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Trek accelerates battery metals strategy with acquisition of advanced WA manganese project via scheme of arrangement with Edge Minerals Limited

Transformational acquisition will see Trek leverage the strong battery materials credentials of its board

Highlights

- Trek enters into a Scheme Implementation Agreement with unlisted public company Edge Minerals Limited (Edge) to acquire the advanced South Woodie Woodie Manganese Project, located in the Pilbara region of Western Australia.
- The South Woodie Woodie Project hosts a JORC (2012) Inferred Resource for the Contact and Contact North Deposits of 11.3Mt grading 15.0% Mn (refer to Table 1, Appendix 1, 2 & 4).
- Historical beneficiation test work has confirmed the ability to upgrade the manganese concentrate to up to 44.6% Mn, with Trek to undertake further test work to determine the potential to produce battery-grade manganese products.
- Outstanding exploration potential both in the existing Resource areas at South Woodie Woodie and within the broader exploration tenement package.
- Heritage and land access agreements are already in place, allowing for immediate access to commence on-ground activities.
- Trek's Board has a strong track-record of successfully developing and commercialising battery materials projects, with Directors Tony Leibowitz, Neil Biddle and John Young all playing a leading role in the formation and early growth of ASX-100 lithium producer Pilbara Minerals (ASX: PLS).
- Total consideration for the project acquisition is ~\$4.0m with Edge shareholders to receive 2.12 new Trek shares for each Edge share held.
- Transaction is subject to regulatory and shareholder approvals.
- Directors Tony Leibowitz, Neil Biddle and John Young are directors of both Trek and Edge and recommend (with Edge Independent director Cameron Boys) that Edge shareholders vote in favour of the Scheme, subject to the independent expert concluding, and continuing to conclude, that the Scheme is in the best interests of Edge shareholders.
- Trek will rename the project the "Hendeka Project".

Commenting on the landmark acquisition, Trek Chief Executive Officer Derek Marshall said:

"South Woodie Woodie represents an advanced, high-quality asset that offers an exciting opportunity for Trek to target the rapidly expanding battery materials sector.

"Importantly, South Woodie Woodie already has an existing Mineral Resource, positive preliminary metallurgy and all required access agreements in place. This will enable Trek to move ahead



quickly with our initial work programs focused on expanding the existing Resource and assessing the potential to produce battery-grade manganese products.

"High-purity manganese is expected to see strong demand growth over the coming years as an increasingly desirable component of battery cathode composition. The raw material is significantly less expensive than alternative cathode materials – such as cobalt and nickel – while also offering batteries with reduced charging time and enhanced safety performance.

"Excitingly, Trek is ideally positioned to pivot towards the battery sector, with a Board that has a very strong track-record in the space. Trek Directors Tony Leibowitz, Neil Biddle and John Young all played a formative role at Pilbara Minerals during the discovery and development of the worldclass Pilgangoora Lithium-Tantalum Project and have extensive experience and contacts in commercialising battery materials projects."

Trek Metals Limited (ASX: TKM) ("Trek" or the "Company") is pleased to advise that it has secured an exceptional near-term development opportunity in the battery materials sector through the proposed acquisition of the advanced South Woodie Woodie Manganese Project, located in the Pilbara region of Western Australia (see Figure 1).

Trek has entered into a binding scheme implementation agreement ("Scheme Implementation Agreement") under which it will, subject to the satisfaction of various conditions, acquire all of the shares in the capital of unlisted public company Edge Minerals Limited ("Edge") by way of a scheme of arrangement under Part 5.1 of the *Corporations Act 2001* (Cth) ("Scheme"). Edge holds a majority interest in the South Woodie Woodie Project.

Implementation of the Scheme is targeted for October 2022.

The transformational acquisition will give the Company an opportunity to pursue the development of an advanced and well-located manganese project in a Tier-1 mining district. The project comprises seven granted Exploration Licences, one pending Exploration Licence and one Retention Licence – refer Appendix 2 & 3 for additional information.

The South Woodie Woodie Project, which will be renamed the **Hendeka Project** following implementation of the Scheme, provides Trek with exposure to a metal with strong supply-demand fundamentals and a robust outlook given its use in steel manufacturing (which currently accounts for 85-90% of global consumption) and growing consumption by the lithium-ion battery sector.





Figure 1: Hendeka Project location map, including Trek Metals other Pilbara Projects

South Woodie Woodie has a JORC (2012) Inferred Mineral Resource Estimate (MRE) of **11.3Mt** grading **15.0% Mn** for the Contact and Contact North deposits (*refer Table 1, Appendix 1, 2 & 4 for additional information*), with immediate drill targets for both Resource extensions and new discoveries.

 Table 1: Global Inferred Mineral Resource Estimate for Contact and Contact North deposits at South Woodie

 Woodie

Summary of Inferred Mineral Resources ⁽¹⁾							
	Tonnes (Mt)	Mn%	Al ₂ O ₃ %	Fe%	SiO ₂ %	Р%	LOI (1000)
Contact	2.8	13.6	5.1	15.7	42.9	0.054	8.4
Contact North	8.5	15.4	3.0	15.0	42.4	0.057	8.6
TOTAL	11.3	15.0	3.5	15.2	42.5	0.057	8.5
(1) Mineral Resources reported at a cut-off grade of 10.1% Mn							



Metallurgical beneficiation test work was previously undertaken by Spitfire Resources Ltd, on PQ diamond core in collaboration with Mineral Engineering Technical Services (METS) to maximise recovery and grade. Composite intervals were put through a scrubbing test to remove slimes (<1mm) before being separated into fines and lump and then passed through Dense Media Separation (DMS) to remove additional waste. After the DMS tests, the final grade and yield of both products was determined. Based on the results of the test work, a product grading up to 44.6% can be produced (*refer Appendix 1 and ASX: SPI 17 February 2012 for additional information*).

Transaction summary

Under the terms of the Scheme, Trek will acquire all of the issued shares in the capital of Edge at a fixed exchange ratio of 2.12 new Trek shares for each Edge share held by Edge shareholders as at the Scheme record date.

Based on the 10-Day VWAP of \$0.0828 two days prior to the execution of the Scheme Implementation Agreement, the transaction values Edge at approximately \$4.0 million and each Edge share at approximately \$0.1755.

Upon implementation of the Scheme, it is estimated that Trek shareholders will own 86.53% of the combined entity and Edge shareholders will own the remaining 13.47%.

Conditions and deal protection mechanisms

The implementation of the Scheme is subject to customary conditions, including:

- An independent expert concluding that the Scheme is in the best interests of Edge shareholders and not changing, withdrawing or qualifying that conclusion;
- Edge shareholders approving the Scheme by the requisite majorities under the Corporations Act;
- The Court approving the Scheme in accordance with section 411(4)(b) of the Corporations Act;
- Trek shareholders approving the Scheme for the purposes of ASX Listing Rule 10.1; and
- Other conditions customary for a transaction of this nature.

