



# BLACK CANYON

ASX: BCA

27 September 2024

## High Grade Manganese Discovered at Wandanya

- Drilling has intersected high grade manganese at the W2 prospect<sup>1</sup>, Wandanya located 80 km south of the Woodie Woodie Mine
- Portable XRF (pXRF) analysis indicate grade ranges of between 15% to 55% Mn.
- The mineralisation is interpreted as fault related hydrothermal, stratabound manganese enrichment representing a significant new exploration model on the eastern margin of the Oakover Basin.
- This style of mineralisation expands the scope to explore for additional high-grade mineralisation along strike where the Company has mapped 1.75km of intermittent high grade outcropping manganese, down dip within the sedimentary sequence and potentially along associated feeder faults.
- Expedited laboratory-based manganese assay results for selected representative holes from W2 are expected in the coming weeks to confirm the pXRF results.
- Samples have been collected for density-based beneficiation test work to potentially produce a high-grade manganese product

Australian manganese explorer and developer, Black Canyon Limited (**Black Canyon** or **the Company**) (**ASX: BCA**) is pleased to announce the completion of the W2 and KR2 RC drill program. The maiden drill program completed at W2 has identified potential hydrothermal related stratabound mineralisation with pXRF results confirming high-grade manganese.

### **Black Canyon's Managing Director Brendan Cummins said:**

*"It was exciting to be back on the rig and drilling the first holes into the W2 prospect. With each hole drilled we began to build a picture of the distribution, thickness and internal structure of the mineralisation. What was of particular interest was the consistency of the horizon over 240m strike and how we intersected mineralisation on the eastern most holes on every line so the mineralisation remains open to the north, south and east."*

**Cautionary Note in relation to visual estimates and pXRF readings** The Company cautions that visual estimates and pXRF readings should never be considered a proxy or substitute for laboratory analyses. Laboratory assays (XRF for Mn suite of elements) are required to determine representative grades and intervals of the elements associated with the visible mineralisation reported from geological logging and pXRF readings. RC samples have been submitted to Bureau Veritas in Perth WA with expedited analytical results expected in mid October. Further details are located in Appendix 1.

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### Capital Structure (ASX: BCA)

Shares on Issue	80.9M
Top 20 Shareholders	47%
Board & Management	9%
Funds & Institutions	15%

### Board of Directors

**Graham Ascough**  
Non-Executive Chairman

**Brendan Cummins**  
Managing Director

**Simon Taylor**  
Non-Executive Director

**Adrian Hill**  
Non-Executive Director

### Balfour Manganese Field Highlights

Global MRE of 314Mt @ 10.5% Mn. \*  
 Largest Resource in Western Australia.  
 Development Options – Traditional Mn concentrate or HPMSM processing for EV's.

\*BCA Announcement 12/12/23



“Iron alteration and brecciation often associated from manganese mineralisation at Woodie Woodie was also observed. Significantly the age of the rocks we have drilled at W2 are younger than the rocks that host Woodie Woodie however similar processes may have occurred providing manganese rich fluids access to receptive units to form this stratabound mineralisation. The main advantage of this style of mineralisation is the benefit of hydrothermal high grades with the predictability of a mineralised layer which may extend over hundreds of metres and vary in thickness”

“It is very early days but I am very impressed with the geology, initial pXRF results and the future exploration potential using this new mineralisation model.”



**Figure 1. W2 Prospect, RC drill bags from WDRC031 in the foreground**

### W2 Prospect, Wandanya (BCA 100%)

The W2 prospect was drilled on an approximate 40 x 40m grid testing a 240 long x 200m wide target. This drill program comprised 35 holes for 642m of drilling. Drill Collar information is presented in Appendix 2.

### pXRF Results

A total of 6 RC holes were sampled generating 38 one metre interval samples that were gathered along the eastern boundary of the stratabound mineralisation. Representative holes were sampled from every second line along the 240m of drilled strike for pXRF analysis. On each drill line the last 2 eastern holes were sampled from depths between 4m and 9m which included the stratabound mineralisation and portions of the lower grade footwall and hangingwall.

The RC drill samples were dried, crushed, split at Bureau Veritas and pulverised to 95% passing 75um to maximise sample homogeneity and reduce sampling error prior for pXRF analysis. The pXRF results are presented in Table 1 which show consistent zones of mineralisation with the bottom 2m for each intersection typically intersecting high grade mineralisation potentially suitable for direct shipping (DSO).

**Table 1. pXRF results from WDRC12, 13, 26, 27, 31 and 32**

HOLE ID	FROM (m)	TO (m)	THICKNESS (m)	Mn (%)	Fe (%)	Drill intersection
WDRC013	3	9	6	26.8	3.4	6m @ 26.8 % Mn & 3.4% Fe from 3m, including 2m @ 42.8 % Mn from 6m
WDRC026	0	3	3	31.9	4.0	3m @ 31.9% Mn & 4.0 % Fe from surface
WDRC027	4	9	5	31.8	5.7	5m @ 31.8% Mn & 5.7% Fe from 4m, including 2m @ 39.8 % Mn from 7m
WDRC031	1	6	5	32.1	3.3	5m @ 32.1% Mn & 3.3% Fe from 5m, including 2m @ 41.6% Mn from 4m
WDRC032	4	9	5	32.2	2.2	5m @ 32.2% Mn & 2.2% Fe from 4m, including 2m @ 48% Mn from 7m

The pXRF samples will also be analysed at Bureau Veritas using standard analytical methods (fusion XRF) with results expected in mid-October. The remainder of the RC assay results are expected in mid-November.

