



ASX / MEDIA ANNOUNCEMENT

24/10/2022

## POSITIVE HYDROMETALLURGICAL TESTWORK, BATTERY GRADE MANGANESE SULPHATE SCOPING STUDY UNDERWAY

### Highlights

- Hydrometallurgical testwork program ongoing, with initial leaching testwork delivering very positive results of up to 97% Mn extraction in 4 hours
- Following excellent results of the hydrometallurgical program, Firebird has immediately commenced work on a battery grade High Purity Manganese Sulphate Scoping Study
- Commencement of impurity precipitation testwork, a key stage of the Scoping Study
- Importance of Manganese within battery cathodes (both NMC and LFP chemistries) continues to grow

Firebird Metals Limited (ASX: FRB, “Firebird” or “the Company”) is pleased to provide a development update on its flagship Oakover Manganese Project (“Oakover”).

Commenting on the impressive testwork results and development progress being made at Oakover, Firebird Managing Director Peter Allen said *“Successful completion of initial leaching testwork and the positive results generated provides Firebird with a very strong base to springboard into further testwork and complete a Scoping Study on battery grade High Purity Manganese Sulphate. Importantly, we are investigating and progressing exciting processing options which are focused on utilising the entire Oakover resource.*

*“We are excited to commence work on the battery grade High Purity Manganese Sulphate Scoping Study. The development of this process is a very important pillar of the Firebird strategy and one that if successfully completed and placed into operation, will deliver significant, long-term shareholder value.*

### Hydrometallurgical Test Program Completed

Firebird has completed successful leaching testwork on each ore domain from Oakover, which is the first stage of testwork required for developing and producing High Purity Manganese Sulphate Monohydrate (HPMSM) for the Battery Industry.

Multiple scouting leaching tests were completed on Oakover Mn feed, which had been crushed, screened and scrubbed, but not beneficiated further (ore sorted/DMS).

Testwork feed was generated from diamond drill core from all manganese ore domains at Sixty Sixer, Jay-Eye and Karen deposits.

This round of testwork proved very effective and delivered excellent Mn extraction results and importantly, provides to the Company with ideal stoichiometric ratios for next stage precipitation reactions and impurity removal, with a view to ultimately produce HPMSM crystals.

Key results from the program include:

- Ore amenable to reductive acidic leaching
- 93-97% Mn extraction in 4 hours
- Heat generated by the reaction
- Mn concentrations of 70-140 g/l in Pregnant Leach Solution



*Figure 1: Leach Test (left) and testwork setup (right)*

### **High-Purity Manganese Sulphate Scoping Study Underway**

Following positive results from the initial stage of the hydrometallurgical testwork program, Firebird has immediately commenced a HPMSM Scoping Study.

Key focus areas of the Scoping Study comprise of:

- Further leaching test work
- Conducting impurity precipitation and removal test work
- Conducting HPMSM crystallization testwork on purified liquors
- Confirming hydrometallurgical flowsheet concept using testwork and simulation
- Conducting preliminary cost studies, targeting most economic process for production of HPMSM
- Combining key development aspects from the Manganese Concentrate Scoping Study
- Marketing study on the industry demand/supply and pricing

Firebird will now move to the next phase of testing which is impurity removal. This is a critical step in the processing phase, with successful completion required to meet strict specifications for production of battery grade high purity manganese sulphate.

Firebird expects the timeframe for completion of the Scoping Study to be within the next 12 months.

### **Growing Importance of Manganese in Lithium-Ion Batteries**

The primary market and major consumer of manganese remains the steelmaking sector, which continues to display robust, long-term demand fundamentals for manganese ores and concentrates. There is no substitute for manganese in steel.

Importantly, demand for manganese from the lithium-ion battery sector for use in electric vehicles continues to grow exponentially, forming another major market for supply and consumption. It is estimated around 90kg of Manganese is used per electric vehicle (CPM Group). Manganese is an important chemical compound within the battery cathode and plays a critical role in NMC (Nickel, Manganese, Cobalt) batteries.

Recent new developments led by Chinese battery giant Contemporary Amperex Technology Co., Limited (CATL) has seen manganese being introduced into Lithium Iron Phosphate Batteries (LFP), with the new battery known as Lithium Manganese Iron Phosphate (LMFP). LFP batteries are used in both electrical vehicles and within the broader energy storage sector.

Electric vehicle and battery cathode manufacturers have announced a desire to increase manganese content to improve battery and electric vehicle cost competitiveness while maintaining energy density. The growing electrical vehicle market and battery cathode changes will lead to greater demand and growth for High Purity Manganese sulphate.

ENDS-

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## About Firebird Metals Limited

Firebird Metals Limited (ASX:FRB) is a West Australian company focused on the exploration and development of its 100% owned project portfolio, comprising of four highly prospective manganese projects in the renowned East Pilbara Manganese province of Western Australia:

- Oakover Manganese Project
- Hill 616 Manganese Project
- Disraeli Manganese Project
- Raggard Hills Manganese Project

The Company's primary focus is on the development of the Oakover and Hill 616 Manganese Projects, which are located approximately 85 km east and southeast of Newman and together cover approximately 375 km<sup>2</sup>. These two projects give the company a significant total Mineral Resource Estimate of 229.7 million tonnes:

- Oakover Project - 172.2 Mt @ 9.9% Mn
  - 58.7 Mt @ 10.4 % Mn Indicated Mineral Resource Estimate
  - 113.6 Mt at 9.6 % Mn Inferred Mineral Resource Estimate
- Hill 616 Project - 57.5 Mt @ 12.2% Mn Inferred Mineral Resource Estimate

The total Mineral Resources Estimate of 229.7 million tonnes provides a solid technical foundation for further development as the company targets production of manganese for two key markets:

- a) manganese sulphate for use in the growing lithium ion battery market that is used in electric vehicles, where manganese is a critical battery raw material; and
- b) manganese ore/concentrates for consumption in the global steel industries, where manganese plays an important and un-substitutable role in the strength and hardness of steel

Firebird is focused on creating and growing sustainable value for our stakeholders through the application of best practices in exploration and our commitment to protecting the health and wellbeing of our employees, the environment and the communities where we work.

## Oakover Mineral Resource Estimate - March 2022

Area	Mineral Resource classification	Tonnes (Mt)	Mn (%)	Fe (%)	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	P (%)	LOI (%)
Sixty Sixer	Indicated	58.7	10.4	9.2	40.2	10.1	0.10	13.2
Sixty Sixer	Inferred	50.7	9.6	8.5	38.9	9.9	0.11	15.0
<b>Sixty Sixer</b>	<b>Sub-Total</b>	<b>109.4</b>	<b>10.1</b>	<b>8.9</b>	<b>39.6</b>	<b>10.0</b>	<b>0.11</b>	<b>14.1</b>
Jay Eye	Inferred	22.0	9.5	8.5	40.0	9.8	0.11	14.2
<b>Jay Eye</b>	<b>Sub-Total</b>	<b>22.0</b>	<b>9.5</b>	<b>8.5</b>	<b>40.0</b>	<b>9.8</b>	<b>0.11</b>	<b>14.2</b>
Karen	Inferred	40.9	<b>9.5</b>	<b>9.3</b>	<b>42.7</b>	<b>10.5</b>	<b>0.11</b>	<b>12.0</b>
<b>Karen</b>	<b>Sub-Total</b>	<b>40.9</b>	<b>9.5</b>	<b>9.3</b>	<b>42.7</b>	<b>10.5</b>	<b>0.11</b>	<b>12.0</b>
Oakover	Indicated	58.7	10.4	9.2	40.2	10.1	0.10	13.2
Oakover	Inferred	113.6	9.6	8.8	40.4	10.1	0.11	13.8
<b>Oakover</b>	<b>Grand Total</b>	<b>172.3</b>	<b>9.9</b>	<b>8.9</b>	<b>40.4</b>	<b>10.1</b>	<b>0.11</b>	<b>13.6</b>

### Notes:

- Mineral Resources reported at a cut-off grade of 7% Mn.
- P<sub>2</sub>O<sub>5</sub> converted to P% using a factor of 0.4364 calculated from atomic mass and molecular weight.
- Due to the effects of rounding, the total may not represent the sum of all components.

