Mineral Resource Estimate

FERROWEST LIMITED

Yalyirimbi Iron Project
Mineral Resource Report
Northern Territory

By
Grant Louw
BSc (Hons), MAIG

For:
Ferrowest Limited
Unit 18, 28 Belmont Ave
Belmont
WA 6104

Approved:

Gerry Fahey
Director
Executive Summary

CSA Global Pty Ltd (CSA) was engaged by Ferrowest Limited (Ferrowest) to complete an updated Mineral Resource estimate for haematite iron mineralisation at the Yalyirimbi Iron Project (Yalyirimbi) A and M Deposits. This work is part of the ongoing geological resource evaluation programme at Yalyirimbi which was previously operated by Ngalia Resources Pty Ltd (Ngalia). The project area lies about 200km North West of Alice Springs in the Northern Territory, Australia on exploration licence 24548. The modelled deposits mainly consist of primary haematite mineralisation deposited within shallow dipping, brecciated quartzites of the Vaughan Springs Formation. A minor portion of the modelled deposits consists of surficial detrital material derived from the primary mineralisation. The Mineral Resource estimate is based on the assayed sample results obtained from 115 reverse circulation (RC) holes totalling 4,917 metres, and 8 diamond drill holes totalling 356.8 metres.

The Mineral Resource estimate for the modelled mineralised zones at Yalyirimbi is classified as Indicated and Inferred. This is based on confidence in, and continuity of the mineralisation and geological interpretations, the results from the drilling campaigns, drill hole spacing, density measurements and correlation of drill results with the available geophysical gravity survey data. The results of the Mineral Resource estimate for the Yalyirimbi haematite deposits are presented in Table 1.

Table 1: Mineral Resource Estimate Results for Yalyirimbi Haematite Deposits.

<table>
<thead>
<tr>
<th>Deposit</th>
<th>Category</th>
<th>Tonnes</th>
<th>Fe %</th>
<th>SiO₂ %</th>
<th>Al₂O₃ %</th>
<th>P %</th>
<th>S %</th>
<th>LOI %</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Indicated</td>
<td>3.2</td>
<td>33.4</td>
<td>42.4</td>
<td>5.6</td>
<td>0.02</td>
<td>0.03</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>Inferred</td>
<td>1.3</td>
<td>29.4</td>
<td>45.8</td>
<td>7.2</td>
<td>0.02</td>
<td>0.02</td>
<td>3.7</td>
</tr>
<tr>
<td>M</td>
<td>Indicated</td>
<td>4.1</td>
<td>25.1</td>
<td>58.8</td>
<td>3</td>
<td>0.02</td>
<td>0.14</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>Inferred</td>
<td>4.8</td>
<td>24.1</td>
<td>59.4</td>
<td>3.8</td>
<td>0.02</td>
<td>0.07</td>
<td>1.8</td>
</tr>
<tr>
<td>Combined</td>
<td>Indicated</td>
<td>7.2</td>
<td>28.7</td>
<td>51.6</td>
<td>4.2</td>
<td>0.02</td>
<td>0.09</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>Inferred</td>
<td>6.1</td>
<td>25.2</td>
<td>56.5</td>
<td>4.5</td>
<td>0.02</td>
<td>0.06</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Indicated + Inferred</td>
<td>13.3</td>
<td>27.1</td>
<td>53.9</td>
<td>4.3</td>
<td>0.02</td>
<td>0.08</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Note: The CSA Mineral Resource was estimated within constraining wireframe solids based on a nominal lower cut-off grade of 15% Fe. The Mineral Resource is quoted from blocks above a 15 % Fe cut-off grade. Differences may occur due to rounding.

CSA has estimated the resources in the Yalyirimbi haematite project area by completing and digitising a cross sectional interpretation using a nominal 15 % Fe cut off, based on the RC and diamond drilling results. Wireframe solids were then created from these, using Datamine Studio 3 software. A block model was then constructed constrained by the wireframe solids and the provided topographic surface digital terrain model. Drill hole geology logging, assay results data and gravitational anomaly data have been the primary sources of information used to generate the model.
A grade estimate was completed using Ordinary Kriging (OK) with an Inverse Distance to the power of 2 (IDS) estimate concurrently carried out as an additional check. Block grade estimates were checked statistically and visually to ensure they honoured the drill hole results and spatial grade distribution.

The principal recommendations for further work are as follows:

- Additional RC drilling to complete the drill pattern, particularly at the edges of the mineralisation, to add confidence in interpolations and prove the extents of mineralisation.

- Additional QAQC measures for the diamond drilling campaign are required, including umpire laboratory duplicate assays across a representative percentage of the samples.

- CSA recommends that the drilling data should be captured and stored in an industry standard relational database such as Datashed or acQuire that does automatic validation, and has libraries of allowed inputs.

- Drill collars should be accurately surveyed by registered surveyors.

Mr Rodney Dale acting on behalf of Ngalia provided CSA with all the initial geological data, upon which the Mineral Resource estimate completed in 2012 was based. This work formed the basis for the 2013 Mineral Resource estimate update, along with the updated drilling data, including previously missing RC drill result data and results from the diamond drilling program provided by Mr Graeme Johnston of Ferrowest. The information in this Report that relates to in-situ Mineral Resources is based on information compiled by Grant Louw of CSA. Grant Louw takes overall responsibility for the Report. He is a Member of the Australian Institute of Geoscientists and the South African Geological Society, and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as a Competent Person in terms of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2004 Edition). Grant Louw consents to the inclusion of such information in this Report in the form and context in which it appears.
Figure 1: Landsat Image of Yalyirimbi Project Area with Gravity Contours
## Contents

**Executive Summary** ........................................................................................................................................................................... I

**Contents** ........................................................................................................................................................................................................ IV

1 Introduction .......................................................................................................................................................................................... 1
   1.1 Scope of Work................................................................................................................................................................................ 1
   1.2 Location......................................................................................................................................................................................... 1

2 Geology and Mineralisation .............................................................................................................................................................. 3
   2.1 Geology ....................................................................................................................................................................................... 3
   2.2 Mineralisation.............................................................................................................................................................................. 3

3 Data ....................................................................................................................................................................................................... 5
   3.1 Drill Holes .................................................................................................................................................................................. 5
      3.1.1 Collars.................................................................................................................................................................................. 5
      3.1.2 Down hole Surveys .......................................................................................................................................................... 6
      3.1.3 Samples.............................................................................................................................................................................. 6
      3.1.4 Lithology........................................................................................................................................................................... 6
      3.1.5 Specific Gravity ........................................................................................................................................................... 6
   3.2 QAQC ......................................................................................................................................................................................... 7
      3.2.1 Standards and Blanks ..................................................................................................................................................... 7
      3.2.2 Field Duplicates ........................................................................................................................................................... 8
      3.2.3 Diamond twin drilling .................................................................................................................................................. 9

4 Geological Modelling ..................................................................................................................................................................... 11
   4.1 Software .................................................................................................................................................................................. 11
   4.2 Topography ............................................................................................................................................................................ 11
   4.3 Wireframing ........................................................................................................................................................................... 11

5 Statistics ...................................................................................................................................................................................................... 13
   5.1 Drill Hole Flagging .............................................................................................................................................................. 13
   5.2 Sample Compositing ......................................................................................................................................................... 13
   5.3 Summary Statistics ............................................................................................................................................................. 14
   5.4 Balancing Cuts ................................................................................................................................................................. 15

6 Variography .................................................................................................................................................................................... 17
   6.1 Methodology ........................................................................................................................................................................ 17
   6.2 Spatial Variograms ......................................................................................................................................................... 17

7 Block Modelling ............................................................................................................................................................................ 20
   7.1 Block Model Extents and Block Size .................................................................................................................................. 20
   7.2 Specific Gravity Assignment ............................................................................................................................................. 20

8 Grade Estimation ........................................................................................................................................................................... 21
   8.1 Methodology ........................................................................................................................................................................ 21

9 Model Validation ............................................................................................................................................................................. 22
   12.1 Additional Drilling ............................................................................................................................................................ 28
   12.2 Diamond Drilling QAQC .................................................................................................................................................. 28
   12.3 Data Storage ....................................................................................................................................................................... 28
   12.4 Drill Collar Survey .......................................................................................................................................................... 28

10 Classification ................................................................................................................................................................................ 25

11 Resource Reporting ................................................................................................................................................................... 26

12 Recommendations ...................................................................................................................................................................... 28

13 References ............................................................................................................................................................................... 29

---

Report No: R131.2014
Figures

Figure 1: Landsat Image of Yalyirimbi Project Area with Gravity Contours ............................................ III
Figure 2: Location of Yalyirimbi Iron Project ........................................................................................... 2
Figure 3: Geology of the Yalyirimbi Iron Project ..................................................................................... 4
Figure 4: Fe Grade % vs SG Determination .............................................................................................. 7
Figure 5: Blanks Submitted - Fe ............................................................................................................... 7
Figure 6: Standard GIOP-18 ..................................................................................................................... 8
Figure 7: Fe Original vs. Duplicate Assay ................................................................................................. 9
Figure 8: Probability Plot Diamond Drill Holes (brown) and RC Drill Holes (blue) ................................... 10
Figure 9: Plan View showing Extents of Modelled Mineralised Zones (Inset Cross Sections) ................... 11
Figure 10: Oblique Top Views showing MINZON Lens Numbering System ........................................... 13
Figure 11: Fe Histogram A (Brown) and M (Blue) Deposits Overlaid ..................................................... 15
Figure 12: M Deposit Fe % Histograms. Raw Data Left, After Gaussian Anamorphosis Right ................. 17
Figure 13: Gaussian Variogram Model for Fe Top, Back Transformed Below. ........................................ 18
Figure 14: Fe A Deposit Trend Plot by Elevation. ................................................................................... 22
Figure 15: Fe Ok vs Fe IDS ...................................................................................................................... 23
Figure 16: Fe - Histogram Comparison Model (Brown) vs. Drill Hole (Blue) .......................................... 24
Figure 17: Yalyirimbi Haematite Project Grade Tonnage Curve ............................................................ 27