Further details are provided in Appendix 1 and pXRF results presented in Appendix 3

Sufficient sample has also been collected to undertake benchtop heavy liquid separation testwork to beneficiate lower grade manganese intervals to determine if a 35 to 40% Mn product can be produced. This is particularly relevant for the mixed Mn/Dolomite breccia zone (Figure 2).

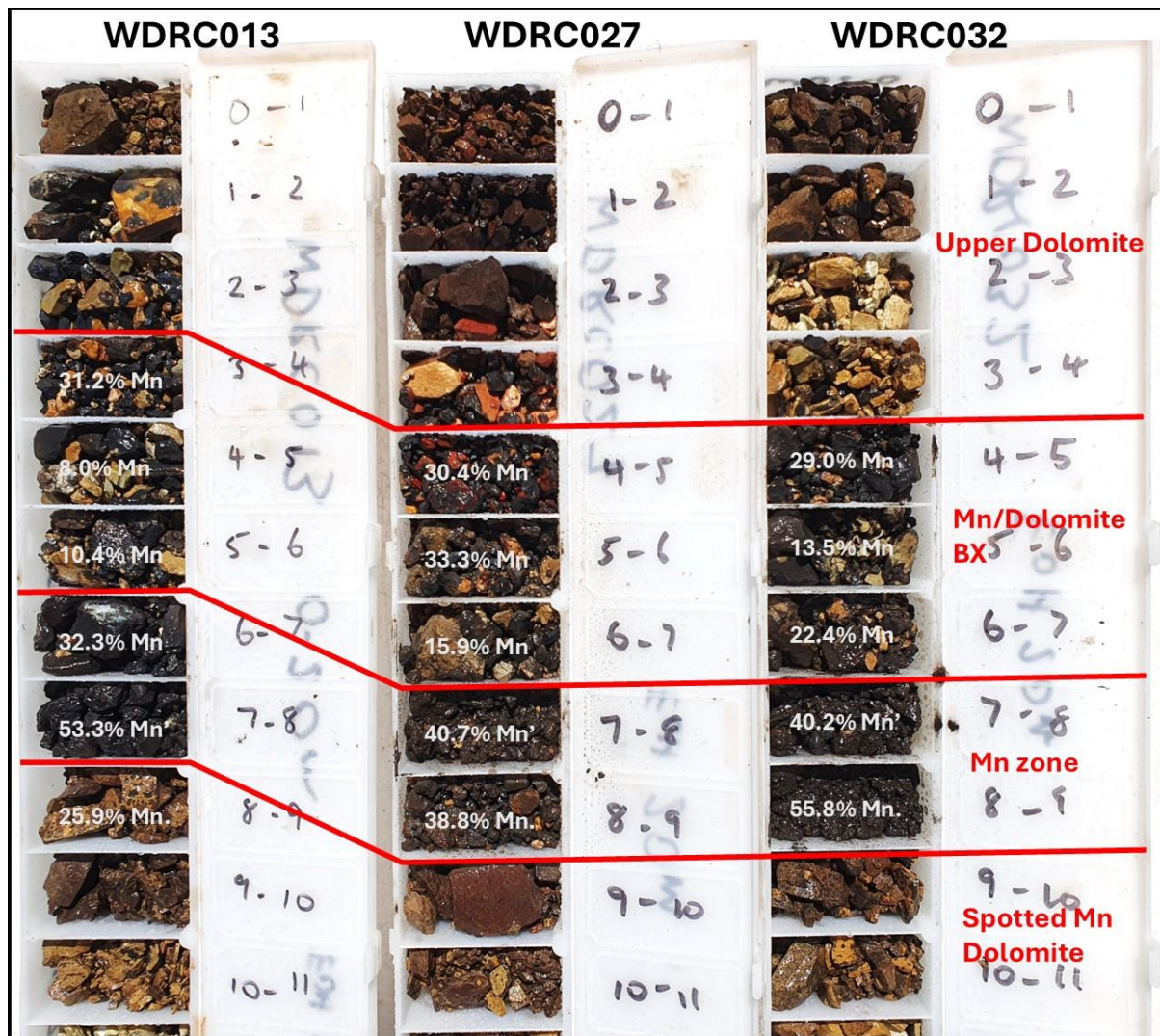


Figure 2. Chip tray photos from 0-11m from selected holes drilled into the W2 Prospect showing pXRF assay result and the various zones defined within the manganese horizon.

### Geology and Alteration

The mineralisation is associated within a sedimentary sequence. From the base to the top of the sequence the geology comprises footwall dolomite, spotted manganese dolomite, massive manganese and manganese dolomite breccia overlain by hangingwall dolomite. The consistency of

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the mineralisation down dip and along strike has been interpreted to represent fault related, hydrothermal stratabound style of manganese mineralisation. Goethite alteration is common above the manganese zone and hematite was logged within the mineralised zones as jaspilitic bands. Manganese intensity increases towards the base of the sequence.

The overall geological sequence is dipping very shallowly to the east but is also openly folded with a northerly axial plane forming undulating outcrops. Several large north-easterly faults can be identified along strike associated with surface mineralisation.

Manganese mineralisation was logged on the second and last holes on the east boundary of the drill pattern and remains open to the north, south and east. The initial drill program has only tested 240m of strike and the Company has mapped additional high grade manganese outcrops intermittently over 1.75km to the north which require further evaluation (Figure 3).