The Scheme Implementation Agreement also contains customary deal protection mechanisms, including no shop and no talk provisions, matching and notification rights in the event of a competing proposal for Edge and a break fee payable by Edge and Trek in specified circumstances.

The exclusivity arrangements are subject to customary exceptions that enable the Edge directors to comply with their respective fiduciary and/or statutory duties.

Full details of the terms and conditions of the Scheme are set out in the Scheme Implementation Agreement, a copy of which appears as Annexure 1 to this announcement.

ASX Listing Rule 10.1

The Company has applied for "in-principle" advice from the ASX by virtue of the fact that Directors Tony Leibowitz, John Young and Neil Biddle are also directors and shareholders of Edge ("Related Party Directors"). The ASX has requested that Trek seek shareholder approval pursuant to ASX Listing Rule 10.1 for the acquisition of Edge which will include the requirement for an Independent Expert's report as to whether the transaction is fair and reasonable to Trek shareholders (excluding the Related Party Directors).



Edge Board support

As noted above, the Related Party Directors are directors of both Trek and Edge. In addition, the Related Party Directors hold the following relevant interests in each of Trek and Edge:

- (a) John Young: 2.11% interest in Trek and 2.36% interest in Edge;
- (b) Neil Biddle: 3.32% interest in Trek and 2.27% interest in Edge; and
- (c) Tony Leibowitz: 4.82% interest in Trek and 2.04% interest in Edge.

In order to address potential conflicts of interest, Edge has appointed Cameron Boys to its board. Mr Boys is considered to be an independent director (**Independent Director**).

The Independent Director and Related Party Directors unanimously recommend to Edge shareholders that the Scheme be approved.

Each Edge director who holds or controls Edge shares intends to vote (or cause to be voted) such Edge shares in favour of the Scheme (representing approximately 6.67% of the Edge shares on issue).

These recommendations and intentions are subject to:

- An independent expert concluding, and continuing to conclude, that the Scheme is in the best interests of Edge shareholders; and
- There being no superior proposal for Edge shares.

Next steps for the South Woodie Woodie Project (to be renamed the "Hendeka project")

Following completion of the acquisition, Trek plans to undertake Resource extension and exploration drilling to expand and upgrade the existing Resource. Drilling is expected to commence in the December 2022 Quarter, subject to drill rig availability.

In addition, metallurgical test work will be undertaken to determine the characteristics of the ore and the potential to produce battery-grade manganese products, including high-purity manganese sulphate monohydrate ($MnSO_4$. H_2O) which is seeing growing demand for battery cathode manufacturing.

Existing Heritage and Land Access Agreements are in place, allowing for immediate access to commence on-ground activities.

Indicative timetable and next steps

Trek and Edge shareholders will be asked to approve the Scheme at separate meetings expected to be held in September 2022.

A scheme booklet containing information in relation to the Scheme, including the transaction terms, the basis for the Independent Director and Related Party Directors recommendation and details of the Scheme (**Scheme Booklet**) is expected to be circulated to all Edge Shareholders in August 2022. The Scheme Booklet will include an independent expert's report.

A notice of meeting and explanatory memorandum will also be sent to Trek shareholders including an independent expert's report for the purpose of ASX Listing Rule 10.1.

Advisers

Trek has appointed Blackwall Legal as its legal adviser.

Edge has appointed Steinepreis Paganin as its legal adviser.



Authorised by the Board.

ENDS

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COMPETENT PERSONS STATEMENT

SOUTH WOODIE WOODIE MINERAL RESOURCE

The information in this report that relates to Mineral Resources is based on information compiled by Mr. Lynn Widenbar, Principal Consultant of Widenbar and Associates Pty Ltd., who is a Member of the AusIMM and the AIG. Mr. Lynn Widenbar is a full-time employee of Widenbar and Associates Pty Ltd. and has sufficient experience, which is relevant to the style of mineralisation and types of deposit under consideration and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Lynn Widenbar consents to the inclusion of the report of the matters based on the information in the form and context in which it appears.

The information in this report relating to Exploration Results is based on information compiled by the Company's Chief Executive Officer, Mr Derek Marshall, a competent person, and Member of the Australian Institute of Geoscientists (AIG). Mr Marshall has sufficient experience relevant to the style of mineralisation and to the type of activity described 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 Marshall has disclosed that he holds Performance Rights in the Company. Mr Marshall consents to the inclusion in this announcement of the matters based on his information in the form and content in which it appears

DISCLAIMERS AND FORWARD-LOOKING STATEMENTS

This announcement contains forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as "seek", "target", "anticipate", "forecast", "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar expressions.

The forward-looking statements in this announcement are based on current expectations, estimates, forecasts and projections about Trek and the industry in which it operates. They do, however, relate to future matters and are subject to various inherent risks and uncertainties. Actual events or results may differ materially from the events or results expressed or implied by any forward-looking statements. The past performance of Trek is no guarantee of future performance.

None of Trek's directors, officers, employees, agents or contractors makes any representation or warranty (either express or implied) as to the accuracy or likelihood of fulfilment of any forward-looking statement, or any events or results expressed or implied in any forward-looking statement, except to the extent required by law. You are cautioned not to place undue reliance on any forward-looking statement. The forward-looking statements in this announcement reflect views held only as at the date of this announcement.





APPENDIX 1 - MINERAL RESOURCE ESTIMATE AND REPORTING CRITERIA

As per ASX Listing Rule 5.8 and the JORC (Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 Edition)) reporting guidelines, a summary of the material information used to estimate the Mineral Resource is detailed below (for further detail please refer to JORC Table 1).

GEOLOGY AND GEOLOGICAL INTERPRETATION

Local geology consists of highly altered Carawine Dolomite within the interpreted mineralization envelopes and associated internal waste zones were based on bedding orientations of the Carawine Dolomite, with the geological model for manganese mineralization being based on manganese replacement along original bedding planes. Geological continuity is considered to be reasonably understood, but there is known variability between drill holes.

Sectional interpretations provided by Spitfire Resources Limited (Spitfire) represented the mineralized zones at Contact and Contact North. There was an additional minor footwall zone at Contact North, and a series of discontinuous internal waste zones were also defined. A nominal 4% Mn cut-off was used in conjunction with geological logging to define mineralised zones.

A series of wireframe solids were developed from this geological interpretation. Codes were assigned to assay data based on these surfaces. A typical section is shown below in Figure 1.



Figure 1 Typical Section (7,537,500 North)

DRILLING TECHNIQUES

A total of 236 Reverse Circulation (RC) holes have been drilled in the project area, of which 88 holes were at the Contact Deposit, 101 holes were at Contact North and 27 holes were at Contact South. Drill hole spacing is generally 50m by 50m at Contact and Contact North and 100m by 50m at Contact South (Figure 2).