Tables

Table 1: Mineral Resource Estimate Results for Yalyirimbi Haematite Deposits. .................................... I
Table 2: Mean Sample Grade Comparison of Diamond Vs RC Drilling .................................................... 9
Table 3: Summary Statistics ................................................................................................................... 14
Table 4: Balancing Cuts Applied to Grade Variables ............................................................................ 15
Table 5: Summary Statistics – Cut, 1m Composited Drill Data ............................................................... 16
Table 6: Variogram Parameters ............................................................................................................. 19
Table 7: Block Model Extents and Cell Size ........................................................................................... 20
Table 8: Search Parameters ................................................................................................................... 21
Table 9: Model versus Drill Hole Grade ................................................................................................. 23
Table 10: Mineral Resource Estimate Reporting for Yalyirimbi A and M Deposits .................................. 26
Table 11: Yalyirimbi – All Classified Mineral Resources – Grade Tonnage Table ................................... 26

Appendices

Appendix 1: Histograms and Probability Plots ...................................................................................... 30
Appendix 2: QAQC Plots ....................................................................................................................... 43
Appendix 3: Model Validation Plots ...................................................................................................... 68
Appendix 4: Gaussian Anamorphosis Histograms ................................................................................ 91
Appendix 5: Variogram Models ........................................................................................................... 98
1 Introduction

1.1 Scope of Work
Ferrowest commissioned CSA to complete an updated Mineral Resource estimate for haematite iron mineralisation at the A and M Deposits in the Yalyirimbir Iron Project area, Northern Territory. Ferrowest supplied all updated sampling data to CSA and CSA has not undertaken a site visit. The scope of work included and was not limited to:

- Inspection and loading of updated resource drilling data.
- Refine the sectional interpretation and wireframed mineralisation envelopes based on the new drilling data using a nominal lower Fe grade cut-off of 15 % and build mineralisation model.
- Analyse drill hole statistics and determine modelling parameters.
- Construct block model, estimate grades and assign bulk density.
- Validate results, classify and report the Mineral Resource.
- Compile a report documenting the resource estimation process.

1.2 Location
Ferrowest’s Yalyirimbir Iron Project is located, about 220km North West of Alice Springs in the Northern Territory, Australia. Road access to the project is north via the sealed Stuart Highway (±120 km), then west via unpaved road ±85 km, to the community of Laramba, then continuing on unpaved roads west another ±15 km to the site. There is a gravel air strip at the community of Laramba. A location map for the project area is shown in Figure 2. The exploration licence 24548, on which the Yalyirimbir Iron Project is located, is owned by Arafura Resources Limited. Under a farm-in agreement in respect of the iron, Ferrowest is operator of the tenement and is earning up to a 60% interest in a subsidiary of Arafura Resources Limited called Arafura Iron Pty Ltd that holds the iron rights on the tenement.
Figure 2: Location of Yalyirimbi Iron Project
2 Geology and Mineralisation

2.1 Geology

The Yalyirimbi haematite Deposits occur in the late Proterozoic Vaughan Springs formation in the Ngalia Basin. The basin is a lens shaped depression in the Arunta inlier with a faulted northern boundary (Thompson 1995). Sedimentation commenced about 850 to 800 Ma when the area was part of a flat plain inundated by a small sea level rise.

The Vaughan Springs Formation is a bedded to well bedded, quartz sandstone and quartzite, which is locally pebbly; with minor mudstone and shale. The quartz sandstone has generally been compressed to a quartzite that is more resistant to erosion than surrounding rocks and forms well defined ridges.

According to Dale (2011) at Yalyirimbi the Vaughan Springs quartzite formations have been mapped at the northern limb of a very broad syncline. Massive and specular haematite outcrops in several areas most notable of which are ‘A’ and ‘M’ Deposits. Local warping and reversals of dip do occur. M Deposit appears to dip gently to the north with a small (± 3 to 4°) plunge towards the east. A Deposit dips gently to the south. (Figure 9).

2.2 Mineralisation

Dale (2011) states that primary haematite mineralisation has been deposited within brecciated quartzites of the Vaughan Springs Formation. The haematite mineralisation appears to be strata-bound if not strati-form. There is evidence of haematite layering and preferential replacement as well as remobilisation into breccia and fault zones.

The assumption has been made that these are primary, likely hydrothermal deposits. This has been supported by regional airborne magnetometer surveys and an initial ground magnetic survey. These surveys have demonstrated that the haematite deposits are completely non-magnetic.
Figure 3: Geology of the Yalyirimbi Iron Project.
3 Data

3.1 Drill Holes

The data from RC drilling campaigns completed by Ngalia was originally stored in a CSA maintained Datashed database. An export of this data consisting of csv format files for collar, survey, assay and lithology was completed for the 2012 Mineral Resource estimate. CSA found that the full iron ore assay suite (XRF and LOI analyses) was not captured in the assay data table for every drill interval. Fe and Al₂O₃ had been fully captured, but the other grade variables were not captured for every drill hole interval.

In order to rectify this situation all drill assay data was converted by CSA from the original laboratory pdf assay sheet certificates to a csv format for import to a Microsoft Access database. The assay data was then matched, based on the sample interval table, to the correct drill hole intervals, and compared with the original assay data export, confirming the correct assay result data and intervals has been collated from the certificates.

The diamond drilling program data completed by Ferrowest was provided to CSA in the form of csv format spreadsheets, with the pdf format assay result certificates also provided. This data included files for collar, survey, assay, lithology and sample number/interval. This data was also imported to the MS Access database for collation. The assay data from the pdf laboratory certificates was extracted as for the RC drill data and imported as an additional validation step and to include the sample weight field, which was missing in the provided csv format file.

The collated drilling data was exported from the Access database. The export consisted of csv format files for collar, survey, assay and lithology, which were then loaded into Datamine Studio 3 Software. CSA completed a basic data validation check on loading the data. The checks included:

- Missing coordinates.
- Duplicate survey, assay and geology intervals.
- Missing surveys.

The drilling data that have been assayed consist of 115 vertically drilled RC drill holes for 2,601m and 8 diamond holes for 285m. Of these 112 RC holes for 1,830m and 8 diamond holes for 198m fall within the interpreted mineralisation zones and are used in the grade estimation.

3.1.1 Collars

At the time this Mineral Resource estimate was undertaken, the collar locations had not been surveyed by licensed surveyors. The collar locations are based on hand held GPS coordinates, with the elevations corrected to the topography. No truncation of co-ordinates has taken place, with modelling proceeding in the Datamine double precision environment.
3.1.2  **Down hole Surveys**

No drill holes within the RC dataset used for the estimation have been down hole surveyed. The diamond drill holes have an end of hole (EOH) shot taken using a single shot Eastman camera by the drilling contractor. Any deviation in the drill holes is expected to be minor as the holes are relatively short, and so model volumes are unlikely to be significantly affected by any potential deviation.

3.1.3  **Samples**

The RC drill samples have been taken as 1m composite samples. The samples were submitted to ALS in Alice Springs, where sample preparation was completed. The prepared samples were shipped to Perth, with iron ore assay suite (XRF and LOI analyses), being completed by ALS in Perth.

Diamond drill samples have been taken as slices off the core and have been submitted to ALS in either Alice Springs or ALS Perth with iron ore assay suite (XRF and LOI analyses), being completed.

3.1.4  **Lithology**

At the time of estimation lithological logging data was not available for all holes. The available information was imported to Datamine to assist in the interpretation.

3.1.5  **Specific Gravity**

Specific Gravity (SG) determinations were completed by Nagrom & Company (Nagrom) on 45 core samples. The core samples were selected by Ferrowest to cover a full grade range of Fe mineralisation at Yalyirimbi. CSA has analysed the results from this test work in order to develop a regression equation, for application into the block model, based on the Fe grade versus SG. The regression equation is:  \[ SG = 0.0235 \times (Fe\ grade) + 2.3055 \]

The raw average SG of the 45 determinations is 3.03, which is close to the previously used 3.1 based on a calculation at the average model grade using the theoretical SG of the constituents. CSA notes there is some variability in the SG results for samples with very similar Fe grades (Figure 4). This can partially be ascribed to the variability in void spaces and partly to lithological differences.
3.2 QAQC

Commercial standards and field blanks have been inserted into the sample stream for the RC drilling. These along with the duplicate assays show that while there are some anomalies, overall the sampling and laboratory have performed adequately. No commercial standards and blanks or duplicate assays have been completed for the diamond drilling, and QAQC validation is reliant on the results from the ALS internal QAQC protocols. Comparisons between the twinned diamond and RC drill hole assay results show very similar grade population distributions and consequently add confidence to the validity of the RC drill results for use in the grade estimation process.

3.2.1 Standards and Blanks

For the RC drilling the submitted blanks were not commercial blanks, and low grade Fe values have been detected from the material used. Graphs for the remaining grade variables are displayed in Appendix 2.

For the diamond drilling ALS internal blanks have returned good results. The blanks have performed well, with no deviation outside the expected bounds, and some very minor return found only for Al₂O₃. The graphical results are shown in Appendix 2.
For the RC drilling the Fe standards representing a grade range reasonably similar to the mineralisation have been submitted with some anomalies noted in the results of the analysis. Overall a good correlation exists between the mean sample grade and the expected standard grade with a limited number of failures that are not considered to be significant. CSA believes the sample results may be used for grade estimation with a reasonable degree of confidence. Further plots are shown in Appendix 2.