Refer ASX release; “Game Changing Resource Upgrade at Oakover” dated 10/3/2022.

### Competent Persons Statement

The information in this report that relates to the Oakover Mineral Resources is based on information compiled by Mr Mark Pudovskis and Mr Aaron Meakin. Mr Mark Pudovskis is a full-time employee of CSA Global Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Aaron Meakin is a full-time employee of CSA Global Pty Ltd and is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Mark Pudovskis and Mr Aaron Meakin have sufficient experience 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 2012 edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr Mark Pudovskis and Mr Aaron Meakin consent to the disclosure of the information in this report in the form and context in which it appears. Mr Mark Pudovskis assumes responsibility for matters related to Sections 1 and 2 of JORC Table 1, while Mr Aaron Meakin assumes responsibility for matters related to Section 3 of JORC Table 1.



# JORC Code, 2012 Edition Table 1 – Oakover Manganese Project

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary																								
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Ten diamond core holes were drilled by Topdrive Drillers Australia on the Oakover project in June 2011.</li> <li>Nine diamond core holes (OKDM0012-OKDM010) were logged by CSA Global in June 2021, and sampled and assayed by Nagrom Metallurgical in August 2021.</li> <li>Samples were dried, crushed, ring pulverised and analysed by X-Ray Fluorescence Spectrometry (XRF). The elements determined by XRF were</li> <li>Mn, Fe, Al<sub>2</sub>O<sub>3</sub>, CaO, Cr<sub>2</sub>O<sub>3</sub>, P<sub>2</sub>O<sub>5</sub>, SiO<sub>2</sub>, Ba, K<sub>2</sub>O, MgO, Na<sub>2</sub>O, S, TiO<sub>2</sub>, LOI1000.</li> <li>Prepared sample was fused in lithium borate flux with lithium nitrate additive. The resultant glass bead was analysed by XRF. Loss on Ignition (LOI) is packaged with XRF suites to achieve close to 100% characterisation.</li> <li>The Competent Person (CP) considers that the sample techniques adopted were appropriate for the style of mineralisation and for reporting of an Exploration Result.</li> </ul>																								
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Drilling was completed by PQ3 diamond coring methods in 2011. The core was not orientated. Given the relatively shallow nature of the deposit and the supergene overprinting, orientation is not material.</li> </ul>																								
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>The core recoveries from the 2021 CSA Global relogging are summarised below.</li> </ul>																								
		<table border="1"> <thead> <tr> <th>Drill Hole</th> <th>Prospect</th> <th>Hole length</th> <th>Core Recovery % (average 1.5m core runs)</th> </tr> </thead> <tbody> <tr> <td>OKDM001</td> <td>66</td> <td>49.8</td> <td>-</td> </tr> <tr> <td>OKDM002</td> <td>66</td> <td>45.3</td> <td>94.1</td> </tr> <tr> <td>OKDM003</td> <td>66</td> <td>36.3</td> <td>79.6</td> </tr> <tr> <td>OKDM004</td> <td>66</td> <td>34.8</td> <td>73.8</td> </tr> <tr> <td>OKDM005</td> <td>66</td> <td>34.8</td> <td>90.2</td> </tr> </tbody> </table>	Drill Hole	Prospect	Hole length	Core Recovery % (average 1.5m core runs)	OKDM001	66	49.8	-	OKDM002	66	45.3	94.1	OKDM003	66	36.3	79.6	OKDM004	66	34.8	73.8	OKDM005	66	34.8	90.2
Drill Hole	Prospect	Hole length	Core Recovery % (average 1.5m core runs)																							
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OKDD010	Jay Eye	28.8	93.8																		
<p><b>Logging</b></p> <ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>The core was originally logged in 2011 by Brumby Resources then geologically and geotechnically logged by CSA Global consultants in 2021 to a level of detail sufficient to establish appropriate domaining for planned metallurgical test work.</li> <li>With the exception of drill hole OKDM001, all drill holes (OKDM002 to OKDM010) were logged from surface to end of hole. Drill depths are summarised in the Table under 'Drill hole Information'.</li> </ul>																				
<p><b>Sub-sampling techniques and sample preparation</b></p> <ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Sample preparation was as follows: <ul style="list-style-type: none"> <li>Receive, sort, log, and batch samples</li> <li>Two longitudinal core cuts (halved and quartered)</li> <li>Coarse Crushing of one quarter to a nominal topsize of 6.3mm</li> <li>Rifle split all samples</li> <li>Pulverise to 80% passing 75µm</li> </ul> </li> <li>Sampling intervals were based on the CSA Global diamond core logging and sampling report of June 2021</li> <li>The CP considers that the sub sampling techniques adopted were appropriate for the style of mineralisation.</li> </ul>																				
<p><b>Quality of assay data and laboratory tests</b></p> <ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>XRF Analysis <ul style="list-style-type: none"> <li>Mn, Fe, Al<sub>2</sub>O<sub>3</sub>, CaO, Cr<sub>2</sub>O<sub>3</sub>, P<sub>2</sub>O<sub>5</sub>, SiO<sub>2</sub>, Ba, K<sub>2</sub>O, MgO, Na<sub>2</sub>O, S, TiO<sub>2</sub>, LOI1000</li> </ul> </li> <li>Prepared sample was fused in lithium borate flux with lithium nitrate additive.</li> <li>The resultant glass bead was analysed by XRF. XRF is suitable for the total analysis of a range of geological ores. XRF Suites are tailored to specific ore types, using predefined inter-element and matrix corrections.</li> <li>Loss on Ignition (LOI) is packaged with XRF suites to achieve close to 100% characterisation.</li> </ul>																				
<p><b>Verification of sampling</b></p> <ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> </ul>	<ul style="list-style-type: none"> <li>All sampling intersections were determined by CSA Global, an independent consulting company.</li> </ul>																				

Criteria	JORC Code explanation	Commentary
<b>and assaying</b>	<ul style="list-style-type: none"> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Drill locations were located by handheld GPS. Expected accuracy is +/- 5m for northing and easting.</li> <li>GDA94 Zone 51 datum is used as the coordinate system.</li> <li>There is no record of topographic control although the terrain is flat</li> <li>The CP considers that the survey techniques adopted were appropriate for the style of mineralisation and for reporting of an Exploration Result.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Seven diamond core holes were drilled on the Oakover prospect (OKDM001/2/3/4/5/9/10) of approximately 2km in strike. Three further holes were drilled to south on the Karen prospect (OKDM006/7/8)</li> <li>The CP considers the data spacing is sufficient when consolidated with the current RCP programme to establish a degree of grade continuity for the project.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>Diamond core hole sample spacing, and orientation is considered suitable for regional geochemical exploration to define manganese targets.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Nagrom Metallurgical were contracted to both sample and assay the preserved core providing a continuous chain of possession sufficient for sample security</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>There is no record of any audits or reviews having been undertaken on the sampling data.</li> </ul>

## Section 2 Reporting of Exploration Results – Oakover Manganese Project

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The Oakover Manganese project consists of one exploration licence (E52/3577-1) in the East Pilbara region of Western Australia.</li> <li>The licence is by Firebird Metals Limited.</li> <li>The licence covers 54 blocks, was applied for on 13 September 2017, granted on 11 March 2019 with an expiry date of 10 March 2024</li> </ul>



**Exploration done by other parties**

- Acknowledgment and appraisal of exploration by other parties.