Drill hole location plots have been used to ensure that local drill spacing conforms to the minimum expected for the resource classification. Drill hole locations have been surveyed using hand-held GPS, with RL's derived by draping over a topography surface.



Figure 2: Plan view of the South Woodie Woodie 3D Resource Model showing drill collar locations. Contact North in red, Contact in blue and Contact South shown in green

SAMPLING TECHNIQUES, SUB-SAMPLING TECHNIQUES, SAMPLE PREPARATION AND ANALYSIS

Reverse circulation drilling was undertaken by Profile drilling services. The RC drill bit was 139.7mm diameter and of standard RC type. The RC rig used a truck mounted auxiliary compressor to boost up to 1,150 psi if required. All RC holes were drilled perpendicular to surface. The rig was fitted with a cyclone and cone splitter with samples collected on a standard 1m basis. The cone splitter fed a riffle splitter which directed a representative portion (approximately 3.5kg) of material into a numbered calico bag which was retained for assay purposes, with the remainder of the sample being collected in a green plastic bag.

A representative portion of the material in the green plastic bag was sieved for geological logging purposes and a small portion was retained in plastic chip trays as a record of logged chips.

Samples were analysed at Nagrom Analytical Laboratory by X-Ray fluorescence (XRF) for Mn, Fe, SiO₂, Al₂O₃, CaO, Cr₂O₃, P₂O₅, Ba, K₂O, MgO, Na₂O, S and TiO₂ and Loss on Ignition. Duplicates and standards were inserted at regular intervals as per standard industry practice.

Out of a total of 15,698 assay intervals, 1,742 were used in resource modelling of the main mineralized zones.



ESTIMATION METHODOLOGY

A conventional Inverse Distance Squared (IDS) interpolation method with an unfolding methodology was used to estimate Mn%, Al_2O_3 %, Fe%, SiO_2 %, P_2O_5 %, CaO%, MgO%, BaO%, S%, TiO₂%, Pb% and LOI%. No grade capping was applied. Search ellipses applied in the estimate were based on a combination of variography and drill hole spacing and the interpreted geological continuity and orientation of the deposits.

The search ellipse had radii of 75m by 75m by 7.5m vertically. A minimum of 2 samples and a maximum of 20 samples was required in the search, with a maximum of 4 samples per drill hole allowed. All mineralised blocks were informed in this search ellipse

A density of 2.8 t/m3 has been applied to calculate resource tonnages. This was based on specific gravity test work on core and from experience and knowledge of manganese deposits in the district.

A typical section through the resource model showing Mn grade is illustrated below as Figure 3.



Figure 3. Mn% Section 7,537,500 North through the Resource Model

MINERAL RESOURCE CLASSIFICATION

Resource classification is based on information and data provided from the Spitfire database. Descriptions of drilling techniques, survey, sampling/sample preparation, analytical techniques and database management validation provided by Spitfire indicate that data collection and management is well within industry standards. Widenbar and Associates Pty Ltd (Widenbar) considers that the database represents an accurate record of the drilling undertaken at the project.

Based on the data integrity, geological knowledge and estimation processes, the Contact Deposit Resource Estimate has been assigned to the Inferred Category as defined by the 2012 edition of the JORC code.

CUT-OFF GRADES AND REPORTING

The Global Mineral Resource reported at a cut-off grade of 10.1% Mn for the Contact and Contact North deposits is presented in Table 1. This table conforms to guidelines set out in the JORC (2012).



At a cut-off grade of 10.1% Mn the Contact and Contact North Deposits comprise a total Inferred Mineral Resource of 11.3 Mt @ 15.0% Mn, for contained Mn of 1.7 Mt. A detailed grade tonnage table is provided below in Table 2.

Summary of Mineral Resources ⁽¹⁾							
	Tonnes (Mt)	Mn%	Al ₂ O ₃ %	Fe%	SiO₂%	Р%	LOI (1000)
Contact	2.8	13.6	5.1	15.7	42.9	0.054	8.4
Contact North	8.5	15.4	3.0	15.0	42.4	0.057	8.6
TOTAL	11.3	15.0	3.5	15.2	42.5	0.057	8.5

Table 1 Global Mineral Resource Estimate for the Contact and Contact North Deposits*

(1) Mineral Resources reported at a cut-off grade of 10.1% ${\rm Mn}$

* Refer below & appendices for additional information

Table 2 Detailed grade tonnage estimates for the Contact and Contact North Deposits

Mn % Cut-off	Volume	Tonnes	Mn%	Al ₂ O ₃ %	Fe%	SiO₂%	Р%	LOI
19.00	556,125.00	1,557,150.00	22.43	2.97	16.71	29.08	0.067	10.06
18.00	724,178.13	2,027,698.75	21.51	3.02	16.56	30.78	0.065	9.78
17.00	1,012,100.00	2,833,880.00	20.37	3.10	16.36	32.90	0.063	9.50
16.00	1,318,615.63	3,692,123.75	19.47	3.13	16.07	34.71	0.062	9.33
15.00	1,695,115.63	4,746,323.75	18.58	3.20	15.81	36.34	0.061	9.20
14.00	2,106,368.75	5,897,832.50	17.78	3.29	15.73	37.62	0.060	9.05
13.00	2,573,403.13	7,205,528.75	17.00	3.38	15.67	38.85	0.059	8.91
12.00	3,086,425.00	8,641,990.00	16.26	3.45	15.47	40.22	0.058	8.80
11.00	3,581,375.00	10,027,850.00	15.60	3.50	15.30	41.45	0.057	8.67
10.90	3,628,337.50	10,159,345.00	15.54	3.51	15.29	41.56	0.057	8.65
10.80	3,683,353.13	10,313,388.75	15.47	3.51	15.26	41.70	0.057	8.64
10.70	3,729,206.25	10,441,777.50	15.41	3.52	15.25	41.81	0.057	8.62
10.60	3,779,465.63	10,582,503.75	15.35	3.52	15.23	41.94	0.057	8.61
10.50	3,836,784.38	10,742,996.25	15.27	3.53	15.22	42.06	0.057	8.59
10.40	3,884,690.63	10,877,133.75	15.22	3.53	15.21	42.17	0.057	8.58
10.30	3,940,690.63	11,033,933.75	15.15	3.53	15.19	42.30	0.057	8.56
10.20	3,985,571.88	11,159,601.25	15.09	3.53	15.17	42.42	0.057	8.55
10.10	4,053,128.13	11,348,758.75	15.01	3.54	15.19	42.53	0.057	8.53
10.00	4,124,668.75	11,549,072.50	14.92	3.54	15.16	42.71	0.056	8.50