**Figure 6: Standard GIOF-18**

For the diamond drilling the internal ALS standard used for the iron suite has performed very well with no deviation outside the expected bounds, and only 5 in one instance reaching the target range upper bound. The results from the LOI standard used by ALS are similarly good with no results outside the expected bounds. The graphical results are shown in Appendix 2.

### 3.2.2 Field Duplicates

For the RC drilling the field duplicates have generally performed well with a good correlation to the original samples, as shown in the scatter plot in Figure 7 for Fe. The plots for the other grade variables are displayed in Appendix 2.
3.2.3 Diamond twin drilling.

The results of the comparison of the diamond twin holes with the RC drill holes has shown that while the individual down hole interval comparisons are not very good, the overall grade populations are very similar. This result is not unexpected as the nature of the mineralisation, which is understood to likely be hydrothermal in nature, has resulted in short range variability. Additionally it is not possible to accurately define the correct direct matching twin intervals, due to the typical natural variability within the vein system over short distances. Based on the similarity of the grade populations, and the results from the QAQC completed with the RC drilling, there is sufficient confidence that the RC sampling results are representative of in-situ grades and are not likely to have any significant bias. Table 2 shows the mean sample grade results for the diamond and RC drill twin holes, while Figure 8 shows a probability plot for the two grade populations, demonstrating the similarity between the sets of results. The probability plots for the other grade variables are presented in Appendix 2.

Table 2: Mean Sample Grade Comparison of Diamond Vs RC Drilling

<table>
<thead>
<tr>
<th></th>
<th>Diamond</th>
<th>RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fe %</td>
<td>25.97</td>
<td>25.92</td>
</tr>
<tr>
<td>SiO₂ %</td>
<td>53.93</td>
<td>53.88</td>
</tr>
<tr>
<td>Al₂O₃ %</td>
<td>5.24</td>
<td>5.33</td>
</tr>
<tr>
<td>P %</td>
<td>0.023</td>
<td>0.020</td>
</tr>
<tr>
<td>S %</td>
<td>0.055</td>
<td>0.040</td>
</tr>
<tr>
<td>LOI %</td>
<td>2.66</td>
<td>2.77</td>
</tr>
</tbody>
</table>
Figure 8: Probability Plot Diamond Drill Holes (brown) and RC Drill Holes (blue).
4 Geological Modelling

4.1 Software
CSA used Datamine Studio 3 software, in the double precision environment, to create the wireframes used for block model building. Geostatistical analysis was carried out using, GeoAccess Professional and Isatis software.

4.2 Topography
A topographic surface digital elevation model (DEM), based on the gravity survey work, was been provided by Ngaila for the 2012 Mineral Resource estimate covering the modelled project area, and this has again been used for the updated 2013 Mineral Resource estimate. The provided three dimensional dxf file was imported to Datamine and verified.

4.3 Wireframing
CSA has refined the sectional interpretation for the A and M Deposits, based on the additional information obtained from the diamond drilling completed by Ferrowest. The sectional interpretation of the Fe mineralisation zones is based on delineation using a nominal 15 % Fe cut-off grade. The gravitational anomaly data has also been used to help inform the extents of the mineralisation zone interpretation. The sectional interpretations were digitised and linked to form wireframe solids (Figure 9). The wireframes were validated for integrity including for, open triangles, inconsistent triangles and over-lapping triangles.

![Figure 9: Plan View showing Extents of Modelled Mineralised Zones (Inset Cross Sections).](image-url)
There are a number of smaller lenses, representing about 1 % of the total mineralised volume, that have been interpreted based on a combination of gravitational anomalies and drill assay results, but which do not have along or across drill section support. These small zones are estimated, but not reported as part of the JORC reportable 2013 Mineral Resource estimate, as they are considered not to have sufficient support to allow classification under the code guidelines. These lenses are included in the modelling for exploration targeting purposes, and to ensure that additional potentially more extensive mineralised zones are noted for possible follow up.

Two small zones of internal waste were also defined in A Deposit and wireframe solids constructed to allow these zones to be removed from within the mineralisation zones. Two model limiting wireframes were also made that will allow sufficient waste to be defined around the interpreted mineralisation for mining engineering purposes.
5 Statistics

5.1 Drill Hole Flagging

The drill hole samples were flagged according to their location relative to the wireframes using the code MINZON. The drill hole samples from within each mineralised envelope and the below cut off zones were flagged with a separate MINZON code. This separate coding for each envelope allows the choice of using hard or soft boundaries during the grade estimation process. An additional code ZONE was assigned to the A (ZONE=1) and M (ZONE=2) deposits to allow easy analysis and comparison of the two deposits. MINZON coding allocated to the individual lenses is shown in Figure 10.

![Figure 10: Oblique Top Views showing MINZON Lens Numbering System](image)

5.2 Sample Compositing

All RC samples are 1m long, while the diamond drilling within the mineralisation lens interpretations was primarily sampled at 1m intervals. Down hole compositing to 1m within the mineralisation lenses was completed using the COMPDH process in Datamine with MODE=1. Setting MODE to 1 forces all samples to be included in one of the composites by adjusting the composite length, while keeping it as close as possible to the nominated composite length. The maximum possible composite length will then be 1.5 x the nominated
length. Compositing had no impact on the 1m RC samples, and a negligible effect on the mean grades for the diamond drilling.

5.3 Summary Statistics

The flagged drill hole data was loaded into GeoAccess Professional software and statistical analyses were carried out. The analysis showed the average sample grade for Fe in A deposit is higher than in M Deposit (Figure 11 and Table 3). Statistics were generated for Fe and primary contaminant element grades for all data within each deposit combined and for each lens separately. Table 3 presents the summary statistics for the samples within the mineralisation envelopes for all data in each of the two deposits.

Table 3: Summary Statistics

<table>
<thead>
<tr>
<th></th>
<th>A Deposit</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LENGTH</td>
<td>Fe</td>
<td>SiO₂</td>
<td>Al₂O₃</td>
<td>P</td>
<td>S</td>
<td>LOI</td>
</tr>
<tr>
<td>Number</td>
<td>1080</td>
<td>1072</td>
<td>1072</td>
<td>1072</td>
<td>1072</td>
<td>1072</td>
<td>1072</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.99</td>
<td>4.73</td>
<td>4.99</td>
<td>0.46</td>
<td>0.003</td>
<td>0.004</td>
<td>0.37</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.01</td>
<td>65.65</td>
<td>88.70</td>
<td>20.80</td>
<td>0.099</td>
<td>0.428</td>
<td>10.68</td>
</tr>
<tr>
<td>Mean</td>
<td>1.00</td>
<td>32.84</td>
<td>42.73</td>
<td>5.89</td>
<td>0.017</td>
<td>0.025</td>
<td>3.42</td>
</tr>
<tr>
<td>Median</td>
<td>1.00</td>
<td>32.34</td>
<td>42.00</td>
<td>5.18</td>
<td>0.014</td>
<td>0.020</td>
<td>3.11</td>
</tr>
<tr>
<td>Std Dev</td>
<td>0.00</td>
<td>12.84</td>
<td>15.91</td>
<td>3.56</td>
<td>0.011</td>
<td>0.022</td>
<td>1.73</td>
</tr>
<tr>
<td>Variance</td>
<td>0.00</td>
<td>164.73</td>
<td>253.05</td>
<td>12.67</td>
<td>0.000</td>
<td>0.000</td>
<td>2.98</td>
</tr>
<tr>
<td>Coeff Var</td>
<td>0.00</td>
<td>0.39</td>
<td>0.37</td>
<td>0.60</td>
<td>0.623</td>
<td>0.856</td>
<td>0.51</td>
</tr>
</tbody>
</table>

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>948</td>
<td>948</td>
<td>948</td>
<td>948</td>
<td>948</td>
<td>948</td>
<td>948</td>
</tr>
<tr>
<td>Minimum</td>
<td>1.00</td>
<td>3.47</td>
<td>7.77</td>
<td>0.19</td>
<td>0.001</td>
<td>0.001</td>
<td>0.10</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.30</td>
<td>63.07</td>
<td>92.80</td>
<td>19.20</td>
<td>0.435</td>
<td>5.000</td>
<td>8.31</td>
</tr>
<tr>
<td>Mean</td>
<td>1.00</td>
<td>24.87</td>
<td>58.44</td>
<td>3.48</td>
<td>0.026</td>
<td>0.148</td>
<td>1.77</td>
</tr>
<tr>
<td>Median</td>
<td>1.00</td>
<td>22.83</td>
<td>59.60</td>
<td>2.31</td>
<td>0.016</td>
<td>0.019</td>
<td>1.29</td>
</tr>
<tr>
<td>Std Dev</td>
<td>0.01</td>
<td>10.94</td>
<td>15.87</td>
<td>3.33</td>
<td>0.033</td>
<td>0.595</td>
<td>1.42</td>
</tr>
<tr>
<td>Variance</td>
<td>0.00</td>
<td>119.74</td>
<td>251.69</td>
<td>11.10</td>
<td>0.001</td>
<td>0.355</td>
<td>2.02</td>
</tr>
<tr>
<td>Coeff Var</td>
<td>0.01</td>
<td>0.44</td>
<td>0.27</td>
<td>0.96</td>
<td>1.257</td>
<td>4.022</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Histograms and probability plots were also generated to assist in the analysis. The histogram for Fe is shown Figure 11. Histograms and probability plots for Fe and the major contaminant grades are presented in Appendix 1.
5.4 Balancing Cuts

When using an estimation algorithm such as Ordinary Kriging (OK) for a data population which is positively skewed, it is important to reduce the impact of extreme high grades (‘outliers’) in the sample data, in order to avoid over-estimation of block grades. Similarly for negatively skewed populations a bottom cut may be required to prevent under-estimation. The selection of an appropriate balancing cut involves some subjectivity, but should take account of the characteristics of the population distribution.