### IP Drill Targets

Dipole – dipole IP (DDIP) targets were also tested as part of the drill program. The shallow eastern chargeability high and resistivity low target correlated to manganese enrichment associated with the stratabound mineralisation. The deeper chargeability and high resistivity target intersected a thick interval of sulphide bearing shale (pyrite) from 40 until the end of hole at 70m.

The effectiveness of DDIP for detecting manganese mineralisation was demonstrated with the drilling of the IP targets and additional DDIP surveys in the region will be beneficial in planning future drill programs along and across strike to the east.

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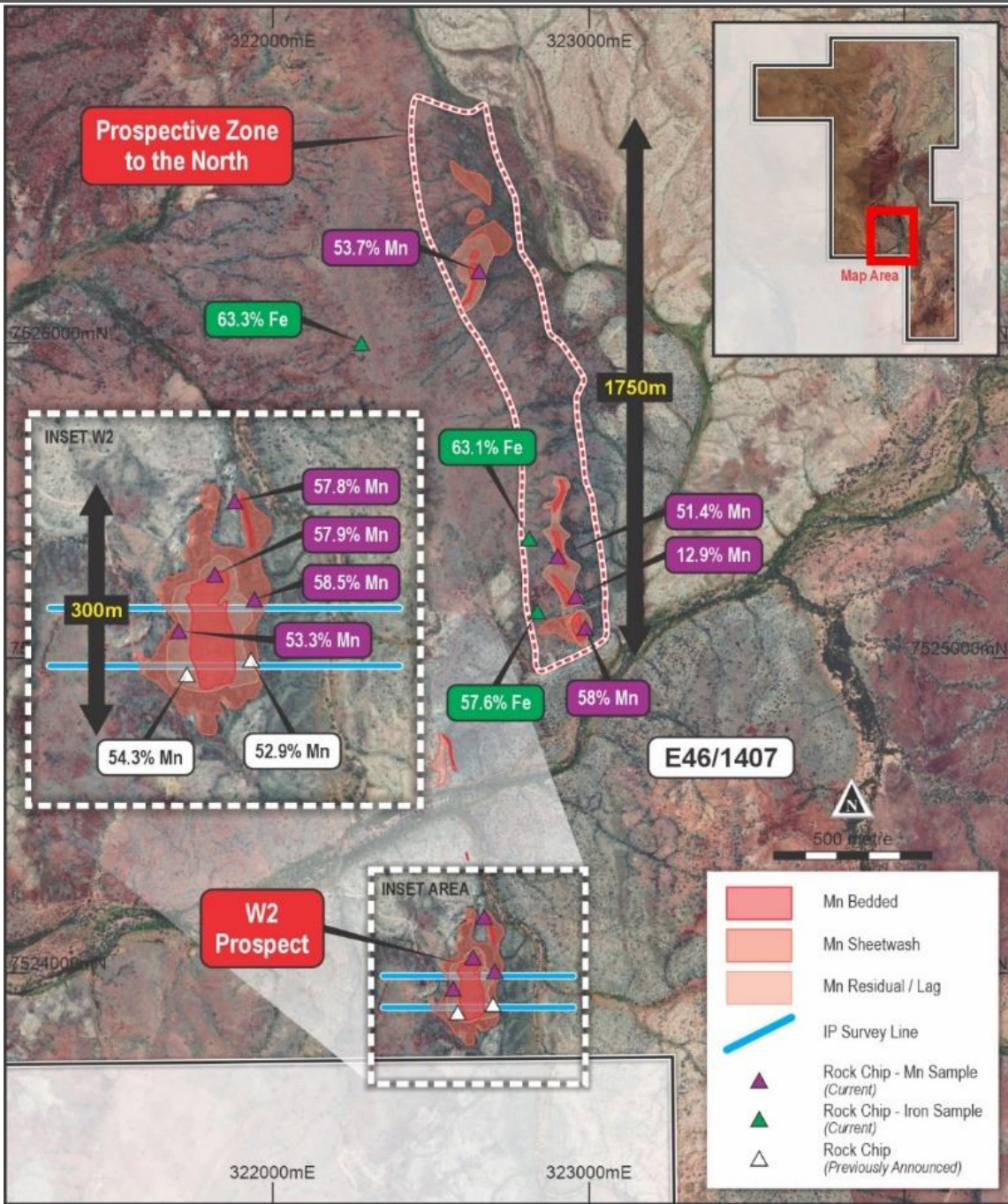
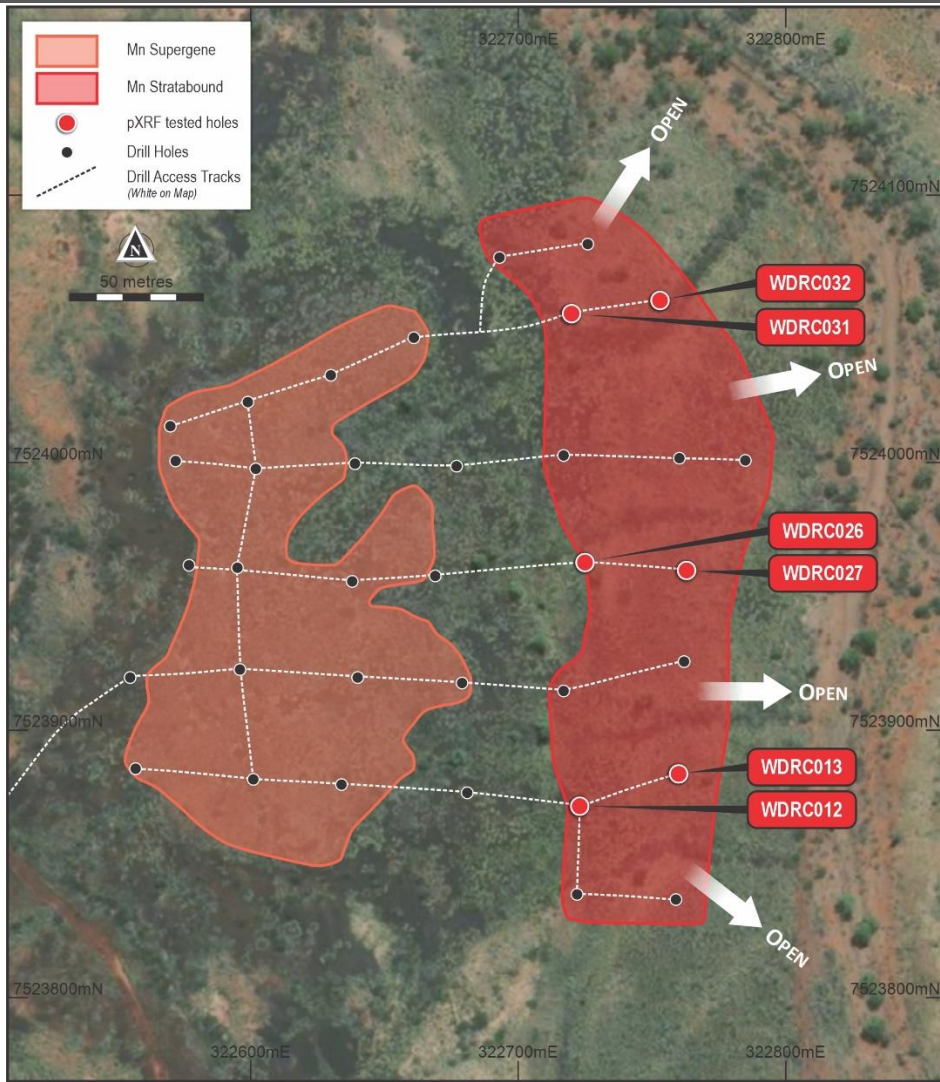