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9.00	4,673,981.25	13,087,147.50	14.29	3.55	14.95	44.05	0.056	8.34
8.00	5,179,990.63	14,503,973.75	13.72	3.53	14.69	45.39	0.055	8.16
7.00	5,577,896.88	15,618,111.25	13.28	3.52	14.40	46.51	0.054	8.04
6.00	5,830,284.38	16,324,796.25	12.99	3.50	14.23	47.15	0.054	7.99
5.00	5,963,225.00	16,697,030.00	12.82	3.49	14.11	47.61	0.053	7.94
4.00	6,028,912.50	16,880,955.00	12.73	3.48	14.06	47.86	0.053	7.91
3.00	6,041,837.50	16,917,145.00	12.71	3.48	14.04	47.91	0.053	7.90
2.00	6,047,068.75	16,931,792.50	12.70	3.48	14.04	47.93	0.053	7.89
1.00	6,051,468.75	16,944,112.50	12.70	3.48	14.04	47.95	0.053	7.89
0.00	6,052,090.63	16,945,853.75	12.69	3.48	14.03	47.96	0.053	7.89

METALLURGY

Metallurgical test work was carried out to determine if a saleable Direct Ship Ore (DSO) product in the form of a manganese lump product and fines concentrate could be produced. Beneficiation test work was designed with the assistance of Mineral Engineering Technical Services (METS) targeting maximum grade and yield recovery.

Eleven composite samples were selected from eleven diamond drill holes, representing the Contact and Contact North deposits. From this, nine composites were compiled for the testwork programme, as shown in Table 3.

Before testwork began, sections of each meter of core were tested for in-situ density through the mineralised zones for resource estimation. The density of the mineralised zones averaged 3.03 for the Contact North composites and 2.78 for the lower grade Contact composites.

Testwork was undertaken by Nagrom Metallurgical Services with initial work involving communition of the core into fines (>1mm - <6.3mm) and lump (>6.3mm - <31.5mm) with oversize (<52mm) being re-crushed after identifying additional manganese remaining after initial circuit.

The testwork programme undertaken involved scrubbing in a laboratory scrubber followed by dense medium separation (DMS) of a lump (-31.5+6.3 mm) and fines (-6.3+1.0 mm) concentrate for each composite to produce a high-grade manganese product. The overall product grades for each composite are shown in Table 3, revealing that the majority of samples upgrade to a lump product >40% Mn.

Deposit	HoleID	East	North	ID	Int (m)	Head Grade Mn%	Lump Grade Mn%	Lump Yield %	Fines Grade Mn%	Fines Yield %
	CDD002	311504	7536852	2	12-34	24.3	32.3	19.3	34.8	32.3
.	CDD003	311547	7536846	3	12-30	25.1	39.8	35.1	34.7	13.5
2.9 SG	CDD004	311601	7536809	456	29-35					
	CDD005	311495	7536905	456	8-13	27.9	27.9 41.6	35.0	37.6	20.1
	CDD006	311453	7536894	456	25-31					

Table 3: Beneficiation composite sample information and results



	CDD007	311453	7536849	7	9-19	26.7	41.4	41.0	32.5	15.9
	CDD008	311399	7536897	8	8-25	21.5	27.1	19.1	31.1	16.3
	CDD009	311394	7536954	9	5-18	16.1	23.0	24.5	23.1	14.1
Contact	CDD001	311104	7537503	1	52-67	40.5	44.6	60.1	44.5	19.7
North	CDD010	311204	7537857	10	55-64	30.9	42.1	62.2	38.1	12.1
2.7 SG	CDD011	311345	7537455	11	38-45	34.0	41.6	39.8	39.8	37.0

MODIFYING FACTORS

No modifying factors were applied.



APPENDIX 2 - JORC CODE, 2012 EDITION – TABLE 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	 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. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. 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. 	 The reverse circulation drilling rig used to complete the Contact/Contact North drilling was fitted with a cyclone and cone splitter. A large green plastic bag (or bucket if sample was excessively wet), was filled with drill spoils for every metre drilled. The bags were translucent so that material could be seen to enter the bag while the hole was being drilled. The cone splitter fed a riffle splitter which directed a representative portion (approximately 3.5kg) of material into a numbered calico bag which was retained for laboratory assay purposes. A representative portion of the material in the green plastic bag was sieved for geological logging purposes and a small portion was retained in plastic chip trays as a record of logged chips. Any calico bagged sample under 3.5 kilograms in weight (visually determined) was recorded as having an average to poor return depending on size. Checks were made by using the number on each individual calico bag and matching it to the depth interval from surface with checks made at the end of each twenty-metre sample line. This was done at every hole by the rig geologist. Sample representivity was ensured by constantly ensuring the rig splitter was clear and clean. Diamond core samples were PQ (83.9mm diameter). Sample intervals were chosen during logging, starting with standard one metre sampling, and then compositing based on grade in the second phase.
Drilling techniques	 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). 	 Reverse circulation drilling was undertaken by Profile drilling services. The RC drill bit was 139.7mm diameter and of standard RC type. The RC rig used a truck mounted auxiliary compressor to boost up to 1,150 psi if required. All RC holes were drilled perpendicular to surface. Diamond drilling was performed by Drill Wise Pty Ltd. The Diamond drill bit was an 83.9mm ID (PQ2) Diamond bit and different matrix compositions were used depending on the rock type. The holes were drilled perpendicular to surface and as such needed no orientation. No noticeable deviation of dip



Criteria	JORC Code explanation	Commentary
		 or azimuth was noted. Three holes within Contact North had a 30m RC pre- collar to just above the mineralisation with diamond tails. Generally drilling conditions were acceptable with good run returns possible. The impact on the RC rig of voids was more substantial than for the diamond rig due to pressure loss leading to poor sample returns and increased risk of equipment loss. The combination of softer material holding abrasive chert fragments increased abrasion on the diamond drill bit. As at the date of this resource model, a total of 236 Reverse Circulation (RC) holes had been drilled in the project area, of which 88 holes were at the Contact Deposit, 101 holes were at Contact North and 27 holes were at Contact South. Drill hole spacing is generally 50m by 50m at Contact and Contact North and 100m by 50m at Contact South. Out of a total of 15,698 assay intervals, 1,742 were used in resource modelling of the main mineralized zones.
Drill sample recovery	 Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. 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. 	 All RC samples were noted if recoveries of sample visually/by hand-held weight were less than 3.5 kilograms. Sample splitters on the RC rig were frequently washed during and at the completion of each hole as well as the hosing being purged to minimise cross contamination between holes. Core loss was measured and recorded by the diamond crew at the hole with depth markers used to ensure actual geological intervals were as accurate as possible in length. No established relationship exists between sample recovery and grade however the geology of the area is known for voidal cavities being present in some circumstances.
Logging	 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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	 <u>RC Holes</u> The geologist logged and chip trayed each metre qualitatively recording the following information where applicable; Sample ID, Depth from/to, Lithology (major) and Lithology (minor) plus percentages (visual), mineralisation, mineralisation form, mineralisation percentage, weathering, stratigraphy, recovery, water, alteration, alteration intensity, colour (major) and colour (minor) and comments. Sample intervals were selected based on mineralised intervals for chemical assay. The field assistant was given the sample list and collected the samples, placing them in large