The individual lenses, or combination of lenses, that are used for the grade estimation have been separately analysed. Appropriate cuts have then been determined for each grade variable and applied. Table 4 shows the top cut and bottom cuts applied to the grade variables.

Table 4: Balancing Cuts Applied to Grade Variables

<table>
<thead>
<tr>
<th>MINZON</th>
<th>Grade variable</th>
<th>Cut grade %</th>
<th>Cut type</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Fe</td>
<td>15</td>
<td>Bottom Cut</td>
</tr>
<tr>
<td></td>
<td>SiO₂</td>
<td>72</td>
<td>Top Cut</td>
</tr>
<tr>
<td>7</td>
<td>SiO₂</td>
<td>86</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>Al₂O₃</td>
<td>18</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.065</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>0.1</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>LOI</td>
<td>9</td>
<td>Top Cut</td>
</tr>
<tr>
<td>12</td>
<td>Al₂O₃</td>
<td>12</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.16</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>0.12</td>
<td>Top Cut</td>
</tr>
</tbody>
</table>
The cut composited drill hole file summary statistics are presented in Table 5.

Table 5: Summary Statistics – Cut, 1m Composited Drill Data

<table>
<thead>
<tr>
<th>MINZON</th>
<th>Grade variable</th>
<th>Cut grade %</th>
<th>Cut type</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Al₂O₃</td>
<td>13</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.125</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>2.5</td>
<td>Top Cut</td>
</tr>
<tr>
<td>14</td>
<td>SiO₂</td>
<td>20</td>
<td>Bottom Cut</td>
</tr>
<tr>
<td></td>
<td>Al₂O₃</td>
<td>16</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.09</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>2.5</td>
<td>Top Cut</td>
</tr>
<tr>
<td>15</td>
<td>Al₂O₃</td>
<td>16</td>
<td>Top Cut</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>1.3</td>
<td>Top Cut</td>
</tr>
<tr>
<td>ZONE</td>
<td>Grade variable</td>
<td>Cut grade %</td>
<td>Cut type</td>
</tr>
<tr>
<td>2</td>
<td>LOI</td>
<td>6</td>
<td>Top Cut</td>
</tr>
</tbody>
</table>

A Deposit (ZONE=1)

<table>
<thead>
<tr>
<th>Number</th>
<th>LENGTH</th>
<th>Fe</th>
<th>SiO₂</th>
<th>Al₂O₃</th>
<th>P</th>
<th>S</th>
<th>LOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1080</td>
<td>1.00</td>
<td>1.00</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.01</td>
<td>1.01</td>
<td>1.01</td>
<td>1.01</td>
<td>1.01</td>
<td>1.01</td>
<td>1.01</td>
</tr>
<tr>
<td>Mean</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Median</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Std Dev</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Variance</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Coeff Var</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

M Deposit (ZONE=2)

<table>
<thead>
<tr>
<th>Number</th>
<th>LENGTH</th>
<th>Fe</th>
<th>SiO₂</th>
<th>Al₂O₃</th>
<th>P</th>
<th>S</th>
<th>LOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>948</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Minimum</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.30</td>
<td>1.30</td>
<td>1.30</td>
<td>1.30</td>
<td>1.30</td>
<td>1.30</td>
<td>1.30</td>
</tr>
<tr>
<td>Mean</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Median</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Std Dev</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Variance</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Coeff Var</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>
6 Variography

6.1 Methodology

For the spatial continuity analysis sample numbers available for analysis determined that for A Deposit MINZON 7 could be used by itself. For M Deposit all lenses were combined to obtain sufficient samples for the analysis. Separate spatial continuity analysis for each grade variable was completed. Since each of the grade variable populations are skewed, a Gaussian anamorphosis was applied in Isatis software to generate a normally distributed grade population distribution for the spatial analysis. An example of the population distribution before and after the Gaussian anamorphosis is shown in Figure 12 for Fe in M Deposit. The variograms of the transformed data were modelled with the results then back transformed.

The modelled variogram parameters for each grade variable from MINZON 7 were used for estimations of all lenses in A Deposit. Similarly the parameters obtained from the combined lenses were used for estimations of all lenses in M Deposit.

6.2 Spatial Variograms

The spatial variograms were modelled using the Gaussian data and then back transformed. Figure 13 shows the spatial continuity modelling for Fe for MINZON 7. Table 6 shows the variogram parameters used in Datamine input file format. Variogram models for the various grade variables are presented in Appendix 5.

<table>
<thead>
<tr>
<th>Fe</th>
<th>Z2Fe2O4</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>0.10</td>
<td>0.15</td>
</tr>
<tr>
<td>0.20</td>
<td>0.25</td>
</tr>
<tr>
<td>0.30</td>
<td>0.35</td>
</tr>
<tr>
<td>0.40</td>
<td>0.45</td>
</tr>
<tr>
<td>0.50</td>
<td>0.55</td>
</tr>
</tbody>
</table>

Figure 12: M Deposit Fe % Histograms. Raw Data Left, After Gaussian Anamorphosis Right
Figure 13: Gaussian Variogram Model for Fe Top, Back Transformed Below.
## Table 6: Variogram Parameters

<table>
<thead>
<tr>
<th>Deposit</th>
<th>Variable</th>
<th>Nugget</th>
<th>Structure</th>
<th>Major</th>
<th>Semi-Major</th>
<th>Minor</th>
<th>Sill</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td>Rotat. 1</td>
<td></td>
<td>Rotat. 2</td>
<td></td>
<td>Rotat. 3</td>
</tr>
<tr>
<td></td>
<td>FE</td>
<td>0.209</td>
<td>1</td>
<td>50</td>
<td>35</td>
<td>3.8</td>
<td>0.576</td>
</tr>
<tr>
<td></td>
<td>SiO2</td>
<td>0.205</td>
<td>1</td>
<td>50</td>
<td>40</td>
<td>6.5</td>
<td>0.577</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.265</td>
<td>1</td>
<td>50</td>
<td>100</td>
<td>5</td>
<td>0.567</td>
</tr>
<tr>
<td></td>
<td>Al2O3</td>
<td>0.220</td>
<td>1</td>
<td>50</td>
<td>65</td>
<td>2.6</td>
<td>0.379</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>0.259</td>
<td>1</td>
<td>100</td>
<td>95</td>
<td>4</td>
<td>0.556</td>
</tr>
<tr>
<td></td>
<td>LOI</td>
<td>0.215</td>
<td>1</td>
<td>55</td>
<td>35</td>
<td>3</td>
<td>0.378</td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>0.363</td>
<td>1</td>
<td>75</td>
<td>140</td>
<td>1</td>
<td>0.436</td>
</tr>
<tr>
<td></td>
<td>SiO2</td>
<td>0.356</td>
<td>1</td>
<td>80</td>
<td>140</td>
<td>1</td>
<td>0.399</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.290</td>
<td>1</td>
<td>120</td>
<td>50</td>
<td>18</td>
<td>0.419</td>
</tr>
<tr>
<td></td>
<td>Al2O3</td>
<td>0.272</td>
<td>1</td>
<td>100</td>
<td>50</td>
<td>11</td>
<td>0.415</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>0.618</td>
<td>1</td>
<td>75</td>
<td>90</td>
<td>11</td>
<td>0.363</td>
</tr>
<tr>
<td></td>
<td>LOI</td>
<td>0.247</td>
<td>1</td>
<td>55</td>
<td>50</td>
<td>13</td>
<td>0.428</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deposit</th>
<th>Variable</th>
<th>Structure</th>
<th>Major</th>
<th>Semi-Major</th>
<th>Minor</th>
<th>Sill</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td>2</td>
<td>140</td>
<td>85</td>
<td>6.5</td>
<td>0.215</td>
</tr>
<tr>
<td></td>
<td>SiO2</td>
<td>2</td>
<td>140</td>
<td>70</td>
<td>6.5</td>
<td>0.218</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>2</td>
<td>140</td>
<td>160</td>
<td>12</td>
<td>0.168</td>
</tr>
<tr>
<td></td>
<td>Al2O3</td>
<td>2</td>
<td>140</td>
<td>200</td>
<td>12.5</td>
<td>0.401</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>2</td>
<td>180</td>
<td>130</td>
<td>16</td>
<td>0.185</td>
</tr>
<tr>
<td></td>
<td>LOI</td>
<td>2</td>
<td>150</td>
<td>220</td>
<td>16</td>
<td>0.407</td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>2</td>
<td>220</td>
<td>150</td>
<td>4</td>
<td>0.201</td>
</tr>
<tr>
<td></td>
<td>SiO2</td>
<td>2</td>
<td>180</td>
<td>150</td>
<td>6</td>
<td>0.245</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>2</td>
<td>270</td>
<td>95</td>
<td>20</td>
<td>0.291</td>
</tr>
<tr>
<td></td>
<td>Al2O3</td>
<td>2</td>
<td>200</td>
<td>140</td>
<td>13</td>
<td>0.313</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>2</td>
<td>275</td>
<td>150</td>
<td>20</td>
<td>0.019</td>
</tr>
<tr>
<td></td>
<td>LOI</td>
<td>2</td>
<td>175</td>
<td>150</td>
<td>15</td>
<td>0.325</td>
</tr>
</tbody>
</table>
7 Block Modelling

7.1 Block Model Extents and Block Size
A volume block model was constructed in Datamine constrained by the topography and constructed mineralisation, internal waste, and model limiting wireframes. The block model contained parent block sizes of 20m (Easting) by 20m (Northing) by 4m (Elevation) with sub-cells used to honour the geometric shapes as shown in Table 7. The block size is based on half the nominal average drill spacing of 40 x 40m, which was validated as appropriate based on the results from a kriging neighbourhood analysis (KNA). The blocks have been coded according to their location relative to the wireframe envelopes using the same coding as for the drill sample flagging, as described in section 5.1.