- Brumby Resources completed RCP drilling, mapping and a Mineral Resource estimate in August 2012 by H & S Consultants Pty Ltd (H&SC) who estimated an Inferred Mineral Resource (using an 8% Mn cut-off) of 64.1 Mt grading 11.5% Mn, 10.1% Fe, 10.5% Al<sub>2</sub>O<sub>3</sub> and 41.3% SiO<sub>2</sub>.

- The diamond core PQ3 (triple tube) drilling programme, relevant to this release was completed in 2011 and was designed to collect representative samples across the Mineral Resource for metallurgical test work

**Geology**

- Deposit type, geological setting and style of mineralisation.

- The manganese mineralisation is stratiform and hosted by dolomitic-rich Balfour Downs shale beds. The mineralisation is tabular in form, dips gently at approximately 10° to the northwest and outcrops at the surface at the southern edge of the deposit. Supergene enrichment of the manganese stratigraphy within the top 5-10m has resulted in massive manganese outcrops at the surface

**Drill hole Information**

- A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:

- easting and northing of the drill hole collar
- elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar
- dip and azimuth of the hole
- down hole length and interception depth
- hole length.
- If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.

Drill Hole	Prospect	Easting	Northing	RL	Hole length
OKDM001	66	261308	7419826	529	49.8
OKDM002	66	261295	7419895	522	45.3
OKDM003	66	261277	7419984	518	36.3
OKDM004	66	261225	7419824	520	34.8
OKDM005	66	261554	7420051	516	34.8
OKDM006	Karen	260747	7415499	536	34
OKDM007	Karen	260763	7415552	535	27.3
OKDM008	Karen	260890	7415570	535	21.3
OKDM009	Jay Eye	262788	7420675	517	25
OKDD010	Jay Eye	262810	7420647	517	28.8

**Data aggregation methods**

- In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.

- Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.

- The assumptions used for any reporting of metal equivalent values should be clearly stated.

- No maximum cut-off value was used.
- A simple arithmetic average of intervals above and below the 10% cut-off was used to interpret the results
- Please refer to appendix 1 for table of all results

Criteria	JORC Code explanation	Commentary
<p><b>Relationship between mineralisation widths and intercept lengths</b></p>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>The relationship between mineralisation and intercepts lengths is still to be determined.</li> <li>Down hole intercept lengths only are reported, however the mineralisation is relatively shallow dipping and drill intercepts, although not true thicknesses, will not be too materially different from those thicknesses reported.</li> </ul>
<p><b>Diagrams</b></p>	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to figures within the body of the release.</li> </ul>
<p><b>Balanced reporting</b></p>	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>A full summary of all diamond core drill results is included as Appendix 1.</li> </ul>
<p><b>Other substantive exploration data</b></p>	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>The bulk samples extracted from PQ drill core underwent feed preparation at Nagrom Laboratories in Perth which comprised: <ul style="list-style-type: none"> <li>Stage crushing and screening of the composite samples to 100% passing 50mm</li> <li>Scrubbing in a tumbling mill scrubber</li> <li>Wet screening the scrubbed product at 8mm and 1mm</li> <li>Re-crushing and screening (at 32mm) the +8mm -50mm component to produce the +8mm -32mm ore sorter feed</li> </ul> </li> <li>Heavy liquid separation batch test work on the +1mm – 8mm component was carried out by Nagrom at various specific gravity settings to determine sinks and floats.</li> <li>Ore sorting test work on the +8mm -32mm ore sorter samples was carried out by Steinert in Perth using a full-size Steinert KSS ore sorter. The ore sorting tests for each composite sample comprised two stage sorting using multiple sensor scanners – The first pass to produce an ore sorter concentrate, followed by re-feeding of this concentrate at a higher sensitivity level to produce the final upgraded concentrate.</li> <li>Assay of all products was carried out by Nagrom using the assay procedure as detailed above (Section 1 – Sampling Techniques).</li> </ul>
<p><b>Further work</b></p>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>An Infill Reverse Circulation drilling programme over the Okover prospect is currently being undertaken.</li> <li>Further ore sorting and H-L-S test work is currently underway using larger bulk samples of shallow outcropping supergene mineralisation extracted from the Sixty-Sixer and Karen deposits.</li> </ul>