Criteria	JORC Code explanation	Commentary
		 bulka bags for transport off site to Newman. From Newman, they were sent by courier to Nagrom laboratories in Kelmscott, WA <u>Diamond Holes</u> The geologist logged each core tray by lithological changes recording the following information where applicable; Depth from/to, Lithology (major) and Lithology (minor) Overprint, Strat, Colour, Hardness, Comments and each core tray was photographed. The filled core trays were stacked and sealed before being transported off site to Newman. From Newman, they were sent by courier to Nagrom Laboratories in Kelmscott, WA. Sample intervals were selected based on the twinned RC assay results and visual mineralised zones and these composites were sent for metallurgical test work.
Sub-sampling techniques	• If core, whether cut or sawn and whether quarter, half or all core taken.	 RC chips were riffle split and were sampled usually dry unless water was either
and sample	• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet	introduced via the rig or present naturally.RC chip samples were dried and pulverised to
preparation	 or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all 	 allow effective XRF analysis, no other preparation techniques were used. Diamond PQ core intervals sampled used the entire core. The diamond core was dried and pulsarised to a set of the diamond core was dried and pulsarised to be a set of the diamond
	 Quality control procedures daopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the 	 The diamond core was dried and pulverised to a size specification with lump between 6.3mm and 31.5mm in diameter and fines between 2.5mm and 6.3mm in size.
	 sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled. 	 Sampling was ensured to be representative by correlating pre-numbered calico sample bags with hole interval depth. This was checked at every individual hole to ensure accuracy.
Quality of assay data and laboratory tests	 The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. 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. 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. 	 Standard X-Ray fluorescence (XRF) was used for all RC chip samples and analysed for Mn, Fe, SiO₂, Al₂O₃, CaO, Cr₂O₃, P₂O₅, Ba, K₂O, MgO, Na₂O, S and TiO₂ and Loss on Ignition. Head grade of the PQ core was also tested by XRF (further tests undertaken during beneficiation test work on core after head grade). The base XRF analysis returns accurate and complete element concentrations, and these techniques were considered as total. The laboratory, Nagrom, used multiple duplicates and standards per sample batch to test internal accuracy. Spitfire also maintained a QAQC spreadsheet to monitor duplicate accuracies. Overall accuracy was high with small very little deviation between the results.



Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	 The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	 All significant assays and intersections were verified by Mr N Cull (MAIG). The rig geologist recorded all sample numbers used for each drill hole. These numbers were double checked by the field assistant. The exploration manager verified all drill holes and corresponding sample numbers with assayed intervals.
Location of data points	 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. Specification of the grid system used. Quality and adequacy of topographic control. 	 All collar northings and eastings were spatially recorded twice; once with initial pegging and secondly after completion of the hole. A handheld GPS with an accuracy of +/- 4m was used to record locations. The topographic image was sourced and georeferenced by Landgate and has an accuracy of +/- 1m. Drill collars were 'draped' over the topography. Reduced levels differ by a maximum of only 1m over the entire area.
Data spacing and distribution	 Data spacing for reporting of Exploration Results. 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. Whether sample compositing has been applied. 	 General RC hole spacing's were between 50m to 100m apart and are considered sufficient to establish an Inferred Resource. Sample composites were initially done over 1 metre, with further diamond composites based on grade were compiled from processed PQ core after the initial XRF analysis.
Orientation of data in relation to geological structure	 Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 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. 	 The Contact and Contact North mineralisation has been interpreted as replacement style mineralisation. The manganese model, put simply, involves initial siliceous fluids replacing Carawine Dolomite. This, in turn, is replaced by iron rich fluids, and finally by manganese. Intensities of alteration and degree of alteration are responsible for variations in Mn, Fe, and Si grade. The mineralised fluids have preferentially taken the path of least resistance, in this case, the bedding planes of the host rock. As the Carawine Dolomite bedding is flat laying, the mineralisation is generally parallel with the surface. There is therefore no bias realised by orientating the drill holes perpendicular to the mineralised zone.
Sample security	• The measures taken to ensure sample security.	• Standard sampling protocols have been used to ensure security through chain of custody.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	 All sampling was constantly reviewed by the rig geologist on every hole drilled. Some errors associated with sample numbers were



JORC Code explanation

Criteria

Commentary

- detected and rectified by re-sample or reordering the samples.
- No external audits have been carried out.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	 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. 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. 	 The Contact and Contact North Deposits sit wholly within Exploration licence E46/787 in the Wandanya locality in the East Pilbara. The registered owner of the tenement is Edge Minerals Ltd (formerly Edge Minerals Pty Ltd). There are no existing royalties or joint venture agreements in place for the licence. Trek Metals Limited has entered into a binding agreement to acquire Edge Minerals Ltd subject to regulatory and shareholder approvals. A full list of Edge tenure is provided in Appendix 3. Note Bellpiper Pty Ltd is also a wholly owned subsidiary of Edge Minerals Ltd. Exploration licence E46/616 & R46/7 are subject to an on-going joint venture arrangement whereby Edge Minerals Pty Ltd have an 80% share and Planet Mining Pty Ltd (In Liquidation) have a 20% free carried position. Churchill Mining Plc (In Liquidation) also have a royalty linked to E46/616.
Exploration done by other parties	 Acknowledgment and appraisal of exploration by other parties. 	 All exploration at South Woodie Wooide was conducted by Spitfire Resource Limited during the period 2008 – 2017. No known previous exploration for Manganese has been undertaken by other parties in this area.
Geology	 Deposit type, geological setting and style of mineralisation. 	 The basement to the region is comprised of Archaean granites and gneisses. These are unconformably overlain by rocks of the Fortescue and Hamersley Groups including basalt, sandstones, shales, dolomites, cherts, and felsic volcanic. The Hamersley Group is subdivided in to the lower 60m thick Marra Mamba Iron Formation (chert, shale, BIFs and jaspilite) and the upper 150m thick Carawine Dolomite (stromatolitic carbonate sequence with intercalated chert beds, veins and nodules). Secondary silicification of the Carawine Dolomite under subaerial conditions has led to the widespread formation of the Mesoproterozoic Pinjian Chert Breccia