Table 7: Block Model Extents and Cell Size

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Extent (m)</th>
<th>Block size (m)</th>
<th>Number of blocks</th>
<th>Sub-cell size (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easting</td>
<td>254,580mE</td>
<td>256,780mE</td>
<td>2,200</td>
<td>20</td>
<td>110</td>
<td>5</td>
</tr>
<tr>
<td>Northing</td>
<td>7,503,560mN</td>
<td>7,506,180mN</td>
<td>2,620</td>
<td>20</td>
<td>131</td>
<td>5</td>
</tr>
<tr>
<td>Elevation</td>
<td>550mRL</td>
<td>674mRL</td>
<td>124</td>
<td>4</td>
<td>31</td>
<td>1</td>
</tr>
</tbody>
</table>

7.2 Specific Gravity Assignment
As discussed in Section 3.1.5 a linear regression equation was developed based on the results from the 45 SG determinations versus Fe grade. This equation has been applied to the model blocks, assigning the SG to the model based on the estimated Fe grade. A default SG of 2.7 has been applied to all waste blocks.
8 Grade Estimation

8.1 Methodology

Ordinary Kriging (OK) was the selected method for all grade estimation runs, with an Inverse Distance Squared (IDS) check estimate carried out at the same time. Search ellipse orientations were constructed with reference to the geometry of the mineralisation envelopes. The search distances along the 3 ellipse axes are based on the results of the KNA. The orientations and search radii are tabulated in Table 8 for each zone in Datamine rotation angle format, using the Datamine 3-2-1 (Z-Y-X) axis rotation convention.

Table 8: Search Parameters

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>125</td>
<td>150</td>
<td>10</td>
<td>5</td>
<td>0</td>
<td>-10</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>M</td>
<td>2</td>
<td>150</td>
<td>100</td>
<td>20</td>
<td>0</td>
<td>-4.5</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

A minimum number of 16 and a maximum of 32 samples, based on the results from the KNA, were required for a valid block estimate to be made. A maximum of 4 samples from any one drill hole were used per block estimate, with no octant based searching utilised. A second search pass was employed to estimate blocks further from data. The second search dimensions were twice those of the first search with all other parameters identical. A third search pass with dimensions twenty times the first with a minimum number of 10 and a maximum number of 24 samples was utilised to ensure all blocks were estimated.
9 Model Validation

Model validation was carried out visually, graphically and statistically to ensure that the block model grade accurately represented the drill hole data.

Drill hole cross sections were examined visually to ensure that the model grades honour the local composite drill hole grades. These visual validations were carried out for all estimated grade variables along each drill section. These visual checks confirm the modelled grades reflect the trends of grades in the drill holes.

Trend plots based on eastings, northings and elevation where also used to aid in the geometric grade comparison. The trend plots demonstrate a generally good spatial correlation of model estimate and drill hole grades, with drill meters, volume variance effects and expected smoothing from the OK process taken into account. The Fe easting plot for A deposit is presented in Figure 14, with the remaining plots presented in Appendix 3.

Statistical comparison of the block grades from within the first search volume and drill hole samples for the grade variables showed similar mean grades. The IDS check estimate also shows similar results to the OK estimate with a good correlation for all grade variables. Figure 15 shows the result of the comparison for the Fe OK and Fe IDS estimates. A mean grade table for OK and IDS estimates from within the first search volume and the cut composited drill hole data is presented in Table 9.
Table 9: Model versus Drill Hole Grade

<table>
<thead>
<tr>
<th>Zone 1 Model Search Volume Ordinary Kriged vs Inverse Distance to the Power 2 vs Drill Hole</th>
<th>Fe_OK</th>
<th>Fe_IDS</th>
<th>Fe_DH</th>
<th>SiO2_OK</th>
<th>SiO2_IDS</th>
<th>SiO2_DH</th>
<th>Al2O3_OK</th>
<th>Al2O3_IDS</th>
<th>Al2O3_DH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>1387</td>
<td>1387</td>
<td>1072</td>
<td>1387</td>
<td>1387</td>
<td>1072</td>
<td>1387</td>
<td>1387</td>
<td>1072</td>
</tr>
<tr>
<td>Minimum</td>
<td>17.1</td>
<td>17.5</td>
<td>4.7</td>
<td>19.6</td>
<td>5.0</td>
<td>2.0</td>
<td>2.1</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>50.4</td>
<td>48.3</td>
<td>65.7</td>
<td>68.6</td>
<td>86.0</td>
<td>12.3</td>
<td>12.5</td>
<td>18.0</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>32.2</td>
<td>32.5</td>
<td>32.8</td>
<td>43.3</td>
<td>43.1</td>
<td>42.7</td>
<td>6.0</td>
<td>6.0</td>
<td>5.9</td>
</tr>
<tr>
<td>Zone 2 Model Search Volume Ordinary Kriged vs Inverse Distance to the Power 2 vs Drill Hole</td>
<td>Fe_OK</td>
<td>Fe_IDS</td>
<td>Fe_DH</td>
<td>SiO2_OK</td>
<td>SiO2_IDS</td>
<td>SiO2_DH</td>
<td>Al2O3_OK</td>
<td>Al2O3_IDS</td>
<td>Al2O3_DH</td>
</tr>
<tr>
<td>Number</td>
<td>3146</td>
<td>3146</td>
<td>948</td>
<td>3146</td>
<td>3146</td>
<td>948</td>
<td>3146</td>
<td>3146</td>
<td>948</td>
</tr>
<tr>
<td>Minimum</td>
<td>15.1</td>
<td>13.3</td>
<td>3.5</td>
<td>34.8</td>
<td>33.5</td>
<td>7.8</td>
<td>0.6</td>
<td>0.7</td>
<td>0.2</td>
</tr>
<tr>
<td>Maximum</td>
<td>40.9</td>
<td>44.9</td>
<td>63.1</td>
<td>73.4</td>
<td>76.4</td>
<td>92.8</td>
<td>10.4</td>
<td>10.8</td>
<td>16.0</td>
</tr>
<tr>
<td>Mean</td>
<td>24.4</td>
<td>24.3</td>
<td>24.9</td>
<td>59.3</td>
<td>59.3</td>
<td>58.5</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

The histogram comparing the block grades from within the first search volume and drill hole sample data for Fe in A Deposit is presented in Figure 16. The model demonstrates the expected smoothing resulting from the OK grade estimation process. Histograms and probability plots for all grade variables for A and M Deposits separately are presented in Appendix 3.
Figure 16: Fe - Histogram Comparison Model (Brown) vs. Drill Hole (Blue)
10 Classification

The Mineral Resource has been classified as Indicated and Inferred. The drill spacing, surface mapping, geophysical mapping and recorded mineralisation are sufficient to demonstrate continuity of the mineralisation along and between sections within the majority of the interpreted mineralised zones.

Criteria used for classification of parts of the Mineral Resource as Indicated is based on the areas of higher drilling density, with a reasonably high geostatistical confidence in the estimate, from blocks within the first search volume, allowing confidence in the geological interpretation and mineralisation continuity. The minor lenses that were interpreted based on intersections from single or at most two drill holes have been excluded from the classified portion of the Mineral Resource, as continuity cannot unequivocally be demonstrated for these zones at this time. These zones may represent areas of potential for targeting additional mineralisation, and have only been included in the estimation for this purpose. The remaining estimated volume is classified as Inferred and covers mineralised zones which have sufficient drill sampling coverage to assume but not prove continuity, or which have lower geostatistical confidence in the estimate.

It is noted that Ngalia used hand held GPS RC drill collar locations rather than a Licenced Surveyor and Ferrowest is currently awaiting the Licensed Surveyor to undertake the collar pick-up for the diamond drill holes. An industry standard QAQC program for the diamond drilling program was also still being completed at the time of this report. These shortcomings are not expected to have any material effect on the total mineralised volumes or overall estimated grade. Minor local differences in location of mineralisation and grade estimates are possible once the diamond drill collars are precisely located, but any changes are not expected to be material to the overall Resource estimate.
11 Resource Reporting

The Mineral Resources have been reported based on blocks above a cut-off of 15 % Fe. At this cut-off the modelled mineralisation in the project area is estimated to contain 13.3 Mt, with a mean Fe grade of 27.1 %. Of these reported Mineral Resources, 7.2Mt at a mean grade of 28.7 % Fe or 54.2 % of the total, is in the Indicated category. The reduction in reported classified Mineral Resource tonnage from the previous Inferred estimate is primarily a result of the application of the results of the SG measurements to modelled Fe block grades. In the previous estimate a blanket SG of 3.1 was applied to mineralised material. With the regression equation applied to this model, at the reporting cut-off of 15% Fe, the average model SG is 2.94, resulting in the reduced tonnage reported. The difference in volume as a result of the refinement of the mineralisation zone interpretation from the diamond drilling at the 15 % Fe reporting cut-off is roughly 3,800 m$^3$. The results of the Mineral Resource estimate are presented below in Table 10.

Table 10: Mineral Resource Estimate Reporting for Yalyirimbi A and M Deposits.