**Appendix 1: Summary of all Oakover PQ3 diamond core results**

Drill Hole #	Meterage From	Meterage To	Sample ID	Mass kg	% Mn	% Fe	% Al <sub>2</sub> O <sub>3</sub>	% SiO <sub>2</sub>	% P <sub>2</sub> O <sub>5</sub>	% S	% LOI <sub>1100</sub>
OKDM002	0.00	1.00	OKDM002 0-1	2.76	1.69	29.54	10.71	35.79	0.082	0.020	6.63
OKDM002	1.00	2.07	OKDM002 1-2.07	2.12	2.39	29.23	12.60	31.56	0.078	0.019	7.81
OKDM002	2.07	3.00	OKDM002 2.07-3	2.04	6.98	19.55	15.81	32.46	0.033	0.018	11.46
OKDM002	3.00	4.00	OKDM002 3-4	2.44	8.62	21.26	17.77	24.80	0.022	0.019	12.73
OKDM002	2.07	4.84	OKDM002 2.07-4.84	2.00	3.73	27.11	18.17	22.83	0.033	0.022	12.83
OKDM002	4.84	6.00	OKDM002 4.84-6	3.30	3.96	25.73	18.37	23.44	0.033	0.020	13.27
OKDM002	6.00	7.28	OKDM002 6-7.28	5.06	2.05	27.61	17.07	25.38	0.034	0.023	12.57
OKDM002	7.28	7.78	OKDM002 7.28-7.78	1.32	9.28	20.50	15.60	25.78	0.028	0.015	13.24
OKDM002	7.78	8.80	OKDM002 7.78-8.8	2.34	1.93	19.72	18.56	34.94	0.020	0.010	12.03
OKDM002	8.80	10.00	OKDM002 8.8-10	3.26	8.04	11.65	15.53	41.61	0.037	0.010	11.21
OKDM002	10.00	11.00	OKDM002 10-11	3.26	4.05	8.94	15.35	53.20	0.031	0.008	9.73
OKDM002	11.00	12.00	OKDM002 11-12	2.76	6.68	8.47	13.53	52.02	0.092	0.009	9.64
OKDM002	12.00	13.41	OKDM002 12-13.41	3.30	3.56	10.66	11.35	56.51	0.084	0.012	8.67
OKDM002	13.41	13.91	OKDM002 13.41-13.91	1.14	2.69	5.00	13.16	65.75	0.077	0.011	6.24
OKDM002	13.91	15.00	OKDM002 13.91-15	1.84	5.20	8.46	12.39	56.35	0.104	0.010	8.25
OKDM002	15.00	16.00	OKDM002 15-16	2.26	6.15	10.85	11.56	52.35	0.109	0.009	8.64
OKDM002	16.00	16.73	OKDM002 16-16.73	3.20	11.20	12.10	10.18	44.05	0.146	0.010	9.53
OKDM002	16.73	18.00	OKDM002 16.73-18	1.94	15.04	10.91	9.45	40.33	0.262	0.015	9.91
OKDM002	18.00	19.00	OKDM002 18-19	2.28	12.69	10.29	10.69	42.65	0.263	0.010	9.60
OKDM002	19.00	20.00	OKDM002 19-20	2.74	14.40	11.77	8.96	39.65	0.237	0.007	10.05
OKDM002	20.00	20.81	OKDM002 20-20.81	2.40	13.29	11.20	9.15	40.77	0.191	0.005	10.33
OKDM002	20.81	22.00	OKDM002 20.81-22	3.16	12.40	10.29	10.05	42.44	0.211	0.006	10.06
OKDM002	22.00	23.00	OKDM002 22-23	2.88	13.11	8.96	8.75	38.40	0.293	0.008	12.68
OKDM002	23.00	24.23	OKDM002 23-24.23	3.24	12.67	8.10	9.19	37.56	0.261	0.009	13.20
OKDM002	24.23	25.20	OKDM002 24.23-25.2	2.48	12.28	9.34	8.95	36.29	0.293	0.009	13.45
OKDM002	25.20	26.00	OKDM002 25-2-26	0.94	15.59	10.08	9.13	37.53	0.295	0.009	10.84
OKDM002	26.00	27.00	OKDM002 26-27	2.64	12.49	9.26	10.96	42.84	0.329	0.006	9.21
OKDM002	27.00	28.00	OKDM002 27-28	2.34	13.30	8.50	10.83	41.15	0.319	0.006	11.58
OKDM002	28.00	29.00	OKDM002 28-29	2.00	13.05	8.19	10.22	39.76	0.285	0.022	13.77
OKDM002	29.00	30.00	OKDM002 29-30	3.48	9.88	7.46	9.76	36.75	0.269	0.453	18.19
OKDM002	30.00	31.00	OKDM002 30-31	3.46	8.78	6.92	9.98	37.55	0.271	0.442	18.16
OKDM002	31.00	32.00	OKDM002 31-32	3.74	8.34	6.59	10.24	38.54	0.246	0.577	17.70
OKDM002	32.00	33.00	OKDM002 32-33	4.30	8.07	6.38	10.37	39.12	0.266	0.846	17.46
OKDM002	33.00	34.00	OKDM002 33-34	3.70	9.23	6.61	9.43	36.16	0.259	0.630	18.75
OKDM002	34.00	35.00	OKDM002 34-35	3.90	8.53	6.30	9.92	38.62	0.241	0.775	17.78
OKDM002	35.00	36.00	OKDM002 35-36	3.76	7.94	6.01	10.03	39.93	0.253	0.773	17.27



OKDM002	36.00	37.00	OKDM002 36-37	3.92	6.20	6.19	11.68	44.66	0.242	0.547	14.91
OKDM002	37.00	38.00	OKDM002 37-38	4.06	7.87	6.15	9.73	41.42	0.251	0.700	16.87
OKDM002	38.00	39.00	OKDM002 38-39	3.08	7.75	5.81	10.24	41.09	0.221	1.077	17.01
OKDM002	39.00	40.00	OKDM002 39-40	3.18	7.25	6.45	10.43	40.17	0.257	0.926	16.83
OKDM002	40.00	41.00	OKDM002 40-41	3.14	7.09	5.96	10.66	41.65	0.245	1.088	15.85
OKDM002	41.00	42.00	OKDM002 41-42	3.36	7.53	6.05	10.51	40.70	0.241	1.036	16.75
OKDM002	42.00	43.00	OKDM002 42-43	3.74	7.13	6.40	10.83	41.44	0.249	1.040	16.29
OKDM002	43.00	44.00	OKDM002 43-44	3.86	6.27	6.29	11.37	43.47	0.254	1.065	14.91
OKDM002	44.00	45.30	OKDM002 44-45.3	4.46	5.69	6.13	11.71	45.15	0.269	1.291	14.31
OKDM003	0.00	1.00	OKDM003 0-1	1.37	0.16	27.49	15.63	32.48	0.061	0.031	10.12
OKDM003	2.20	3.00	OKDM003 2.2-3	2.34	0.05	20.23	24.14	31.45	0.049	0.041	12.41
OKDM003	3.00	4.00	OKDM003 3-4	1.32	0.10	19.87	23.77	32.33	0.056	0.031	11.80
OKDM003	4.00	5.00	OKDM003 4-5	1.13	0.03	11.02	27.76	39.44	0.044	0.013	12.68
OKDM003	5.00	6.52	OKDM003 5-6-52	1.89	1.02	18.85	21.22	35.31	0.048	0.018	11.14
OKDM003	6.52	7.50	OKDM003 6.52-7.5	1.15	9.33	13.75	14.62	38.62	0.083	0.012	10.25
OKDM003	7.50	8.00	OKDM003 7.5-8	2.00	19.93	12.67	9.43	29.46	0.242	0.011	10.83
OKDM003	8.00	9.00	OKDM003 8-9	3.21	10.64	11.38	13.48	41.78	0.064	0.010	9.92
OKDM003	9.00	10.00	OKDM003 9-10	3.29	16.81	12.74	9.69	34.81	0.249	0.011	10.35
OKDM003	10.00	11.00	OKDM003 10-11	3.37	15.06	14.34	9.90	34.93	0.177	0.011	10.57
OKDM003	11.00	12.00	OKDM003 11-12	2.18	3.55	20.97	10.63	42.38	0.214	0.007	9.08
OKDM003	12.00	13.00	OKDM003 12-13	2.64	11.92	19.79	8.22	33.91	0.270	0.011	10.23
OKDM003	13.00	14.00	OKDM003 13-14	3.11	13.32	11.18	10.73	42.29	0.076	0.010	9.62
OKDM003	14.00	15.00	OKDM003 14-15	2.78	11.65	13.78	10.06	40.90	0.167	0.011	10.11
OKDM003	15.00	16.00	OKDM003 15-16	2.52	10.89	10.74	10.99	46.28	0.127	0.007	8.94
OKDM003	16.00	17.43	OKDM003 16-17.43	3.50	11.03	9.45	11.42	47.13	0.123	0.008	8.99
OKDM003	17.43	18.00	OKDM003 17.43-18	1.72	7.26	7.23	12.33	55.41	0.095	0.006	8.42
OKDM003	18.00	19.00	OKDM003 18-19	2.62	9.36	9.82	11.28	49.50	0.141	0.009	8.82
OKDM003	19.00	20.00	OKDM003 19-20	0.37	12.43	12.93	9.14	42.08	0.220	0.009	10.06
OKDM003	21.00	22.00	OKDM003 21-22	1.27	10.74	7.02	11.53	49.68	0.180	0.006	9.74
OKDM003	22.00	23.00	OKDM003 22-23	2.02	13.32	10.49	9.50	42.03	0.315	0.008	10.12
OKDM003	23.00	24.00	OKDM003 23-24	2.54	11.04	9.36	10.33	45.62	0.251	0.006	9.93
OKDM003	24.00	25.00	OKDM003 24-25	1.77	11.94	9.81	9.64	44.50	0.233	0.005	9.86
OKDM003	25.00	26.00	OKDM003 25-26	3.14	8.03	5.53	7.05	28.85	0.186	0.006	22.84
OKDM003	26.00	27.00	OKDM003 26-27	2.53	10.65	10.60	8.76	38.14	0.379	0.009	13.25
OKDM003	27.00	28.00	OKDM003 27-28	2.86	8.58	8.87	9.53	44.54	0.274	0.012	10.95
OKDM003	28.00	29.00	OKDM003 28-29	2.05	7.44	7.51	10.69	50.00	0.271	0.009	10.36
OKDM003	29.00	30.30	OKDM003 29-30.3	3.32	13.92	8.29	9.05	41.67	0.243	0.008	11.05
OKDM003	30.30	31.00	OKDM003 30.3-31	0.91	25.03	9.27	6.16	28.00	0.307	0.007	12.40
OKDM003	31.00	32.00	OKDM003 31-32	0.80	10.40	8.29	11.83	47.84	0.295	0.007	8.45
OKDM003	32.00	33.20	OKDM003 32-33.2	1.80	16.97	9.69	9.24	37.64	0.229	0.011	9.97
OKDM003	33.20	34.00	OKDM003 33.2-34	2.00	17.51	15.50	7.89	29.58	0.352	0.010	11.16