Criteria	JORC Code explanation	Commentary
		 The area is also overlain by the Neoproterozic Manganese group and Phanerozoic lithological units Manganese concentrations in the eastern Pilbara have been noted in the following stratigraphic units: Carrawine Dolomite
		 (Hamersley Group) Marra Mamba Iron Formation (Hamersley Group) Roy Hill Shale member of the Jeerinah Formation (Fortescue Group) Balfour Formation (Bangemall
		 The GSWA mapping available for the area indicates the presence of Quarternary sediments and Tertiary mixed siliceous caprock. Remapping on a more local scale by T.S. Blake of Micraster Geological Services, identified a siliceous chert unit, with a small outcrop of Carawine Dolomite. Manganese was found to be exposed within the siliceous material in an eroded cutting close to the Contact/Contact North Deposit. The area is unconformably overlain by a late-stage sandstone unit that can be seen to be manganese stained in places. The geological model for the area is similar to the Woodie Woodie mineralisation model
		That is, a series of hydrothermal events have been responsible for massive silica, iron and manganese alteration within the Carawine Dolomite. Typically, siliceous fluids have shattered and altered the dolomite to form dolomitic chert breccias and form large, sometimes circular, pipe structures. Bedding within the dolomite is often replaced during this process. Iron rich fluids have similarly replaced the silica, followed by manganese. Replacement and alteration is complex and has formed many rock types and forms. Incomplete manganese replacement is responsible for high silica and high iron areas. Generally, bedding replacement manganese mineralisation correlates with a nearby pipe structure.
		 The central area of Contact North may be the source zone responsible for the Contact Deposits as they are currently known. This zone has no drill results within the mineralised envelope due to poor drilling conditions and an apparent subsidence of the mineralised zone (figure 10). These indicators are typical

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Criteria	JORC Code explanation	Commentary
		above a large mineralised zone due to collapsed dolomite caused by dissolution
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. 	 Exploration results are not being reported. Drill hole details are covered in the body of the announcement.
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. 	• Data was not composited during the modelling process. No top cut to any grade was applied to the data. No constraints were applied to the interpreted mineralised envelope and grade interpolation was treated the same throughout. Some internal waste zones were applied to avoid excessive internal dilution. These techniques are consistent with normal industry standards.
Relationship between mineralisation widths and intercept lengths	 These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. 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'). 	 The average width of the interpreted mineralised envelope for Contact and Contact North is 150m and 350m respectively. The mineralised envelope boundaries were snapped to ends of assay intervals on drill holes. Assay manganese grades determined whether material was inside or outside the interpreted mineralised envelope. It is highly probable that dilutionary effects are evident along mineralised envelope boundaries. This will have the effect of both underestimating the overall grade and overestimating the overall tonnage. These effects will become greater at areas with narrow interpreted mineralised zones.



Criteria	JORC Code explanation	Commentary
		 Given that the RC composited sample depths were one metre, the overall effect on the resource estimate is considered acceptable. A good level of correlation between the twinned RC and Diamond holes assays results was observed. No downhole depth differences of more than 1m were evident which indicates that the two different drilling techniques produced comparable results.
Diagrams	 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. 	 Exploration results are not being reported.
Balanced reporting	• 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.	 Exploration intersection results are not being reported.
Other substantive exploration data	 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. 	 Ground mapping of the area was completed by Micraster Geological Services. GPX has performed an XTEM survey over the area using 100m line spacing and a flight height of 40m. A Gradient Array Induced Polarisation (GAIP) survey was undertaken in mid-2011 which covered a large area of E46/787. The chargeability anomalies produced provided numerous drilling targets which were proven to have correlation with manganese through the Contact/Contact North deposit.
Further work	 The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	 Further planned work at the Project includes extension drilling to test mineralisation in the central part of the Contact North resource, metallurgical drilling to gain samples for additional metallurgical test work.



Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	 Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used. 	 Spitfire supplied validated drill hole data in Micromine format. Collar, assay and coded geology data files were provided. A detailed topography digital terrain model (DTM) was also provided. A sectional geological interpretation of the major geological boundaries was provided by Spitfire in Micromine string format. As at the date of this report, a total of 236 Reverse Circulation (RC) holes had been drilled in the project area, of which 88 holes were at the Contact Deposit, 101 holes were at Contact North and 27 holes were at Contact South.
Site visits	 Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case. 	 No site visits have been made by the CP, as there is little outcrop, and the Resource estimate was commissioned after drilling had been completed.
Geological interpretation	 Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology. 	 The interpretation of the mineralised envelope was largely carried out by assessing manganese grades as dictated by the assay results. This gave an accurate estimate of replacement magnitude as opposed to visual estimation from logging. The sectional interpretations provided by Spitfire represented the mineralized zones and Contact and Contact North. There was an additional minor footwall zone at Contact North, and a series of discontinuous internal waste zones were also defined. A nominal 4% Mn cutoff was used in conjunction with geological logging was used to define mineralised zones. A series of wireframe solids were developed from this geological interpretation. Codes were assigned to assay data based on these surfaces.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	 The interpreted mineralised envelope dimensions are as follows: Contact 420m x 100m Contact North 710m x 470m The mineralised zones are typically 50m to 100m below surface and vary from 5m to 30m in thickness.



Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	 The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of her products. 	 An Inverse Distance Squared (IDS) interpolation method was used to estimate Mn%, Al2O₃%, Fe%, SiO₂%, P₂O₅%, CaO%, MgO%, BaO%, S%, TiO2%, Pb% and LOl%. No grade capping was applied. Search ellipses applied in the estimate were based on a combination of variography and drill hole spacing and the interpreted geological continuity and orientation of the deposits. The search ellipse had radii of 75m by 75m by 7.5m vertically. A minimum of 2 samples and a maximum of 20 samples was required in the search, with a maximum of 4 samples per drill hole allowed. All mineralised blocks were informed in this search ellipse. Block model parameters are shown below.
	 recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions behind modelling of selective mining units. Any assumptions about correlation between variables. Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to drill hole data, and use of 	 Origin Block Centre Spacing # Blocks Centre Spacing # Blocks Centre State North 7536600 12.5 114 7538012.5 RL 201.25 2.5 80 398.75 Sub-cells to a minimum of 2.5m by 2.5m by 0.5m were generated to allow the model to represent the shape of the mineralised zones geometrically. A simple unfolding or flattening process has been applied to the data and model blocks prior to statistical analysis and interpolation, in order to simplify the setup of search ellipses and allow searches to follow the varying dip in parts of the ore zones.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• The tonnages are estimated using natural moisture content. The mineralisation is generally situated above the water table which consists of fresh water. The static water table level varies from 56m to 86m depth.
Cut-off parameters	 The basis of the adopted cut-off grade(s) or quality parameters applied. 	 A cut-off minimum of 4% manganese was applied in construction of interpreted mineralised envelope wireframes. No maximum manganese grade was applied. For reporting purposes, a manganese cut-off grade of 10.1% was applied.
Mining factors or assumptions	 Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of 	 Mining is assumed to be by conventional open pit methods. No dilution or loss factors have been applied to the Mineral Resource Estimate.