<table>
<thead>
<tr>
<th>Deposit</th>
<th>Category</th>
<th>Tonnes</th>
<th>Fe %</th>
<th>SiO₂ %</th>
<th>Al₂O₃ %</th>
<th>P %</th>
<th>S %</th>
<th>LOI %</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Indicated</td>
<td>3.2</td>
<td>33.4</td>
<td>42.4</td>
<td>5.6</td>
<td>0.02</td>
<td>0.03</td>
<td>3.4</td>
</tr>
<tr>
<td>A</td>
<td>Inferred</td>
<td>1.3</td>
<td>29.4</td>
<td>45.8</td>
<td>7.2</td>
<td>0.02</td>
<td>0.02</td>
<td>3.7</td>
</tr>
<tr>
<td>M</td>
<td>Indicated</td>
<td>4.1</td>
<td>25.1</td>
<td>58.8</td>
<td>3</td>
<td>0.02</td>
<td>0.14</td>
<td>1.6</td>
</tr>
<tr>
<td>M</td>
<td>Inferred</td>
<td>4.8</td>
<td>24.1</td>
<td>59.4</td>
<td>3.8</td>
<td>0.02</td>
<td>0.07</td>
<td>1.8</td>
</tr>
<tr>
<td>Combined</td>
<td>Indicated</td>
<td>7.2</td>
<td>28.7</td>
<td>51.6</td>
<td>4.2</td>
<td>0.02</td>
<td>0.09</td>
<td>2.4</td>
</tr>
<tr>
<td>Combined</td>
<td>Inferred</td>
<td>6.1</td>
<td>25.2</td>
<td>56.5</td>
<td>4.5</td>
<td>0.02</td>
<td>0.06</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Indicated + Inferred</td>
<td>13.3</td>
<td>27.1</td>
<td>53.9</td>
<td>4.3</td>
<td>0.02</td>
<td>0.08</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Note: The CSA Mineral Resource was estimated within constraining wireframe solids based on a nominal lower cut-off grade of 15% Fe. The Mineral Resource is quoted from blocks above a 15 % Fe cut-off grade. Differences may occur due to rounding.

The Mineral Resource for the Yalyirimbi project area can also be reported using a variety of cut-offs as presented in the grade tonnage table in Table 11. The corresponding grade-tonnage curve is presented in Figure 17.

Table 11: Yalyirimbi – All Classified Mineral Resources – Grade Tonnage Table

<table>
<thead>
<tr>
<th>Fe % Cut</th>
<th>Volume (m$^3$)</th>
<th>Tonnes</th>
<th>Fe %</th>
<th>SiO₂ %</th>
<th>Al₂O₃ %</th>
<th>P %</th>
<th>S %</th>
<th>LOI %</th>
<th>SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>138,000</td>
<td>460,000</td>
<td>42.8</td>
<td>0.02</td>
<td>31.1</td>
<td>4.0</td>
<td>0.02</td>
<td>2.8</td>
<td>3.31</td>
</tr>
<tr>
<td>37.5</td>
<td>280,000</td>
<td>900,000</td>
<td>40.7</td>
<td>0.02</td>
<td>33.9</td>
<td>4.1</td>
<td>0.02</td>
<td>2.8</td>
<td>3.26</td>
</tr>
<tr>
<td>35</td>
<td>480,000</td>
<td>1,500,000</td>
<td>38.8</td>
<td>0.02</td>
<td>36.3</td>
<td>4.4</td>
<td>0.03</td>
<td>2.8</td>
<td>3.22</td>
</tr>
<tr>
<td>32.5</td>
<td>770,000</td>
<td>2,400,000</td>
<td>36.9</td>
<td>0.02</td>
<td>38.7</td>
<td>4.7</td>
<td>0.03</td>
<td>2.9</td>
<td>3.17</td>
</tr>
<tr>
<td>30</td>
<td>1,150,000</td>
<td>3,600,000</td>
<td>35.1</td>
<td>0.02</td>
<td>41.3</td>
<td>4.7</td>
<td>0.04</td>
<td>2.9</td>
<td>3.13</td>
</tr>
<tr>
<td>27.5</td>
<td>1,660,000</td>
<td>5,100,000</td>
<td>33.2</td>
<td>0.02</td>
<td>44.0</td>
<td>4.8</td>
<td>0.06</td>
<td>2.9</td>
<td>3.08</td>
</tr>
<tr>
<td>25</td>
<td>2,450,000</td>
<td>7,400,000</td>
<td>31.0</td>
<td>0.02</td>
<td>47.5</td>
<td>4.6</td>
<td>0.07</td>
<td>2.7</td>
<td>3.03</td>
</tr>
<tr>
<td>22.5</td>
<td>3,550,000</td>
<td>10,600,000</td>
<td>28.8</td>
<td>0.02</td>
<td>51.2</td>
<td>4.4</td>
<td>0.08</td>
<td>2.4</td>
<td>2.98</td>
</tr>
<tr>
<td>20</td>
<td>4,230,000</td>
<td>12,500,000</td>
<td>27.7</td>
<td>0.02</td>
<td>53.0</td>
<td>4.3</td>
<td>0.08</td>
<td>2.3</td>
<td>2.95</td>
</tr>
<tr>
<td>17.5</td>
<td>4,510,000</td>
<td>13,200,000</td>
<td>27.2</td>
<td>0.02</td>
<td>53.7</td>
<td>4.3</td>
<td>0.08</td>
<td>2.3</td>
<td>2.94</td>
</tr>
<tr>
<td>15</td>
<td>4,540,000</td>
<td>13,300,000</td>
<td>27.1</td>
<td>0.02</td>
<td>53.9</td>
<td>4.3</td>
<td>0.08</td>
<td>2.3</td>
<td>2.94</td>
</tr>
</tbody>
</table>
Figure 17: Yalyirimbi Haematite Project Grade Tonnage Curve
12 Recommendations

12.1 Additional Drilling
Additional RC drilling should be completed to add confidence in interpolations and prove the extents or limits of mineralisation at M Deposit.

12.2 Diamond Drilling QAQC
QAQC measures for the diamond drilling campaign should be completed, including umpire laboratory duplicate assays.

12.3 Data Storage
CSA recommends that the drilling data should be captured and stored in an industry standard relational database such as Datashed or acQuire that does automatic validation, and has libraries of allowed inputs.

12.4 Drill Collar Survey
Diamond drill hole collar positions and any future RC drill holes should be accurately surveyed by a licensed surveyor.
13 References

Dale, G.R., 2011 - Ferrowest briefing notes 20 Dec 11.docx – unpublished briefing notes provided by Ferrowest to CSA.


Appendix 1: Histograms and Probability Plots
Fe % A deposit
SiO$_2$ % A deposit
Al2O3 % A Deposit
S % A deposit
LOI % A deposit
Fe % M deposit
SiO2 % M deposit
Al2O3 % M deposit
P % M deposit
S % M deposit
LOI % M deposit
Appendix 2: QAQC Plots
Blanks submitted with RC drilling – note these are not commercial blanks.
Laboratory Blanks for Diamond drilling campaign

**Blank Fe**

- Fe %
- Average
- Lower
- Upper

**Blank SiO2**

- SiO2 %
- Average
- Lower
- Upper
Standards submitted with RC drilling campaign

Standard GIO-18 Fe

Standard GIO-18 SiO2
Ferrowest Limited
Yalyirimbii Iron Project

Report No: R131.2014
Ferrowest Limited
Yalyirimbi Iron Project

Report No: R131.2014
Laboratory Standards for Diamond drilling campaign

**NCSDC28006 Fe**

- Fe %
- Average
- Upper
- Lower

**NCSDC28006 SiO2**

- SiO2 %
- Average
- Lower
- Upper
**NCSDC28006 S**

- S %
- Average
- Lower
- Upper

**ST-391 LOI**

- LOI %
- Average
- Lower
- Upper

Instance: 1 to 23
Field Duplicates for RC drilling campaign

Fe duplicates

SiO2 Duplicates
Al2O3 Duplicates

P Duplicates
Laboratory Duplicates for Diamond drilling campaign.

**Fe % - Original vs Duplicate**

\[ y = 1x \]
\[ R^2 = 1 \]

**SiO2 % - Original vs Duplicate**

\[ y = 0.9992x \]
\[ R^2 = 1 \]
Al₂O₃ % - Original vs Duplicate

![Al₂O₃ % - Original vs Duplicate](image)

\[ y = 1.0000x \]
\[ R^2 = 1 \]

P % - Original vs Duplicate

![P % - Original vs Duplicate](image)

\[ y = 0.9996x \]
\[ R^2 = 0.9987 \]
Diamond Twin Drilling vs RC drilling probability plots

DDH vs RC FE

DDH vs RC SiO2
Appendix 3: Model Validation Plots
Model validation comparative plots

A Deposit Fe % - Model (brown) vs. Drill hole (blue)

A Deposit SiO$_2$ % - Model (brown) vs. Drill hole (blue)

A Deposit P % - Model (brown) vs. Drill hole (blue)
A Deposit $\text{Al}_2\text{O}_3$ % - Model (brown) vs. Drill hole (blue)

A Deposit S % - Model (brown) vs. Drill hole (blue)

A Deposit LOI % - Model (brown) vs. Drill hole (blue)
M Deposit Al₂O₃ % - Model (brown) vs. Drill hole (blue)

M Deposit S % - Model (brown) vs. Drill hole (blue)

M Deposit LOI % - Model (brown) vs. Drill hole (blue)
Model validation Trend Plots