Figure 3. W2 prospect, Wandanya Project (E46/1407) showing high grade manganese outcrops and the IP survey lines



**Figure 4. Drill collar location plan and stratabound mineralisation projected to surface.**

**KR2 Prospect, (BCA 100%)**

A total of 31 holes for 881m were completed into KR2. The infill drill program has reduced the previous drill pattern from 200 x 200m to 100m x 100m. The objective of the infill drill program is to increase the geological and grade confidence so the currently Inferred mineral resource so it can be upgraded to a higher confidence classification that can be used in more detailed feasibility studies.

The assay results are expected in mid-November.

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**This announcement has been approved by the Board of Black Canyon Limited.**

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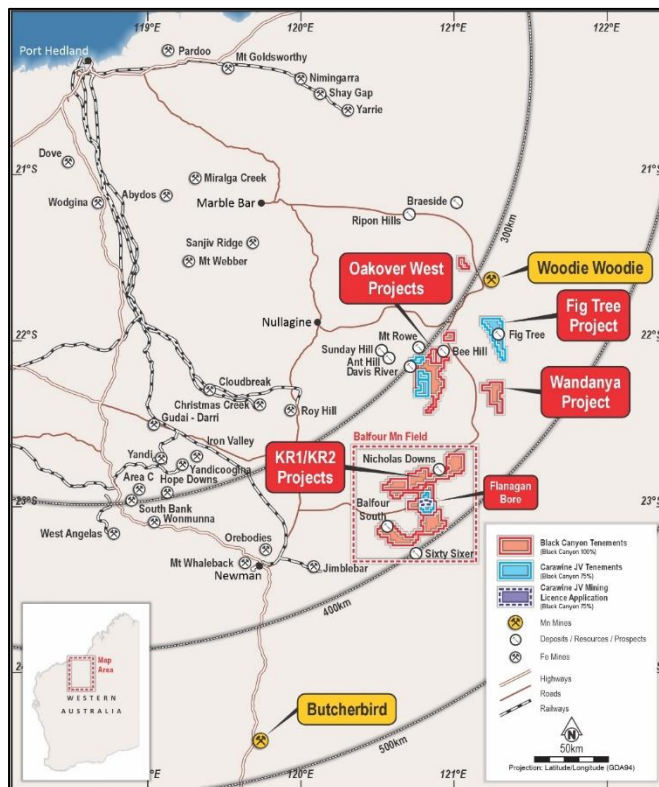
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### Reference List:

1. ASX Announcement 14 November 2023 – Multiple high grade Manganese rock chip samples from Wandanya Project

### About Black Canyon



Black Canyon has consolidated a significant land holding totalling 2,100km<sup>2</sup> in the underexplored Balfour Manganese Field and across the Oakover Basin, in Western Australia.

The emerging potential for the Balfour Manganese Field is evident by the size of the geological basin, mineral resources identified to date, distance from port, potential for shallow open pit mining and a likely beneficiated Mn oxide concentrate product grading between 30 and 33% Mn. Black Canyon holds several exploration licenses 100% within the Balfour Manganese Field along with a 75% interest in the Carawine Joint Venture with ASX listed Carawine Resources Limited. A Global Mineral Resource (Measured, Indicated & Inferred) of 314 Mt @ 10.4% Mn has been defined across the Balfour Manganese Field projects.