Criteria	JORC Code explanation	Commentary
	determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	 The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made. 	 Metallurgical test work was carried out to determine if a saleable Direct Ship Ore (DSO) product could be produced. A beneficiation test work program was run over selected composites of diamond core. Beneficiation test work was designed with the assistance of Mineral Engineering Technical Services (Mets) targeting maximum grade and yield recovery. Specific gravity samples were taken by Spitfire before the beneficiation program commenced with representative low, medium and high-grade core pieces being tested. Testwork was undertaken by Nagrom metallurgical services with initial work involving communtion of the core into fines (+1mm - <6.3mm) and lump (>6.3mm - <31.5mm) with oversize (<52mm) being recrushed after identifying additional manganese remaining after initial circuit. Product yield of lump and fines was then calculated with a base head grade of each. Composites of the best intervals were then taken based on new grade cutoffs with composites assayed by size to determine the screen size needed for the scrubbing stage. The scrubbing, set in a rotating trommel with water, removed slimes (<1mm) size particles and was seperated into lump and fines products again. This gave an updated indicator of final grades for both products. Fines were passed through a trammel particle size distributor to separate out waste material. They were then passed through density media separation to remove additional waste as float and to concentrate the manganese as sink using an S.G of 2.9 only. Lump was passed through an Ericsson cone at 2.9 S.G with the float re-passed at an S.G of 2.7 to liberate additional manganese. After the media separation tests the final grade and yield of both products was determined No metallurgical assumptions have been made. It must be noted that no work has been



Criteria	JORC Code explanation	Commentary
		carried out to determine the representivity of any metallurgical results when compared to the overall deposit areas.
Environmental factors or assumptions	 Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made. 	 No assumptions have been made regarding environmental factors. The general area around the project has seen mining of similar type deposits.
Bulk density	 Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. 	 Specific gravity test work was undertaken by Spitfire at Nagrom Laboratories on selected diamond core on core representing low, medium and high grades. The method used for this specific gravity test work was using dry/wet weight analysis. Experience gleaned from manganese mineralisation at Woodie Woodie dictates that grade/specific gravity curves can be problematic due to erratic voids and clay mineral dilutionary effects. Given the paucity of data and resource category, a conservative specific gravity estimate of 2.8 has been applied to material within the interpreted mineralised envelope
Classification	 The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit. 	 The Contact Mineral Resource has been classified as Inferred, in accordance with The 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code). A range of criteria has been considered in determining this classification including: Geological continuity; Data quality; Modelling technique; Geological Continuity Local geology consists of highly altered Carawine Dolomite the interpreted mineralization envelopes and associated internal waste zones were based on bedding orientations of the Carawine Dolomite, with the geological model for manganese



Criteria	JC	ORC Code explanation	Со	mmentary
Audits or reviews		The results of any audits or reviews of Mineral Resource estimates.	•	mineralization being based on manganese replacement along original bedding planes. Geological continuity is considered to be reasonably understood, but there is known variability between drill holes. <u>Data Quality</u> Resource classification is based on information and data provided from the Spitfire database. Descriptions of drilling techniques, survey, sampling/sample preparation, analytical techniques and database management validation provided by Spitfire indicate that data collection and management is well within industry standards. Widenbar considers that the database represents an accurate record of the drilling undertaken at the project. <u>Drilling Spacing</u> Drill hole location plots have been used to ensure that local drill spacing conforms to the minimum expected for the resource classification. Drill hole spacing is generally 50m by 50m, with some areas of 100m by 50m. Drill hole locations have been surveyed using hand-held GPS, with RL's derived by draping over a topography surface. <u>Modelling Technique</u> A conventional 3D IDS modelling technique has been used, with an unfolding methodology applied to provide a dynamic element to the allocation of search ellipses. The modelling technique and parameters are considered suitable to the domains being estimated. <u>Final Classification</u> Based on the data integrity, geological knowledge and estimation processes, the Contact and Contact North Deposit Resource Estimate has been assigned to the Inferred Category as defined by the 2012 edition of the JORC code. No audits or reviews have been carried out.
Discussion of	•	Where appropriate a statement of the relative accuracy and confidence level in	٠	The relative accuracy of the Mineral Resource is reflected in the reporting of the Mineral
accuracy/		the Mineral Resource estimate using an approach or procedure deemed		Resource as being in line with the guidelines of the 2012 JORC Code.
Conjuance		appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a	•	The statement relates to global estimates of tonnes and grade, with reference made to resources above a certain cut-off that are intended to assist mining studies.



Criteria	JORC Code explanation	С	omme	entary				
	 qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. 	•	No com	production parisons.	data	is	available	for



APPENDIX 3 – EDGE MINERALS LIMITED TENEMENT INFORMATION

Tenement	Holder	Status	Commence	Expiry	Area	Prospect
E46/787	Edge Minerals Pty Ltd	Live	22-Jul-09	21-Jul-23	4 BL	Contact & Contact North
E46/835	Bellpiper Pty Ltd	Live	25-Mar-11	24-Mar-23	26 BL	Western Front
E46/1159	Edge Minerals Pty Ltd	Live	7-Mar-18	6-Mar-23	18 BL	
E46/1160	Edge Minerals Pty Ltd	Live	16-Nov-17	15-Nov-22	4 BL	
E46/1282	Edge Minerals Pty Ltd	Live	11-Apr-19	10-Apr-24	18 BL	
E46/1304	Edge Minerals Pty Ltd	Live	17-Jan-20	16-Jan-25	16 BL	
E46/1387	Edge Minerals Pty Ltd	Pending			54 BL	
E46/616	Edge Minerals Pty Ltd (80%) Planet Mining Pty Ltd (20%)	Live	3-Aug-05	2-Aug-22	1 BL	Tally-Ho
R46/2	Edge Minerals Pty Ltd (80%) Planet Mining Pty Ltd (20%)	Live	4-Jul-17	3-Jul-22	100HA	Tally-Ho





South Woodie Woodie Project tenure, including main Prospect / Deposit locations



APPENDIX 4 - SUMMARY DRILL HOLE COLLAR AND COMPOSITES (>10.1% MN)

