated 3D Mt Weld magnetic model.

A subset of the publicly available magnetic data over Mt Weld (400 m line-spaced airborne magnetic data collected in 1992) has been used to generate a 3D inversion model. The aim of the modelling was to obtain estimates for the depth to top, attitude and upper-surface-geometry of the Mt Weld Magnetic source so as to allow for a comparison with the Mt Barrett modelled properties.

**Figure 9** shows an image of the total-magnetic-intensity (TMI) over and around the Mt Weld magnetic feature.



Figure 9. TMI (linear colour stretch shaded from the NE) over and around Mt Weld.

## 4.1 3D Modelling-Mt Weld

The 3D inversion model is contained in the file *Mt-Weld-3D-Magnetic-Model.bin* and can be viewed using the freely available software on the attached CD. Images of the TMI, analytic signal and reduced-to-pole (RTP) magnetics are also shown. Level depth slices and north-south and east-west sections through the 3D inversion model and are shown in *Appendix D*.

**Figure 10** shows a screenshot of the 3D inversion model with the Mt Weld magnetic feature in the central foreground. An image of the analytic signal (AS) has been displaced downwards to an RL of -450 m to illustrate the variability in the depth to top and provide an analogue to **Figure 3**.



**Figure 10.** View looking north-west of at the 0.075 SI magnetic susceptibility iso-surface of the 3D Mt Weld inversion model with a semi-transparent image of the AS displayed at an RL of -450m.

## 4.2 Discussion-Mt Weld

The Mt Weld inversion model indicates the core of the Mt Weld feature is non-magnetic and surrounded by a magnetic annulus with variable magnetic susceptibility (possibly indicating variable depth of weathering). The depth to top of the magnetic component of the Mt Weld feature appears to vary from ~200-300 m around parts of the northern half of the annulus to ~400-600 m for the eastern and western extremities of the annulus. These depth to top estimates are based on parts of the model with similar magnetic susceptibility and are only indicative of the variations in the top of the magnetic lithologies; i.e. the magnetite and or pyrrhotite content.

The broken up appearance (variable magnetic susceptibility) of the upper parts of the model are probably due in part to the low resolution, 400 m spaced line data used to generate the model, i.e. a more detailed

data set (e.g. 100 m spaced line data) should result in a higher resolution, relatively more continuous and smoother susceptibility model.

The Mt Weld magnetic source appears complex in 3D. This suggests that 2D forward modelling technique will have limited value in this situation.

A weakly to non magnetic core is a prominent feature in the Mt. Weld TMI image and 3D model and is considered to be a fairly reliable (within the limitations/resolution of the magnetic data) representation of the actual distribution of magnetic material within the carbonatite intrusive system. With the absence of geological control, it is not known if this non magnetic core is a phase of the intrusive or country rock.

If it can be sourced, drilling information from the magnetic and non magnetic parts of the carbonatite system would be very useful for determining the actual depths to top of the magnetic source and the relationship between the high magnetic susceptibilities and the REE mineralization. Unfortunately no relevant drilling information could be sourced at the time of writing.

# 5. COMAPRISION OF 3D MODELS

The two main differences between the Mt Weld and Mt Barrett magnetic features are their size and magnetic susceptibility. The 3D magnetic models indicate Mt Weld and Mt Barrett have ~3 km and ~1.5 km diameters respectively and maximum magnetic susceptibilities of ~0.30 SI and ~0.08 SI respectively.

The 3D model for Mt Weld indicates depths to top that range from ~200-600 m below surface and the Mt Barrett 3D model indicates depths to top between ~300 m and 500 m. These indications are somewhat subjective as they depend on the magnetic susceptibility chosen to define the tops of the features. However, both models show the bulk of the magnetic components of each feature are  $\geq$  250 m and show variable depths to top. For both models, the depth to top/diameter ratio is less than ~1/3. This ratio is favourable for constraining both the diameter and depth to top in the modelling process.

The relatively small size of Mt Barrett may be contributing to the difference in the shape of the two models. The Mt Weld 3D model shows a well developed, depth extensive non-magnetic core surrounded by a magnetic annulus with varying magnetic susceptibility and or depth to top. The Mt Barrett 3D model also shows a similarly variable magnetic annulus although the magnetic core is far less well developed, particularly at depths beyond ~500 m below surface. This may be an accurate reflection of the local geology; e.g. the interpreted intrusive system is not as distinctly layered and differentiated as the Mt. Weld system. It also reflects the limitations or the magnetic data and modelling at these depths; i.e. an inability to resolve magnetic sources with horizontal separations less than their distance from the magnetic core in the Mt Barrett model starts loosing definition and blending into the side wall of the annulus at ~700 m below surface, i.e. at a depth of approximately the inner diameter of the magnetic annulus. Put simply it is beyond the resolution of the magnetic data and the modelling process to reliably define magnetic susceptibility distributions and depth extents beyond depths of ~600 m. Geologically, a non magnetic phase of the Mt. Barrett system may extend to considerable depth, similar to the situation inferred for Mt Weld.

Overall the 3D models indicate that the Mt. Barrett and Mt. Weld magnetic features both have variable depths to top of  $\ge$  200 m and variable magnetic susceptibilities. The models also in indicate the two magnetic features may have similar basic geometry.

It is strongly recommended that geological / drilling information from the Mt Weld be sourced to help assess and interpret the 3D magnetic model. Ideally, this should clarify the relationship between the magnetics and the REE distribution within the carbonatitie and help plan drill testing of the Mt Barrett system and magnetics. The limited available drilling in the Mt. Barrett area should also be reviewed.

# **Appendix A- Notes on the Modelling Techniques**

The forward-modelling technique assumes a perceived geological source, calculates the theoretical magnetic field surrounding this source and compares it with the observed magnetic field. The shape, location and magnetic properties of the modelled source can then be adjusted until its theoretical magnetic field closely approximates the observed magnetic field. In general a modelled source that produces a good fit to the observed data is not a unique solution. Parameters such as magnetic susceptibility, depth to top and thickness can be combined in many ways (within certain ranges) to produce very similar theoretical responses.

The 3D-inversion modelling technique uses the University of British Columbia's MAG3D program library. It is an autonomous algorithm that aims to produce a smoothly varying modelled magnetic susceptibility distribution. Therefore discontinuities such as faults and magnetic unit boundaries are typically not well resolved by 3D inversions. The 3D inversion model however does provide a good indication of the attitude of the magnetic source as well as an approximation for its overall shape.

# Appendix B- Mt Barrett Forward Magnetic Models



Southern Geoscience Consultants Pty.Ltd				
OROYA MINING LIMITED Mt Barrett				
Forward Magnetic Model 6981700N				
Map Reference:				
Author:	Original scale: 1:50000	Report No.:		
Drawn by:	Date:	Plan No.:		



Map Reference:		
Author:	Original scale: 1:50000	Report No.:
Drawn by:	Date:	Plan No.:



Southern Geoscience Consultants Pty.Ltd				
OROYA MINING LIMITED Mt Barrett				
Forward Magnetic Model 6982500N				
Map Reference:				
Author:	Original scale: 1:50000	Report No.:		
Drawn by:	Date:	Plan No.:		

# Appendix C- Mt Barrett 3D Model Sections







6981570N 0--500--1000--1500--2000--2500--3000-511000 512000 513000 514000 515000













# Appendix D- Mt Weld 3D Model Sections