OKDM003	34.00	35.00	OKDM003 34-35	0.85	10.54	9.03	8.42	33.20	0.296	0.757	19.86
OKDM003	35.00	36.30	OKDM003 35-36.3	2.88	10.01	8.88	8.37	32.96	0.270	1.237	17.28
OKDM004	0.00	1.00	OKDM004 0-1	0.81	1.04	30.47	13.87	28.93	0.076	0.051	10.10
OKDM004	1.00	2.00	OKDM004 1-2	2.99	1.15	22.10	19.91	32.81	0.066	0.039	11.99
OKDM004	2.00	2.80	OKDM004 2-2.8	2.18	5.26	22.32	17.18	28.94	0.072	0.033	12.11
OKDM004	2.80	3.52	OKDM004 2.8-3.52	1.61	12.95	16.45	16.25	25.49	0.073	0.025	13.75
OKDM004	3.52	4.80	OKDM004 3.52-4.8	3.85	27.53	8.59	8.17	25.36	0.143	0.012	11.66
OKDM004	4.80	6.00	OKDM004 4.8-6	4.74	16.21	12.86	9.54	36.07	0.106	0.014	9.59
OKDM004	6.00	7.29	OKDM004 6-7.29	2.19	23.85	8.67	9.21	29.86	0.109	0.010	11.44
OKDM004	7.29	8.00	OKDM004 7.29-8	1.77	3.82	9.29	12.54	58.43	0.041	0.009	7.78
OKDM004	8.00	9.00	OKDM004 8-9	3.42	0.12	11.56	12.91	60.49	0.041	0.011	7.35
OKDM004	9.00	9.61	OKDM004 9-9.61	2.34	1.38	12.34	12.53	57.46	0.087	0.012	7.60
OKDM004	9.61	10.80	OKDM004 9.61-10.8	2.46	9.88	15.29	8.96	43.28	0.120	0.015	9.24
OKDM004	10.80	12.00	OKDM004 10.8-12	4.15	1.70	16.05	9.34	54.37	0.195	0.016	8.22
OKDM004	12.00	13.00	OKDM004 12-13	1.22	6.54	9.50	11.36	52.39	0.103	0.014	9.83
OKDM004	13.00	14.00	OKDM004 13-14	1.61	20.61	10.80	7.63	33.26	0.242	0.017	10.93
OKDM004	14.00	15.00	OKDM004 14-15	2.44	17.33	10.58	8.47	36.88	0.256	0.016	10.78
OKDM004	15.00	16.00	OKDM004 15-16	2.05	12.01	9.67	10.31	44.26	0.352	0.011	9.60
OKDM004	16.00	17.00	OKDM004 16-17	1.71	11.62	9.31	10.34	45.44	0.441	0.009	9.21
OKDM004	17.00	18.00	OKDM004 17-18	1.64	11.67	8.97	10.74	43.93	0.705	0.007	9.80
OKDM004	18.00	19.00	OKDM004 18-19	0.75	14.61	9.21	9.41	41.82	0.429	0.007	9.89
OKDM004	19.00	19.80	OKDM004 19-19.8	0.63	28.92	9.53	5.32	22.05	0.232	0.009	13.08
OKDM004	19.80	21.00	OKDM004 19.8-22.3	0.35	2.38	6.22	15.07	60.08	0.351	0.005	6.40
OKDM004	21.00	22.30	OKDM004 22.3-23.4	1.60	17.64	6.71	10.40	38.76	0.262	0.006	10.57
OKDM004	23.40	24.40	OKDM004 23.4-24.4	1.52	16.40	10.30	9.93	36.62	0.295	0.005	10.49
OKDM004	24.40	25.40	OKDM004 24.4-25.4	1.20	23.37	9.64	7.84	29.08	0.223	0.008	11.68
OKDM004	25.40	26.00	OKDM004 25.4-26	1.00	3.45	8.22	14.86	53.42	0.332	0.436	7.55
OKDM004	26.00	26.90	OKDM004 26-26.9	1.39	8.49	9.63	11.01	43.75	0.327	0.719	11.69
OKDM004	26.90	28.00	OKDM004 26.9-28	1.80	7.93	7.41	11.11	43.05	0.291	0.794	14.13
OKDM004	28.00	29.00	OKDM004 28-29	2.38	8.14	5.93	10.32	40.51	0.243	0.664	16.84
OKDM004	29.00	30.00	OKDM004 29-30	2.99	8.01	7.31	12.00	46.52	0.261	0.444	11.23
OKDM004	30.00	31.00	OKDM004 30-31	3.21	7.40	6.78	9.78	42.05	0.273	0.656	16.14
OKDM004	31.00	32.00	OKDM004 31-32	2.39	7.44	5.58	10.29	41.58	0.229	0.977	16.16
OKDM004	32.00	33.00	OKDM004 32-33	2.82	7.50	6.63	9.94	39.96	0.270	0.828	16.82
OKDM004	33.00	34.00	OKDM004 33-34	2.42	7.40	6.23	10.34	40.62	0.241	1.023	16.61
OKDM004	34.00	34.80	OKDM004 34-34.8	2.00	7.75	6.60	9.91	39.30	0.284	1.017	17.05
OKDM005	0.00	1.00	OKDM005 0-1	1.44	0.27	24.09	10.62	47.24	0.068	0.022	5.03
OKDM005	1.00	2.00	OKDM005 1-2	2.29	0.87	28.12	15.86	31.32	0.091	0.034	8.46
OKDM005	2.00	3.00	OKDM005 2-3	2.18	0.16	27.29	18.52	29.79	0.080	0.031	9.82
OKDM005	3.00	4.00	OKDM005 3-4	3.11	0.09	26.48	18.98	30.19	0.066	0.028	10.35
OKDM005	4.00	5.00	OKDM005 4-5	2.07	0.15	27.95	19.29	27.82	0.063	0.022	10.35