Manganese continues to have attractive long-term fundamentals where it is essential and non-substitutable in the manufacturing of alloys for the steel industry and a critical mineral in the cathodes of Li-ion batteries.

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## **Compliance Statements**

### Reporting of Exploration Results and Previously Reported Information

The information in this report that relates to Exploration Results is based on, and fairly represents, information and supporting documentation reviewed by Mr Brendan Cummins, Managing Director of Black Canyon Limited. Mr Cummins is a member of the Australian Institute of Geoscientists, and he has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which has been undertaken to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Cummins consents to the inclusion in this release of the matters based on the information in the form and context in which they appear. Mr Cummins is a shareholder of Black Canyon Limited.

For further information, please refer to ASX announcements dated 17 May 2021, 10 June 2021, 7 July 2021, 15 July 2021, 5 October 2021, 4 January 2022, 8 February 2022, 21 February 2022, 2 March 2022, 23 March 2022, 13 April 2022, 9 June 2022, 7 September 2022, 15 September 2022, 11 October, 21 & 24 November 2022, 5 December 2022, 28 December 2022, 14 February 2023, 27 March 2023, June 1 2023, June 14 2023, June 17 2023, July 14 2023, 23 August 2023, 5 September 2023, 26 September 2023, 12 October 2023, 27 November 2023, 12 December 2023, 26 March 2024, and 1 May 2024, 2 July 2024, 21 August 2024 and 25 September 2024 which are available from the ASX Announcement web page on the Company’s website. The Company confirms that there is no new information or data that materially affects the information presented in this release that relate to Exploration Results and Mineral Resources in the original market announcements.

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**APPENDIX 1: JORC 2012: TABLE 1**

Section 1 Sampling Techniques and Data		
Criteria	Explanation	Comment
Sampling techniques	<p><i>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.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report. 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.</i></p>	<p><i>Reverse circulation (‘RC’) was used as the primary drilling technique for the projects.</i></p> <p><i>RC cuttings were continuously sampled at 1 m intervals. All drill holes were sampled and logged from surface to end of hole or depth of mineralisation.</i></p> <p><i>Drilling completed by Black Canyon has been used for the projects.</i></p> <p><i>All drill samples were logged for weathering, colour, lithology and mineralogy.)</i></p> <p><i>RC samples were collected and placed in marked green plastic bags in order at each collar position.</i></p> <p><i>The 1m interval samples are considered industry standard and representative of the material being tested.</i></p> <p><i>For the pXRF analysis Black Canyon collected RC drill samples on 1m intervals using a shovel to firstly mix the sample in the green RC bag and then 3 – 4 spears of the shovel into the RC bag of sample which was then transferred to the numbered calico bag.</i></p>
Drilling techniques	<p><i>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).</i></p>	<p><i>Black Canyon drilling was completed using RC technique at 90-degree angle to collect 1 m samples as RC chips. Drill diameter is 5.25 inches as per standard RC sizing. A face sampling hammer was used to drill and sample the holes.</i></p> <p><i>The Company contracted Impact Drilling for the September 2024 drill campaign.</i></p>

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<p><i>Drill sample recovery</i></p>	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>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.</i></p>	<p><i>The 2024 drill campaign recorded satisfactory drill sample recovery. The sample weights were not recorded on site, but the samples were weighed once received at the laboratory. The samples weights show good overall recoveries with smaller samples weights recorded in the top 1-2m.</i></p> <p><i>During the 2024 drill program the 1m samples were collected from a levelled cone splitter affixed to the side of the drill rig.</i></p> <p><i>It is unlikely the lower weights encountered in the top 1 - 2m of the holes has biased the samples particularly with the style of mineralisation.</i></p>
<p><i>Logging</i></p>	<p><i>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.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	<p><i>Geological logs exist for the September 2024 drill program.</i></p> <p><i>Logging of individual 1 metre intervals was completed using logging code dictionary which recorded weathering, colour, lithology and observed commentary to assist with determining manganese mineralisation.</i></p> <p><i>Logging and sampling has been carried out to industry standards.</i></p> <p><i>Drill holes were geologically logged in their entirety and a reference set of drill chips were collected in 20m interval chip trays for the drill program. The chip trays were all photographed on site at the end of drilling each hole.</i></p>