Trend plot by bench – Fe A deposit

Trend plot by northing – Fe A deposit
Trend plot by Easting – Fe A deposit

Trend plot by bench – Fe M deposit
Ferrowest Limited
Yalyirimbi Iron Project

Trend plot by Northing – Fe M deposit

Trend plot by easting – Fe M deposit
Trend plot by bench – SiO₂ A deposit

Trend plot by northing – SiO₂ A deposit
Trend plot by Easting – SiO₂ A deposit

Trend plot by bench – Al₂O₃ A deposit
Trend plot by northing – $\text{Al}_2\text{O}_3$ A deposit

Trend plot by Easting – $\text{Al}_2\text{O}_3$ A deposit
Trend plot by bench – P A deposit

Trend plot by northing – P A deposit
Trend plot by Easting – P A deposit

Trend plot by bench – S A deposit
Trend plot by northing – S A deposit

Trend plot by Easting – S A deposit
Trend plot by bench – LOI A deposit

Trend plot by northing – LOI A deposit
Trend plot by Easting – LOI A deposit

Trend plot by bench – SiO₂ M deposit
Trend plot by northing – SiO$_2$ M deposit

Trend plot by Easting – SiO$_2$ M deposit
Trend plot by bench – $\text{Al}_2\text{O}_3$ M deposit

Trend plot by northing – $\text{Al}_2\text{O}_3$ M deposit
Trend plot by Easting – Al₂O₃ M deposit

Trend plot by bench – P M deposit
Trend plot by northing – P M deposit

Trend plot by Easting – P M deposit
Trend plot by bench – S M deposit

Trend plot by northing – S M deposit
Trend plot by Easting – S M deposit

Trend plot by bench – LOI M deposit
Trend plot by northing – LOI M deposit

Trend plot by Easting – LOI M deposit
Appendix 4: Gaussian Anamorphosis Histograms
A Deposit Fe Gaussian

A Deposit SiO2 Gaussian
A Deposit P Gaussian

A Deposit Al2O3 Gaussian
A Deposit S Gaussian

A Deposit LOI Gaussian
 Histogram (Z2FEG)

- Variable #1: Z2FEG
- Data/Groups(ZONE1 (ZONE=2))
- Nb. samples: 948
- Minimum: -3.1400
- Maximum: 3.1400
- Mean: 0.0000
- Std. Dev.: 0.9978
- Coef of Var.: -130.735

M Deposit Fe Gaussian

 Histogram (Z2SIG)

- Variable #1: Z2SIG
- Data/Groups(ZONE1 (ZONE=2))
- Nb. samples: 948
- Minimum: -3.1400
- Maximum: 3.1400
- Mean: 0.0007
- Std. Dev.: 0.9980
- Coef of Var.: 1400.815

M Deposit SiO2 Gaussian
M Deposit Al2O3 Gaussian

M Deposit P Gaussian
Histogram (Z2SG)

M Deposit S Gaussian

Histogram (Z2LOG)

M Deposit LOI Gaussian
Appendix 5: Variogram Models
A deposit Gaussian Fe Variogram models

Global Window - Model: M7FEVAR

Variable 1: M7FEVAR
Variogram: in 3 direction(s)

D1: U
Angular tolerance = 20.00
Lag = 33.0000m, Count = 10 lags, Tolerance = 50.00%
Horizontal Slicing = 50.0000m
Vertical Slicing = 50.0000m

D2: V
Angular tolerance = 20.00
Lag = 30.0000m, Count = 10 lags, Tolerance = 50.00%
Horizontal Slicing = 50.0000m
Vertical Slicing = 50.0000m

D3: W
Angular tolerance = 50.00
Lag = 1.0000m, Count = 20 lags, Tolerance = 50.00%

Model: 3 basic structure(s)
Global rotation = Azimuth=NS.00 Dip=10.00 Pitch=90.00 (Geologist Plane)
S1 - Nugget effect, Sill = 0.3
S2 - Spherical - Range = 3.8000m, Sill = 0.576
Directional Scales = ( 50.0000m, 35.0000m, 3.8000m)
S3 - Spherical - Range = 6.5000m, Sill = 0.2213
Directional Scales = ( 100.0000m, 85.0000m, 6.5000m)
**A deposit Backtransformed Fe variogram models**

**Global Window - Model: M7FEBACK**

- Variable M1: FE
- Variogram: in 3 direction(s)

**D1**: N95
- Lag = 11.0000m, Count = 15 lags

**D2**: N5
- Lag = 5.0000m, Count = 15 lags

**D3**: N95
- Lag = 0.5000m, Count = 15 lags

**Model**: 3 basic structure(s)
- **Global rotation**: Azimuth=55.00° Dip=0.00° Pitch=50.00° (Geologist Plane)
- **S1 - Spherical**: Range = 3.8000m, Sill = 96.32
- **Directional Scales**: (50.0000m, 35.0000m, 3.8000m)
- **S2 - Spherical**: Range = 6.5000m, Sill = 35.82
- **Directional Scales**: (120.0000m, 65.0000m, 6.5000m)
A deposit Gaussian SiO₂
**A deposit Backtransformed SiO2**

<table>
<thead>
<tr>
<th>Model: M7SIBACK</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>

**Veriogram:**

- **Variable**: SiO2
- **Direction(s)**: N95
- **Lag**: 11.0000m, Count = 15 lags
- **Lag**: 6.0000m, Count = 15 lags
- **Lag**: 0.5000m, Count = 15 lags

**Geologist Plane**

- **Azimuth**: N5.00  **Dip**: 10.00  **Pitch**: 90.00

**Model Structure**

- **Spherical**: Range = 3.8000m, **Sill** = 149.1
- **Directional Scales** = ( 50.0000m, 40.0000m, 3.8000m)
- **Spherical**: Range = 6.8000m, **Sill** = 46.17
- **Directional Scales** = ( 140.0000m, 70.0000m, 6.5000m)
Global Window - Model: M7PGVAR

A deposit Gaussian P
A deposit Backtransformed P

Global Window - Model: M7PGBACK

- Variable: P
- Anisotropy:
  - D1: N95
    - Lag = 12.0000m, Count = 15 lags
  - D2: N5
    - Lag = 12.0000m, Count = 15 lags
  - D3: N95
    - Lag = 1.0000m, Count = 15 lags

Data/CHMP (MINOR 1 MINOR-7)
- Variable: P
- Anisotropy:
  - D1: N95
    - Lag = 12.0000m, Count = 15 lags
  - D2: N5
    - Lag = 12.0000m, Count = 15 lags
  - D3: N95
    - Lag = 1.0000m, Count = 15 lags

Test

Report No: R131.2014 104
Global Window - Model: M7ALGVAR

Global rotation - Azimuth=05.00 Dip=10.00 Pitch=90.00 (Geologist Plane)

A deposit Gaussian Al2O3
A deposit Backtransformed Al2O3
A deposit Gaussian S
A deposit Backtransformed S
A deposit Gaussian LOI
A deposit Backtransformed LOI
Global Window - Model: Z2FEGVAR

<table>
<thead>
<tr>
<th>Isatis</th>
<th>DATA/G4CHP(ZONE=1))</th>
<th>gloww</th>
<th>November 26, 2013 11:54:33</th>
</tr>
</thead>
<tbody>
<tr>
<td>DI : N90</td>
<td>Angular tolerance = 9.00</td>
<td>Lag = 33.0000m, Count = 10 lags, Tolerance = 50.00%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Horizontal slicing = 50.0000m</td>
<td>Vertical slicing = 50.0000m</td>
<td></td>
</tr>
<tr>
<td>D2 : N179</td>
<td>Angular tolerance = 9.00</td>
<td>Lag = 26.0000m, Count = 10 lags, Tolerance = 50.00%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Horizontal slicing = 50.0000m</td>
<td>Vertical slicing = 50.0000m</td>
<td></td>
</tr>
<tr>
<td>D3 : N24</td>
<td>Angular tolerance = 9.00</td>
<td>Lag = 1.0000m, Count = 25 lags, Tolerance = 50.00%</td>
<td></td>
</tr>
<tr>
<td>Model : 3 basic structure(s)</td>
<td>Global rotation = Azimuth=399.99, Dip=10.96, Pitch=-155.62 (Geologist Plan)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1 - Nugget effect, Sill = 0.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2 - Spherical - Range = 1.0000m, Sill = 0.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3 - Spherical - Range = 4.0000m, Sill = 0.20Y2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directional Scales = (75.0000m, 140.0000m, 1.0000m)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directional Scales = (220.0000m, 140.0000m, 4.0000m)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

M deposit Gaussian Fe
Isatis
DATA/DIST/END(DIST=DIST=1)
- Variable #1 : FE
glouw
- Variogram : in 3 direction(s)
Nov 26 2013 13:34:51
test
D1 : N90
  Lag = 18.0000m, Count = 15 lags
D2 : N59
  Lag = 12.0000m, Count = 15 lags
D3 : N359
  Lag = 0.3000m, Count = 15 lags
Model : 3 basic structure(s)
Global rotation - Azimuth=329.399 Dip=10.96 Pitch=155.62 (Geologist Plane)
S1 - Nugget effect. S11 = 43.32
S2 - Spherical - Range = 1.0000m, S11 = 52.13
  Directional Scales = ( 25.0000m, 140.0000m, 1.0000m)
S3 - Spherical - Range = 4.0000m, S11 = 24.08
  Directional Scales = ( 220.0000m, 150.0000m, 4.0000m)

M deposit Backtransformed fe
Ferrowest Limited
Yalyirimbir Iron Project

Global Window - Model: Z2SIGVAR

Isatis

Variable: M deposit Gaussian SiO2

M deposit Gaussian SiO2
Global Window - Model: Z2SIBACK

<table>
<thead>
<tr>
<th>Distance (m)</th>
<th>Variogram: SiO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>250</td>
<td>250</td>
</tr>
</tbody>
</table>