OKDM005	5.00	5.62	OKDM005 5-5.62	1.33	4.39	27.57	17.41	23.70	0.063	0.020	10.79
OKDM005	5.62	6.86	OKDM005 5.62-6.86	1.99	5.17	20.53	15.30	31.45	0.030	0.019	12.94
OKDM005	6.86	8.00	OKDM005 6.86-8	1.47	15.62	18.56	12.21	22.08	0.070	0.024	13.07
OKDM005	8.00	9.00	OKDM005 8-9	2.27	18.08	13.73	11.42	26.51	0.044	0.012	12.47
OKDM005	9.00	10.00	OKDM005 9-10	2.78	27.41	11.58	9.16	19.34	0.092	0.014	12.30
OKDM005	10.00	11.00	OKDM005 10-11	1.15	2.77	15.28	17.23	40.55	0.029	0.019	12.69
OKDM005	11.00	12.26	OKDM005 11-12.26	2.51	11.01	20.46	11.87	29.01	0.105	0.017	11.13
OKDM005	12.26	13.00	OKDM005 12.26-13	1.59	14.26	15.33	9.67	35.33	0.126	0.013	10.39
OKDM005	13.00	14.00	OKDM005 13-14	2.57	7.47	16.75	10.44	44.25	0.140	0.015	8.23
OKDM005	14.00	15.00	OKDM005 14-15	3.12	16.48	11.19	9.69	38.88	0.103	0.007	9.39
OKDM005	15.00	16.00	OKDM005 15-16	2.79	16.92	8.94	10.54	40.52	0.095	0.007	9.47
OKDM005	16.00	16.96	OKDM005 16-16.96	2.30	13.86	9.73	10.97	43.51	0.088	0.007	9.02
OKDM005	16.96	18.00	OKDM005 16.96-18	2.76	7.23	8.62	12.60	54.59	0.072	0.005	7.41
OKDM005	18.00	19.00	OKDM005 18-19	2.23	7.07	8.09	13.07	54.81	0.124	0.005	7.05
OKDM005	19.00	20.00	OKDM005 19-20	2.60	15.15	9.65	10.61	42.23	0.160	0.008	8.79
OKDM005	20.00	21.00	OKDM005 20-21	2.18	17.00	12.60	8.81	37.39	0.226	0.010	8.93
OKDM005	21.00	22.00	OKDM005 21-22	3.36	8.19	10.55	12.24	48.96	0.258	0.007	8.02
OKDM005	22.00	23.00	OKDM005 22-23	2.53	12.41	9.58	10.82	46.29	0.218	0.009	7.98
OKDM005	23.00	23.75	OKDM005 23-23.75	1.20	12.36	7.58	12.05	48.49	0.187	0.009	7.09
OKDM005	23.75	25.00	OKDM005 23.75-25	1.77	13.90	11.60	9.88	43.44	0.193	0.013	7.07
OKDM005	25.00	26.00	OKDM005 25-26	2.50	12.48	13.17	9.40	43.61	0.163	0.015	7.36
OKDM005	26.00	27.00	OKDM005 26-27	1.13	5.05	4.64	13.89	61.62	0.140	0.007	6.13
OKDM005	27.00	28.80	OKDM005 27-28.8	1.30	14.92	8.08	12.70	41.22	0.116	0.005	8.81
OKDM005	28.80	30.00	OKDM005 28.8-30	2.13	13.68	9.71	8.69	39.12	0.188	0.011	11.01
OKDM005	30.00	31.00	OKDM005 30-31	1.37	9.57	12.10	11.01	46.76	0.285	0.011	7.15
OKDM005	31.00	32.00	OKDM005 31-32	1.18	7.07	14.09	11.51	47.11	0.429	0.013	6.87
OKDM005	32.00	33.00	OKDM005 32-33	2.33	19.79	15.78	6.95	29.10	0.361	0.012	9.36
OKDM005	33.00	34.00	OKDM005 33-34	1.45	12.03	12.63	10.78	41.40	0.373	0.010	8.10
OKDM005	34.00	34.80	OKDM005 34-34.8	0.57	20.66	8.65	9.52	35.11	0.276	0.008	8.96
OKDM006	1.60	2.00	OKDM006 1.6-2	1.24	20.13	12.86	7.65	32.48	0.159	0.014	9.47
OKDM006	2.00	3.00	OKDM006 2-3	2.46	17.65	13.30	8.74	35.05	0.158	0.014	8.66
OKDM006	3.00	4.00	OKDM006 3-4	2.05	17.96	11.89	7.96	37.81	0.155	0.015	8.74
OKDM006	4.00	5.00	OKDM006 4-5	1.98	13.63	12.21	8.38	43.58	0.119	0.014	8.56
OKDM006	5.00	6.00	OKDM006 5-6	3.27	14.43	10.78	9.17	43.41	0.122	0.014	8.25
OKDM006	6.00	7.00	OKDM006 6-7	2.27	15.12	12.60	9.46	38.29	0.117	0.017	9.65
OKDM006	7.00	8.32	OKDM006 7-8.32	2.73	21.47	10.50	8.50	33.46	0.145	0.013	8.87
OKDM006	8.32	9.00	OKDM006 8.32-9	1.53	6.78	7.54	11.01	59.00	0.040	0.008	6.42
OKDM006	9.00	10.00	OKDM006 9-10	2.00	4.65	10.03	12.33	56.73	0.043	0.012	6.50
OKDM006	10.00	11.00	OKDM006 10-11	2.27	14.29	12.19	10.24	40.85	0.127	0.012	7.67
OKDM006	11.00	12.00	OKDM006 11-12	2.18	11.81	13.29	10.62	42.35	0.289	0.013	7.54
OKDM006	12.00	13.00	OKDM006 12-13	2.61	15.81	10.14	9.77	41.12	0.183	0.010	8.28