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<p><i>Sub-sampling techniques and sample preparation</i></p>	<p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></p> <p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>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.</i></p> <p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p><i>The portable XRF samples were gather by using a shovel to mix the sample in the plastic bag and then spearing the shovel into each bag 2 to 4 times to gather the sample volume. These samples were all dry and a total of 3 to 5kg of samples was collected from each metre interval.</i></p> <p><i>The pXRF samples were submitted to Beurau Veritas who dried the sample for 12 hrs, crushed the entire sample to -10mm and then split of 1kg for pulverization to 95% passing 75um.</i></p> <p><i>The pulverised sample was then transferred into a circular plastic receptacle, encapsulated with a thin plastic film and compressed prior to pXRF analysis. The pXRF is able to undertake analysis through the thin plastic membranes.</i></p>
<p><i>Quality of assay data and laboratory tests</i></p>	<p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p> <p><i>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.</i></p> <p><i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></p>	<p><i>The pXRF samples were determined using an INNOV-X Alpha series XRF analyser and analysed primarily for manganese (Mn) for which it was calibrated.</i></p> <p><i>The pXRF unit was operated in Process Analytical mode and calibrated using three certified Mn standards with the pXRF unit analysing within +/-10% of the standards</i></p> <p><i>The standards include:</i></p> <ol style="list-style-type: none"> <li><i>1. OREAS 170a (45.06% Mn)</i></li> <li><i>2. GMN-03 (44.25 % Mn)</i></li> <li><i>3. GMN-04 (13.42% Mn)</i></li> </ol> <p><i>Standards were re-tested over time during the analysis to recognise drift in the accuracy of the pXRF unit.</i></p> <p><i>During the testing of the 38 samples no drift was noted and each sample was analysed for 30 seconds.</i></p> <p><i>The Company has reviewed the pXRF data and standard data and is satisfied that acceptable levels for pXRF for precision and accuracy have been achieved through the sampling and analysis program and there is no evidence of bias.</i></p> <p><i>The samples will also be analysed using laboratory based fusion XRF at the primary laboratory to provide the final analysis</i></p>

<p><i>Verification of sampling and assaying</i></p>	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p> <p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p> <p><i>Discuss any adjustment to assay data.</i></p>	<p><i>Validation of the drilling files (collar, assay and lithology) was undertaken with field and data entry cross checks</i></p> <p><i>Adjustment of elemental oxides to primary element was completed using well known conversion factors.</i></p> <p><i>There were no twin holes</i></p> <p><i>The assays were adjusted using a calibrated pXRF unit against known certified standards</i></p>
<p><i>Location of data points</i></p>	<p><i>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.</i></p> <p><i>Specification of the grid system used.</i></p> <p><i>Quality and adequacy of topographic control.</i></p>	<p><i>All drill holes in the project area were surveyed by handheld GPS with an accuracy of +/-5 m. The accuracy of the location of the drill collars is sufficient at this stage of exploration and resource development.</i></p> <p><i>Grid system used is WGS 84 / UTM zone 51S.</i></p>
<p><i>Data spacing and distribution</i></p>	<p><i>Data spacing for reporting of Exploration Results.</i></p> <p><i>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.</i></p> <p><i>Whether sample compositing has been applied.</i></p>	<p><i>The 2024 drilling completed at W2 was conducted via a conventional drill grid. The nominal drill spacing was 40 m along east-west traverses and each traverse was spaced approximately 40 m apart north-south. The drill spacing was sufficient to establish grade and geological continuity.</i></p> <p><i>The 2024 infill drilling completed at KR2 was conducted via a conventional drill grid. The nominal drill spacing was reduced from 200 x 200m to 100 m along east-west traverses and each traverse was spaced approximately 100 m apart north-south. The drill spacing was sufficient to establish grade and geological continuity.</i></p> <p><i>No sample compositing has been applied.</i></p>
<p><i>Orientation of data in relation to geological structure</i></p>	<p><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></p> <p><i>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.</i></p>	<p><i>At W2 and KR2 drill lines were oriented east-west across the strike of the primary mineralisation trend. The drill holes were completed at 90 degrees (vertical).</i></p> <p><i>The mineralisation is relatively flat lying exhibiting a gentle dip to the east at W2.</i></p> <p><i>At KR2 the drill lines are oriented perpendicular to the interpreted strike of the outcropping mineralisation. Post completion of the drill program the strike of the mineralisation is mostly likely north-north-west.</i></p> <p><i>The drill grid is assumed to be located both perpendicular to the planar orientation of the key mineralised horizon with no or limited bias introduced with respect to the strike or dip of the mineralised horizon.</i></p>

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Sample security	The measures taken to ensure sample security.	The pXRF samples were collected and transported by Company staff from site to the laboratory and also picked up by Company staff.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews have taken place on the sampling techniques or data

**Section 2 Reporting of Exploration Results**

Criteria	Explanation	Comment
Mineral tenement and land tenure status	<p>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.</p> <p>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.</p>	<p>The KR2 deposit is located within tenement E46/1383 held by Black Canyon Ltd. The tenement was acquired 100% by Black Canyon from Killi Resources in March 2023. All mineral rights apart from copper are 100% owned by Black Canyon Ltd. Tenement E 46/1383 was granted on 11/04/2022 and expires on 10/04/2027.</p> <p>The W2 mineralisation is located within E46/1407 held 100% by Black Canyon Ltd. Tenement E47/1407 was granted on the 11/04/2022 and expires on 10/04/2027</p> <p>The tenements of which the W2 and KR2 are located are subject to a native title agreement with the Karlka Niyaparli Aboriginal Corporation. Archaeologic and Ethnographic heritage surveys have been completed on the W2 and KR2 deposits which has enabled the drilling to be completed. Further Heritage surveys will be required to continue ground disturbing activities beyond the current drill areas.</p> <p>There are no other known impediments to obtaining a licence to operate in the area.</p>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<p>No other historic exploration has been completed on the tenement for manganese on E46/1407 or E46/1383.</p> <p>For W2 Black Canyon completed a ground reconnaissance exercise in 2023 to map the manganese enrichments and determine down dip upside. The exercise proved significant manganese enrichment throughout the project areas both as outcropping, sub-cropping and as substantial float material. The early reconnaissance groundwork by Black Canyon was used as a basis for the 2023 DDIP survey and 2024 RC drilling programme.</p> <p>KR2 has been the subject of a previous RC drill program in July 2023.</p>
Geology	Deposit type, geological setting and style of mineralisation.	<p>The mineralisation model at W2 is preliminary but it appears to be a fault related hydrothermal stratabound deposit. There maybe a supergene overprint to the original hydrothermal mineralisation.</p> <p>The lithological sequence of the W2 prospect principally consists of the overlying Enachedoong Formation carbonates overlying the Stag Arrow Formation sediments from the Proterozoic Manganese Group of the southern Oakover Basin. The mineralisation style at W2 is stratabound and maybe associated with hydrothermal fluids replacing a suitable reactive host work at the base of</p>