Varigrams

<table>
<thead>
<tr>
<th>Direction</th>
<th>Lag</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>N90</td>
<td>15.000m</td>
<td>15 lags</td>
</tr>
<tr>
<td>N359</td>
<td>12.0000m</td>
<td>15 lags</td>
</tr>
<tr>
<td>N24</td>
<td>0.5000m</td>
<td>15 lags</td>
</tr>
</tbody>
</table>

Model: 3 basic structure(s)

<table>
<thead>
<tr>
<th>Model</th>
<th>Global rotation: Azimuth=293.99 Dip=10.96 Pitch=15.62 (Geologist Plane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Nugget effect, Sill = 89.13</td>
</tr>
<tr>
<td>S2</td>
<td>Spherical - Range = 1.0000m, Sill = 99.98</td>
</tr>
<tr>
<td>S3</td>
<td>Spherical - Range = 6.0000m, Sill = 61.4</td>
</tr>
</tbody>
</table>

Directional Scales = (80.0000m, 140.0000m, 1.0000m)

M deposit Backtransformed SiO2

Report No: R131.2014
Global Window - Model: Z2PGVAR

Isatis
data/CH05P{DONB|DONE=-2})
  Variable: M1 = 21_RG
  Variogram: in 3 direction(s)
  D1 : R90
    Angular tolerance = 15.00
    Lag = 55.0000m, Count = 10 lags, Tolerance = 50.00%
    Horizontal Slicing = 50.0000m
    Vertical Slicing = 50.0000m
  D1 : R179
  Angular tolerance = 24.00
  Lag = 51.0000m, Count = 10 lags, Tolerance = 50.00%
  Horizontal Slicing = 50.0000m
  Vertical Slicing = 50.0000m
  D3 : N24
  Angular tolerance = 90.00
  Lag = 1.0000m, Count = 25 lags, Tolerance = 50.00%
  Model: 3 basic structure(s)
  S1 - Nugget effect, S111 = 0.21
  S2 - Spherical - Range = 18.0000m, S111 = 0.4
  Directional Scales = (120.0000m, 50.0000m, 18.0000m)
  S3 - Spherical - Range = 20.0000m, S111 = 0.397
  Directional Scales = (270.0000m, 95.0000m, 20.0000m)

M deposit Gaussian P
Ferrowest Limited
Yalyirimbi Iron Project

Global Window - Model: Z2PBACK

Isatis
DATA/0/4/0D/D/0
- Variable #1 : P
  Variogram : in 3 direction(s)
  Lag = 10.0000m, Count = 15 lags
  Lag = 7.0000m, Count = 15 lags
  Lag = 1.5000m, Count = 15 lags
Model : 3 basic structure(s)
Global rotation = Azimuth=NNW39.99 Dip=10.96 Pitch=55.62 (Geologist Plane)
S1 - Nugget effect, Sill = 0.0001904
S2 - Spherical - Range = 18.0800m, Sill = 0.0002746
  Directional Scales = ( 120.0000m, 40.0000m, 18.0000m)
S3 - Spherical - Range = 20.0000m, Sill = 0.0001911
  Directional Scales = ( 270.0000m, 95.0000m, 20.0000m)

M deposit Backtransformed P
Global Window - Model: Z2ALGVAR

Distance (m)

0 100 200 300 400 500

Gaussian Al2O3

Isatis

- Variable: X1: Z2ALG
- Variogram: in 3 direction(s)

D1: R90
  Angular tolerance = 14.00
  Lag = 45.0000m, Count = 10 lags, Tolerance = 50.00%
  Horizontal Slicing = 0.00000m
  Vertical Slicing = 50.00000m

D1: N179
  Angular tolerance = 25.00
  Lag = 45.0000m, Count = 10 lags, Tolerance = 50.00%
  Horizontal Slicing = 50.00000m
  Vertical Slicing = 50.00000m

D3: N24
  Angular tolerance = 90.00
  Lag = 1.00000m, Count = 25 lags, Tolerance = 50.00%

Model: 3 basic structure(s)

Global rotation: Azimuth: N293.99, Dip: 10.96, Pitch: 155.82 (Geologist Plane)
S1 - Nugget effect, S111 = 0.21
S2 - Spherical - Range = 11.0000m, S111 = 0.4
Directional Scales = (100.0000m, 50.0000m, 11.0000m)
S3 - Spherical - Range = 13.0000m, S111 = 0.3072
Directional Scales = (200.0000m, 140.0000m, 13.0000m)

M deposit Gaussian Al2O3
Ferrowest Limited
Yalyirimbi Iron Project

Global Window - Model: Z2ALBACK

Isatis
DATA/MCNP(D3NN(JCH=241))
- Variable #1 : AI2O3
Variogram : in 3 direction(s)

D1 : N90
  Lag = 16.0000m, Count = 15 lags
D2 : N159
  Lag = 11.0000m, Count = 15 lags
D3 : N24
  Lag = 1.0000m, Count = 15 lags
Model : 3 basic structure(s)
Global rotation : Azimuth=293.99 Dip=10.96 Pitch=55.62 (Geologist Plane)
S1 - Nugget effect, SILL = 2.805
S2 - Spherical : Range = 11.0000m, SILL = 4.42
  Directional Scales = ( 200.0000m, 50.0000m, 11.0000m)
S3 - Spherical : Range = 12.0000m, SILL = 3.120
  Directional Scales = ( 200.0000m, 140.0000m, 13.0000m)

M deposit Backtransformed AI2O3
Global Window - Model: Z2SGVAR

Isatis

data (C:\Users\DOS\var\done=2)
- Variable: h1: Z2SG

Variogram: in 3 direction(s)

D1: R90
  Angular tolerance = 25.00
  Lag = 50.0000m, Count = 10 lags, Tolerance = 50.00%
  Horizontal slicing = 50.0000m
  Vertical slicing = 50.0000m

D2: 90
  Angular tolerance = 20.00
  Lag = 30.0000m, Count = 10 lags, Tolerance = 50.00%
  Horizontal slicing = 50.0000m
  Vertical slicing = 50.0000m

D3: N24
  Angular tolerance = 90.00
  Lag = 1.0000m, Count = 25 lags, Tolerance = 50.00%

Model: 3 basic structure(s)

Global rotation: Azimuth = N293.99 Dip = 10.98 Pitch = 155.82 (Geologist Plane)

s1: Nugget effect, s11 = 0.3
s2: Spherical - Range = 11.0000m, s11 = 0.45
  Directional scales = (75.0000m, 50.0000m, 11.0000m)

s3: Spherical - Range = 20.0000m, s11 = 0.2471
  Directional scales = (275.0000m, 150.0000m, 20.0000m)

M deposit Gaussian S
Global Window - Model: Z2SBACK

Isatis

DATA/MONK (MONK [TONE=2])
- Variable #1 : $M$
- Variogram : in 3 direction(s)

D1 : 90
  Lag = 32.0000m, Count = 15 lags

D2 : 359
  Lag = 12.0000m, Count = 15 lags

D3 : 24
  Lag = 1.6000m, Count = 15 lags

Model : 3 basic structure(s)
Global rotation : Azimuth=239.99 Dip=10.96 Pitch=15.62 (Geologist Plane)
S1 - Nugget effect, sill = 0.1968
S2 - Spherical - Range = 11.0000m, sill = 0.06425
  Directional Scales = ( 75.0000m, 90.0000m, 11.0000m)
S3 - Spherical - Range = 20.0000m, sill = 0.00320
  Directional Scales = ( 275.0000m, 150.0000m, 20.0000m)

M deposit Backtransformed $S$
Global Window - Model: Z2LOGVAR

- Variable ID: Z2LOG

Variogram: in 3 direction(s)  Nov 26 2013 12:41:33

D1 : N90
  Angular tolerance = 25.00
  Lag = 45.0000m, Count = 10 lags, Tolerance = 50.00%
  Horizontal Slicing = 50.0000m
  Vertical Slicing = 50.0000m

D2 : N30
  Angular tolerance = 15.00
  Lag = 45.0000m, Count = 10 lags, Tolerance = 50.00%
  Horizontal Slicing = 50.0000m
  Vertical Slicing = 50.0000m

D3 : N179
  Angular tolerance = 90.00
  Lag = 1.0000m, Count = 25 lags, Tolerance = 50.00%
  Model: 3 basic structure(s)
  Global rotation - Azimuth=023.99 Dip=10.98 Pitch=155.62 (Geologist Plane)
  S1 - Nugget effect, sill = 0.2
  S2 - Spherical - Range = 12.0000m, sill = 0.43
  Directional Scales = ( 5.0000m, 50.0000m, 13.0000m)
  S3 - Spherical - Range = 15.0000m, sill = 0.3671
  Directional Scales = ( 175.0000m, 150.0000m, 15.0000m)

M deposit Gaussian LOI
Global Window – Model: Z2LOBACK

Isatis
DATA/FCPVF(DHNN(DONE=2))
- Variable #1 : q
  Variogram: in 3 direction(s)
  D1 : N90
    Lag = 14.0000m, Count = 15 lags
  D2 : N359
    Lag = 12.0000m, Count = 15 lags
  D3 : N24
    Lag = 1.0000m, Count = 15 lags
Model: 3 basic structure(s)
Global rotation - Azimuth=239.99 Dip=-10.96 Pitch=15.62 (Geologist Plane)
D1 - Nugget effect, sill = 0.0012
D2 - Spherical - Range = 12.0000m, sill = 0.0012
  Directional Scales = ( 10.0000m, 15.0000m)
D3 - Spherical - Range = 1.0000m, sill = 0.0011
  Directional Scales = ( 175.0000m, 250.0000m, 15.0000m)

M deposit Backtransformed LOI