OKDM006	13.00	14.00	OKDM006 13-14	3.06	11.87	9.91	11.18	45.15	0.157	0.011	8.58
OKDM006	14.00	14.60	OKDM006 14-14.6	1.61	12.68	9.73	11.43	43.53	0.193	0.010	8.66
OKDM006	14.60	16.00	OKDM006 14.6-16	4.53	8.13	10.66	10.87	50.52	0.231	0.007	7.80
OKDM006	16.00	17.00	OKDM006 16-17	3.77	7.15	11.71	11.46	49.94	0.255	0.009	7.71
OKDM006	17.00	18.00	OKDM006 17-18	2.87	8.33	9.57	10.69	52.18	0.213	0.006	7.64
OKDM006	18.00	19.00	OKDM006 18-19	2.11	6.41	10.00	11.25	53.77	0.251	0.006	7.34
OKDM006	19.00	20.00	OKDM006 19-20	3.39	8.33	10.53	10.80	50.34	0.235	0.005	7.87
OKDM006	20.00	21.00	OKDM006 20-21	1.50	9.58	10.40	10.57	49.33	0.221	0.005	7.53
OKDM006	21.00	22.00	OKDM006 21-22	1.80	7.47	12.19	11.40	48.70	0.244	0.006	7.26
OKDM006	22.00	23.00	OKDM006 22-23	2.40	10.35	11.37	10.08	46.92	0.184	0.004	7.96
OKDM006	23.00	23.95	OKDM006 23-23.95	1.78	9.60	10.15	10.09	49.34	0.144	0.003	7.77
OKDM006	23.95	25.00	OKDM006 23.95-25	1.31	1.46	7.98	13.72	61.78	0.170	<0.001	5.73
OKDM006	25.00	26.00	OKDM006 25-26	1.96	7.40	11.53	11.22	49.54	0.240	0.002	7.58
OKDM006	26.00	27.30	OKDM006 26-27.3	0.68	8.51	10.03	11.28	49.68	0.209	<0.001	7.80
OKDM006	27.30	28.10	OKDM006 27.3-28.1	1.19	20.07	9.19	8.42	35.26	0.237	0.007	9.52
OKDM006	28.10	29.00	OKDM006 28.1-29	0.84	16.17	10.21	9.14	38.86	0.315	0.007	9.12
OKDM006	29.00	30.00	OKDM006 29-30	1.02	22.93	9.87	7.12	30.80	0.209	0.012	10.37
OKDM006	30.00	31.00	OKDM006 30-31	1.99	13.26	8.63	10.63	44.93	0.253	0.007	7.52
OKDM006	31.00	32.00	OKDM006 31-32	1.09	24.38	9.18	7.29	29.78	0.219	0.014	9.90
OKDM006	32.00	34.00	OKDM006 32-34	1.21	19.65	15.15	7.49	29.49	0.340	0.022	9.21
OKDM007	0.00	1.00	OKDM007 0-1	2.16	16.20	13.88	8.53	35.93	0.206	0.015	9.68
OKDM007	1.00	2.00	OKDM007 1-2	2.12	8.85	9.04	10.86	52.34	0.089	0.007	7.98
OKDM007	2.00	3.00	OKDM007 2-3	1.36	10.15	9.79	10.12	49.92	0.135	0.010	8.52
OKDM007	3.00	4.00	OKDM007 3-4	1.84	11.67	11.09	8.19	47.51	0.090	0.011	8.75
OKDM007	4.00	5.00	OKDM007 4-5	1.48	13.86	8.61	8.31	47.68	0.106	0.008	8.67
OKDM007	5.00	6.00	OKDM007 5-6	2.94	10.44	10.54	9.86	48.79	0.048	0.014	8.42
OKDM007	6.00	7.00	OKDM007 6-7	1.94	7.98	10.05	11.29	52.19	0.048	0.014	7.61
OKDM007	7.00	8.00	OKDM007 7-8	2.06	4.68	10.48	11.38	56.98	0.057	0.013	6.51
OKDM007	8.00	9.40	OKDM007 8-9.4	2.80	7.17	12.53	9.88	51.65	0.183	0.014	7.12
OKDM007	9.40	10.00	OKDM007 9.4-10	0.98	7.19	12.52	10.42	50.57	0.169	0.012	7.17
OKDM007	10.00	11.00	OKDM007 10-11	2.22	5.85	10.35	11.92	54.11	0.278	0.015	6.76
OKDM007	11.00	12.00	OKDM007 11-12	3.30	5.37	9.30	10.92	57.91	0.162	0.014	5.80
OKDM007	12.00	13.00	OKDM007 12-13	3.46	5.80	10.93	12.37	52.23	0.268	0.011	7.00
OKDM007	13.00	14.00	OKDM007 13-14	2.84	10.09	10.77	11.42	46.43	0.218	0.009	7.93
OKDM007	14.00	15.00	OKDM007 14-15	4.24	14.43	12.37	9.21	39.77	0.247	0.010	8.67
OKDM007	15.00	16.00	OKDM007 15-16	1.70	9.50	12.70	10.69	45.43	0.221	0.010	8.04
OKDM007	16.00	17.00	OKDM007 16-17	1.22	11.69	10.19	10.47	45.56	0.162	0.007	8.18
OKDM007	17.00	18.00	OKDM007 17-18	1.36	6.65	8.00	12.16	55.63	0.171	0.005	6.57
OKDM007	18.00	19.00	OKDM007 18-19	1.72	7.77	9.22	10.56	54.03	0.216	0.004	6.94
OKDM007	19.00	20.00	OKDM007 19-20	1.68	8.98	10.13	11.82	48.28	0.231	0.004	7.57
OKDM007	20.00	21.00	OKDM007 20-21	1.52	8.75	11.78	10.82	47.37	0.202	0.003	7.61

OKDM007	21.00	22.00	OKDM007 21-22	1.12	8.56	11.93	10.37	47.52	0.229	0.004	7.88
OKDM007	22.00	23.00	OKDM007 22-23	1.76	9.95	11.57	10.16	45.21	0.613	0.005	7.77
OKDM007	23.00	24.00	OKDM007 23-24	1.22	11.05	10.37	10.05	45.93	0.248	0.005	7.91
OKDM007	24.00	25.00	OKDM007 24-25	1.82	17.35	8.07	9.47	39.11	0.203	0.006	9.51
OKDM007	25.00	26.00	OKDM007 25-26	1.66	17.05	9.68	8.86	38.21	0.315	0.007	9.29
OKDM007	26.00	27.30	OKDM007 26-27.3	1.38	21.75	8.87	7.78	33.31	0.219	0.010	10.27
OKDM008	0.00	1.00	OKDM008 0-1	1.74	14.90	11.68	7.70	43.70	0.145	0.019	8.26
OKDM008	1.00	2.00	OKDM008 1-2	1.88	16.97	13.85	7.47	36.76	0.237	0.024	9.07
OKDM008	2.00	3.00	OKDM008 2-3	2.20	9.85	15.65	9.48	42.58	0.281	0.029	8.24
OKDM008	3.00	4.00	OKDM008 3-4	1.70	6.70	12.02	11.61	50.03	0.246	0.072	7.18
OKDM008	4.00	5.53	OKDM008 4-5.53	1.94	14.08	15.79	9.07	35.33	0.393	0.041	9.44
OKDM008	5.53	7.00	OKDM008 5.53-7	1.92	9.81	11.28	11.72	46.05	0.282	0.027	7.77
OKDM008	7.00	7.90	OKDM008 7-7.9	0.92	5.97	10.00	13.63	51.86	0.242	0.022	6.70
OKDM008	7.90	9.00	OKDM008 7.9-9	1.42	10.50	12.20	10.92	44.42	0.340	0.022	8.01
OKDM008	9.00	10.00	OKDM008 9-10	1.32	9.32	11.72	11.61	45.82	0.293	0.013	7.96
OKDM008	10.00	11.00	OKDM008 10-11	1.68	10.83	8.90	11.97	46.86	0.192	0.011	8.16
OKDM008	11.00	12.00	OKDM008 11-12	1.82	12.75	10.40	10.71	42.80	0.188	0.013	8.80
OKDM008	12.00	13.47	OKDM008 12-13.47	2.36	11.88	10.11	11.13	43.77	0.137	0.011	8.85
OKDM008	13.47	14.00	OKDM008 13.47-14	0.72	11.51	10.18	11.19	43.69	0.113	0.007	8.85
OKDM008	14.00	15.00	OKDM008 14-15	1.76	9.80	9.01	12.04	47.55	0.111	0.006	8.03
OKDM008	15.00	16.00	OKDM008 15-16	1.22	9.03	7.82	12.19	49.82	0.340	0.007	7.71
OKDM008	16.00	17.00	OKDM008 16-17	1.54	10.71	8.34	11.52	47.09	0.272	0.008	8.33
OKDM008	17.00	18.00	OKDM008 17-18	1.54	9.51	7.92	12.37	50.19	0.307	0.004	7.11
OKDM008	18.00	19.30	OKDM008 18-19.3	1.66	9.36	10.65	11.61	46.45	0.253	0.004	7.98
OKDM008	19.30	20.00	OKDM008 19.3-20	1.26	0.31	9.37	12.50	52.50	0.180	0.005	3.26
OKDM008	20.00	21.30	OKDM008 20-21.3	1.62	0.98	9.78	12.50	52.50	0.181	0.008	6.14
OKDM009	0.00	0.30	OKDM009 0-0.3	0.40	5.40	14.28	7.32	34.31	0.225	0.019	15.62
OKDM009	0.30	1.00	OKDM009 0.3-1	0.66	0.08	2.21	6.79	32.44	0.027	0.025	24.99
OKDM009	1.00	2.00	OKDM009 1-2	1.26	0.05	0.58	1.85	37.24	0.022	0.035	25.08
OKDM009	2.00	3.30	OKDM009 2-3.3	2.12	0.79	1.55	1.45	30.25	0.040	0.013	28.09
OKDM009	3.30	4.00	OKDM009 3.3-4	1.12	5.19	5.63	11.76	53.19	0.110	0.008	9.04
OKDM009	4.00	5.00	OKDM009 4-5	1.52	6.50	6.12	14.10	56.40	0.156	0.005	5.64
OKDM009	5.00	6.00	OKDM009 5-6	1.56	12.94	7.12	11.63	48.28	0.124	0.006	6.73
OKDM009	6.00	7.00	OKDM009 6-7	2.42	8.38	10.13	12.03	50.38	0.174	0.006	6.41
OKDM009	7.00	8.00	OKDM009 7-8	2.04	15.16	10.34	9.87	42.11	0.153	0.005	7.76
OKDM009	8.00	9.00	OKDM009 8-9	2.50	11.34	9.95	10.95	46.77	0.194	0.005	7.40
OKDM009	9.00	10.00	OKDM009 9-10	2.50	16.34	10.78	8.69	39.95	0.327	0.006	8.25
OKDM009	10.00	11.00	OKDM009 10-11	1.28	20.48	9.80	9.06	34.60	0.192	0.006	9.33
OKDM009	11.00	12.00	OKDM009 11-12	1.72	14.60	8.91	9.19	39.01	0.242	0.008	10.85
OKDM009	12.00	13.40	OKDM009 12-13.4	2.84	11.01	8.80	10.35	41.51	0.281	0.008	11.19
OKDM009	13.40	14.00	OKDM009 13.4-14	1.12	13.25	8.95	9.16	37.83	0.220	0.012	12.13