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Criteria	Explanation	Comment
		<p><i>the Enachedoong Formation. Faults and structure are considered important features of this style of mineralisation with multiple north east trending faults visible from surface imagery.</i></p> <p><i>The KR2 deposit can be separated into three primary units, the unmineralised Balfour shale, the mineralised Balfour shale and the lower basal shale unit. The unmineralised shale is brown grey in colour and the manganiferous shale unit contains a supergene enriched manganiferous horizon which exhibits thickness range between 5 m to 30 m depth. The manganese layers are confined to distinct banding within the Balfour and there are also minor occurrences of interbedded red/brown shales intermixed with minor saprolitic clay bands.</i></p> <p><i>Further information is provided in the text of the release.</i></p>
Drill hole Information	<p><i>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:</i></p> <ul style="list-style-type: none"> <li><i>• easting and northing of the drill hole collar</i></li> <li><i>• elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li><i>• dip and azimuth of the hole</i></li> <li><i>• down hole length and interception depth</i></li> <li><i>• hole length.</i></li> </ul> <p><i>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.</i></p>	<p><i>See drill hole location plans and figures in main body of the release.</i></p> <p><i>A listing of drill holes and their corresponding coordinates, elevation and depth are listed in Appendix 2.</i></p>

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Criteria	Explanation	Comment
Data aggregation methods	<p>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.</p> <p>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.</p> <p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	<p>No grade cutting to assays has been undertaken.</p> <p>Aggregation of samples has been undertaken using simple average calculations for each 1m sample.</p> <p>Assays have been reported as element</p>
Relationship between mineralisation widths and intercept lengths	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>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').</p>	<p>The W2 prospect is mostly flat lying exhibiting a gentle dip of mineralisation to the east and 90-degree (vertical) drill holes considered appropriate.</p> <p>The mineralisation of the KR2 deposit is primarily strata bound striking approximately 160 degrees and forming a potentially open synformal fold structure. At this initial stage drilling 90-degree (vertical) drill holes is considered appropriate.</p> <p>Down hole widths are reported</p>
Diagrams	<p>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.</p>	<p>Refer images within the body of this release for further details.</p>
Balanced reporting	<p>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.</p>	<p>The exploration results reported here are representative of the mineralisation drill at W2. The holes from which the samples were selected were taken from across the strike length of the deposit to establish grade variability across the known mineralisation.</p>
Other substantive exploration data	<p>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological</p>	<p>At W2 IP surveys have been undertaken and have been found to be useful in identifying high chargeability and low resistivity anomalies associated with manganese mineralisation.</p>

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Criteria	Explanation	Comment
	<i>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.</i>	
<i>Further work</i>	<p><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></p>	<i>DDIP surveys could be used to identify buried stratabound and fault hosted mineralisation prior to any further drilling. The IP surveys could be completed along strike to the north and to the east.</i>

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**APPENDIX 2: SUMMARY DRILL HOLE COLLAR FOR W2 AND KR2**

Hole id	East (WGS84 - Z51)	North (WGS84 - Z51)	RI	EOH	Dip	Azimuth	Deposit
WDRC001	322572	7524001	419	20	-90	360	W2
WDRC002	322602	7523998	415	20	-90	360	W2
WDRC003	322639	7524000	410	70	-90	360	W2
WDRC004	322677	7523999	410	20	-90	360	W2
WDRC005	322717	7524003	412	20	-90	360	W2
WDRC006	322760	7524002	412	20	-90	360	W2
WDRC007	322785	7524001	409	40	-90	360	W2
WDRC008	322557	7523886	422	20	-90	360	W2
WDRC009	322601	7523882	421	20	-90	360	W2
WDRC010	322634	7523880	418	20	-90	360	W2
WDRC011	322681	7523877	414	20	-90	360	W2
<b>WDRC012</b>	<b>322723</b>	<b>7523872</b>	<b>418</b>	<b>20</b>	<b>-90</b>	<b>360</b>	<b>W2</b>
<b>WDRC013</b>	<b>322760</b>	<b>7523884</b>	<b>406</b>	<b>20</b>	<b>-90</b>	<b>360</b>	<b>W2</b>
WDRC014	322759	7523837	409	20	-90	360	W2
WDRC015	322722	7523839	415	12	-90	360	W2
WDRC016	322555	7523920	424	12	-90	360	W2
WDRC017	322596	7523923	427	12	-90	360	W2
WDRC018	322640	7523920	424	12	-90	360	W2
WDRC019	322679	7523918	423	12	-90	360	W2
WDRC020	322717	7523915	416	12	-90	360	W2
WDRC021	322762	7523926	418	20	-90	360	W2
WDRC022	322577	7523962	425	12	-90	360	W2
WDRC023	322595	7523961	424	12	-90	360	W2
WDRC024	322638	7523956	417	12	-90	360	W2
WDRC025	322669	7523958	416	12	-90	360	W2
<b>WDRC026</b>	<b>322725</b>	<b>7523963</b>	<b>410</b>	<b>12</b>	<b>-90</b>	<b>360</b>	<b>W2</b>
<b>WDRC027</b>	<b>322763</b>	<b>7523960</b>	<b>408</b>	<b>20</b>	<b>-90</b>	<b>360</b>	<b>W2</b>
WDRC028	322570	7524014	416	12	-90	360	W2
WDRC029	322599	7524023	415	12	-90	360	W2
WDRC030	322630	7524033	414	12	-90	360	W2
<b>WDRC031</b>	<b>322720</b>	<b>7524056</b>	<b>395</b>	<b>20</b>	<b>-90</b>	<b>360</b>	<b>W2</b>
<b>WDRC032</b>	<b>322753</b>	<b>7524061</b>	<b>402</b>	<b>20</b>	<b>-90</b>	<b>360</b>	<b>W2</b>
WDRC033	322726	7524082	401	20	-90	360	W2
WDRC034	322693	7524077	409	12	-90	360	W2
WDRC035	322661	7524047	413	12	-90	360	W2
KRRC113	281598	7472509	492	30	-90	360	KR2
KRRC114	281505	7472400	499	36	-90	360	KR2
KRRC115	281297	7472296	501	30	-90	360	KR2
KRRC116	281404	7472298	512	36	-90	360	KR2
KRRC117	281501	7472302	512	42	-90	360	KR2

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KRRC118	281602	7472301	511	24	-90	360	KR2
KRRC119	281201	7472193	508	24	-90	360	KR2
KRRC120	281395	7472196	510	30	-90	360	KR2
KRRC121	281603	7472198	512	24	-90	360	KR2
KRRC122	281201	7472097	512	18	-90	360	KR2
KRRC123	281302	7472097	510	30	-90	360	KR2
KRRC124	281398	7472098	506	30	-90	360	KR2
KRRC125	281498	7472093	505	30	-90	360	KR2
KRRC126	281600	7472099	516	36	-90	360	KR2
KRRC127	281698	7472101	501	30	-90	360	KR2
KRRC128	281701	7472005	502	30	-90	360	KR2
KRRC129	281505	7471995	510	30	-90	360	KR2
KRRC130	281303	7472007	509	24	-90	360	KR2
KRRC131	281300	7471897	509	18	-90	360	KR2
KRRC132	281401	7471892	512	30	-90	360	KR2
KRRC133	281502	7471891	515	30	-90	360	KR2
KRRC134	281599	7471899	511	36	-90	360	KR2
KRRC135	281704	7471902	514	24	-90	360	KR2
KRRC136	281302	7471790	513	18	-90	360	KR2
KRRC137	281502	7471799	509	30	-90	360	KR2
KRRC138	281711	7471799	507	18	-90	360	KR2
KRRC139	281701	7471701	504	18	-90	360	KR2
KRRC140	281603	7471694	506	18	-90	360	KR2
KRRC141	281508	7471702	507	36	-90	360	KR2
KRRC142	281405	7471696	507	30	-90	360	KR2
KRRC143	281622	7471585	524	40	-90	360	KR2

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**APPENDIX 3: pXRF analysis results for selected holes at W2**

Holeid	From	to	Sample ID	pXRF Mn %	pXRF Fe %
WDRC012	0	1	W2-36	13.9	6.61
WDRC012	1	2	W2-37	4.2	2.85
WDRC012	2	3	W2-38	3.3	1.84
WDRC013	1	2	W2-28	3.6	3.88
WDRC013	2	3	W2-29	11.1	4.54
WDRC013	3	4	W2-30	31.2	4.3
WDRC013	4	5	W2-31	8.0	1.96
WDRC013	5	6	W2-32	10.4	1.85
WDRC013	6	7	W2-33	32.3	3
WDRC013	7	8	W2-34	53.3	2.67
WDRC013	8	9	W2-35	25.9	6.88
WDRC026	0	1	W2-24	22.0	3.89
WDRC026	1	2	W2-25	43.7	2.88
WDRC026	2	3	W2-26	29.9	5.34
WDRC026	3	4	W2-27	3.4	1.53
WDRC027	2	3	W2-16	4.1	7.21
WDRC027	3	4	W2-17	4.6	5.89
WDRC027	4	5	W2-18	30.4	10.35
WDRC027	5	6	W2-19	33.3	6.69
WDRC027	6	7	W2-20	15.9	3.1
WDRC027	7	8	W2-21	40.7	2.77
WDRC027	8	9	W2-22	38.8	5.45
WDRC027	9	10	W2-23	4.7	2.1
WDRC031	0	1	W2-09	9.2	5.35
WDRC031	1	2	W2-10	31.4	3.45
WDRC031	2	3	W2-11	15.6	3.39
WDRC031	3	4	W2-12	30.7	2.82
WDRC031	4	5	W2-13	44.2	1.75
WDRC031	5	6	W2-14	38.9	5.26
WDRC031	6	7	W2-15	3.8	1.65
WDRC032	2	3	W2-01	3.5	4.27
WDRC032	3	4	W2-02	4.1	3.73
WDRC032	4	5	W2-03	29.0	2.89
WDRC032	5	6	W2-04	13.5	1.89
WDRC032	6	7	W2-05	22.4	2.73
WDRC032	7	8	W2-06	40.2	2.11
WDRC032	8	9	W2-07	55.8	1.61
WDRC032	9	10	W2-08	9.6	3.42

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