OKDM009	14.00	15.00	OKDM009 14-15	1.62	10.31	8.31	9.29	38.02	0.307	0.011	13.51
OKDM009	15.00	16.00	OKDM009 15-16	2.02	8.70	9.52	9.81	40.88	0.355	0.015	12.47
OKDM009	16.00	16.60	OKDM009 16-16.6	0.52	10.06	7.12	11.50	46.01	0.247	0.012	9.71
OKDM009	16.60	18.00	OKDM009 16.6-18	2.06	4.91	11.47	10.56	41.94	0.306	0.009	12.44
OKDM009	18.00	19.00	OKDM009 18-19	1.32	18.75	9.18	9.41	36.19	0.292	0.014	9.36
OKDM009	19.00	20.00	OKDM009 19-20	1.80	18.42	7.73	10.13	39.07	0.298	0.013	8.48
OKDM009	20.00	21.00	OKDM009 20-21	1.10	11.41	11.09	11.38	43.87	0.397	0.014	7.71
OKDM009	21.00	22.00	OKDM009 21-22	1.60	20.00	7.70	9.59	37.44	0.311	0.016	8.55
OKDM009	22.00	23.00	OKDM009 22-23	2.86	17.11	11.98	9.28	35.66	0.432	0.014	8.42
OKDM009	23.00	24.00	OKDM009 23-24	2.92	13.48	13.20	10.18	39.36	0.320	0.019	7.69
OKDM009	24.00	25.00	OKDM009 24-25	2.70	9.51	12.04	10.84	47.27	0.348	0.017	6.52
OKDM010	0.00	1.00	OKDM010 0-1	2.72	8.08	6.16	7.07	28.81	0.128	0.019	21.36
OKDM010	1.00	2.05	OKDM010 1-2.05	1.56	2.69	3.10	5.04	38.69	0.065	0.019	20.99
OKDM010	2.05	3.00	OKDM010 2.05-3	2.43	2.00	1.92	1.39	33.12	0.053	0.016	26.60
OKDM010	3.00	3.80	OKDM010 3-3.8	2.02	8.78	7.50	7.39	41.60	0.170	0.006	14.60
OKDM010	3.80	5.00	OKDM010 3.8-5	2.50	18.03	12.72	8.01	32.10	0.319	0.004	10.73
OKDM010	5.00	6.03	OKDM010 5-6.03	3.06	17.79	10.71	8.91	35.81	0.314	0.003	9.92
OKDM010	6.03	7.00	OKDM010 6.03-7	1.44	11.29	12.95	9.71	43.26	0.359	0.007	8.50
OKDM010	7.00	8.00	OKDM010 7-8	1.26	12.84	11.62	10.48	41.99	0.376	0.008	8.51
OKDM010	8.00	9.00	OKDM010 8-9	1.74	13.27	7.70	11.19	46.75	0.165	0.004	7.67
OKDM010	9.00	10.00	OKDM010 9-10	1.82	9.90	8.14	12.02	49.61	0.390	0.002	7.35
OKDM010	10.00	11.00	OKDM010 10-11	1.36	9.97	8.48	11.74	49.56	0.328	0.002	7.45
OKDM010	11.00	12.00	OKDM010 11-12	1.50	18.77	10.22	8.71	35.62	0.332	0.004	9.60
OKDM010	12.00	12.90	OKDM010 12-12.9	1.62	10.26	10.01	9.76	40.81	0.322	0.004	11.89
OKDM010	12.90	14.00	OKDM010 12.9-14	2.18	5.89	5.89	10.58	43.43	0.258	0.004	14.77
OKDM010	14.00	14.95	OKDM010 14-14.95	1.94	9.35	7.31	10.14	43.08	0.341	0.006	12.38
OKDM010	14.95	16.00	OKDM010 14.95-16	1.84	10.98	8.99	9.12	36.72	0.339	0.008	13.86
OKDM010	16.00	17.25	OKDM010 16-17.25	3.48	8.81	9.31	8.50	36.39	0.361	0.010	15.36
OKDM010	17.25	18.00	OKDM010 17.25-18	0.96	7.57	12.00	11.55	47.68	0.456	0.006	7.35
OKDM010	18.00	19.00	OKDM010 18-19	2.38	20.98	9.05	8.49	33.39	0.488	0.007	9.65
OKDM010	19.00	20.00	OKDM010 19-20	1.74	19.08	11.57	7.94	34.45	0.408	0.008	9.35
OKDM010	20.00	21.00	OKDM010 20-21	3.36	9.43	8.66	11.94	49.06	0.474	0.004	7.31
OKDM010	21.00	22.00	OKDM010 21-22	2.74	15.61	11.83	8.54	37.91	0.580	0.012	8.79
OKDM010	22.00	23.00	OKDM010 22-23	1.88	3.31	10.45	11.25	56.70	0.370	0.005	6.19
OKDM010	23.00	23.65	OKDM010 23-23.65	2.24	21.71	8.38	6.10	36.64	0.318	0.011	9.17
OKDM010	23.65	25.00	OKDM010 23.65-25	4.36	4.63	8.85	13.46	55.96	0.213	0.007	6.12
OKDM010	25.00	26.00	OKDM010 25-26	1.34	9.61	9.89	8.82	52.62	0.280	0.014	6.62
OKDM010	26.00	27.00	OKDM010 26-27	2.96	10.65	15.89	8.09	42.55	0.303	0.015	7.50
OKDM010	27.00	28.00	OKDM010 27-28	1.88	3.39	4.69	15.22	57.92	0.152	0.526	8.24
OKDM010	28.00	28.80	OKDM010 28-28.8	1.00	8.85	8.88	10.89	47.28	0.230	0.012	11.91

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