Hole ID	East	North	RL	Dip	Azi	Depth	From	То	Interval	Mn%	Fe%	Al ₂ O ₃ %	SiO ₂ %
CON002	311841	7536844	358	-90	0	136	51	54	3	10.50	15.90	1.74	52.60
CON004	311599	7536809	361	-90	0	76	7	9	2	12.10	12.80	8.70	45.60
CON004	311599	7536809	361	-90	0	76	10	14	4	15.20	11.10	8.72	41.60
CON004	311599	7536809	361	-90	0	76	17	20	3	11.70	8.72	8.02	53.80
CON004	311599	7536809	361	-90	0	76	21	23	2	12.50	8.04	10.60	49.90
CON007	311493	7536905	363	-90	0	94	28	36	8	24.10	11.00	5.25	32.10
CON010	311842	7536743	359	-90	0	94	52	58	6	22.40	11.80	1.98	39.40
CON012	311898	7536758	358	-90	0	105	58	59	1	10.60	10.20	1.30	65.00
CON012	311898	7536758	358	-90	0	105	62	65	3	12.30	12.80	1.87	57.20
CON012	311898	7536758	358	-90	0	105	77	82	5	13.00	27.90	2.00	28.80
CON012	311898	7536758	358	-90	0	105	84	86	2	14.20	17.60	8.33	32.20
CON012	311898	7536758	358	-90	0	105	87	88	1	18.00	28.50	2.98	17.90
CON012	311898	7536758	358	-90	0	105	89	90	1	14.20	9.27	2.34	57.40
CON013	311957	7536652	358	-90	0	113	63	65	2	14.40	24.00	3.75	30.20
CON013	311957	7536652	358	-90	0	113	71	73	2	10.80	16.00	3.20	49.80
CON013	311957	7536652	358	-90	0	113	74	78	4	13.20	15.70	2.87	46.40
CON014	311903	7536651	360	-90	0	88	50	51	1	13.10	8.80	0.82	61.90
CON016	311907	7536862	356	-90	0	118	32	34	2	15.10	31.00	4.73	19.00
CON016	311907	7536862	356	-90	0	118	36	39	3	14.00	24.00	3.14	33.20
CON016	311907	7536862	356	-90	0	118	43	44	1	12.20	7.72	2.11	63.20
CON016	311907	7536862	356	-90	0	118	45	46	1	11.30	16.30	4.87	45.30
CON017	311952	7536835	355	-90	0	130	35	37	2	14.10	20.40	1.46	40.70
CON017	311952	7536835	355	-90	0	130	38	39	1	12.00	24.40	3.34	34.40
CON017	311952	7536835	355	-90	0	130	40	42	2	13.10	20.50	5.44	35.90
CON019	311804	7536979	357	-90	0	100	9	10	1	11.50	11.10	2.72	58.10
CON020	311754	7536750	360	-90	0	130	25	28	3	16.10	33.00	0.98	17.80
CON020	311754	7536750	360	-90	0	130	30	32	2	17.60	16.80	3.21	38.20
CON024	312001	7536650	357	-90	0	148	88	89	1	11.30	14.30	3.11	51.90
CON029	311838	7536949	356	-90	0	124	37	40	3	15.30	10.10	1.88	54.50
CON030	311997	7536853	355	-90	0	142	71	73	2	22.50	7.93	4.92	39.50
CON030	311997	7536853	355	-90	0	142	75	76	1	12.50	15.90	7.38	39.30
CON032	311951	7536948	355	-90	0	130	74	75	1	10.80	3.28	2.72	71.30
CON032	311951	7536948	355	-90	0	130	80	81	1	12.30	12.40	6.83	47.90
CON034	311903	7536946	355	-90	0	136	56	61	5	14.10	19.90	3.48	37.90
CON034	311903	7536946	355	-90	0	136	66	68	2	13.00	20.00	5.26	36.50
CON034	311903	7536946	355	-90	0	136	69	70	1	18.10	11.10	8.28	38.80
CON035	311841	7537066	355	-90	0	128	57	58	1	10.30	7.85	7.61	57.60
CON035	311841	7537066	355	-90	0	128	61	62	1	11.20	13.50	4.30	51.50
CON036	311898	7537058	355	-90	0	118	67	69	2	11.70	21.90	1.82	39.50
CON037	311947	7537052	355	-90	0	130	103	105	2	10.30	0.52	1.28	79.50
CON037	311947	7537052	355	-90	0	130	108	109	1	18.20	8.54	2.28	51.70
CON038	311053	7537350	360	-90	0	190	95	96	1	11.30	4.86	1.67	70.00



CON039	311104	7537503	359	-90	0	152	51	67	16	23.40	16.90	4.89	24.60
CON039	311104	7537503	359	-90	0	152	68	71	3	26.10	13.40	1.95	29.60
CON039	311104	7537503	359	-90	0	152	79	82	3	12.80	5.58	1.02	67.00
CON039	311104	7537503	359	-90	0	152	83	84	1	11.40	6.55	1.54	67.10
CON040	311353	7536950	364	-90	0	94	6	12	6	20.50	15.20	7.13	30.20
CON042	311447	7536744	364	-90	0	95	50	51	1	14.10	10.80	4.46	50.90
CON043	311399	7536843	364	-90	0	94	1	3	2	10.70	23.90	10.90	26.80
CON044	311401	7536897	364	-90	0	88	8	19	11	20.30	14.10	5.87	34.20
CON044	311401	7536897	364	-90	0	88	20	21	1	11.80	5.13	4.11	65.10
CON045	311450	7536849	364	-90	0	82	8	11	3	16.70	19.60	5.94	30.00
CON045	311450	7536849	364	-90	0	82	14	21	7	15.50	16.40	6.04	38.20
CON045	311450	7536849	364	-90	0	82	23	24	1	16.50	8.33	5.64	50.40
CON046	311456	7536800	364	-90	0	82	3	6	3	15.10	15.00	8.84	35.50
CON046	311456	7536800	364	-90	0	82	7	10	3	16.80	18.90	6.68	30.30
CON047	311502	7536852	363	-90	0	82	10	13	3	11.90	12.90	5.98	49.20
CON047	311502	7536852	363	-90	0	82	15	28	13	20.70	13.90	5.78	34.00
CON047	311502	7536852	363	-90	0	82	29	30	1	13.90	22.40	9.17	27.70
CON047	311502	7536852	363	-90	0	82	31	33	2	15.60	15.10	8.78	36.00
CON048	311501	7536794	363	-90	0	46	4	5	1	13.30	22.90	9.20	26.40
CON049	311450	7536945	363	-90	0	52	21	22	1	11.10	19.30	6.30	39.60
CON049	311450	7536945	363	-90	0	52	23	25	2	21.00	16.40	7.13	26.00
CON049	311450	7536945	363	-90	0	52	27	29	2	18.10	28.20	3.39	18.90
CON052	311249	7537001	364	-90	0	82	4	10	6	18.90	15.20	8.17	30.30
CON053	311151	7537002	364	-90	0	76	20	22	2	11.10	9.94	4.25	58.50
CON053	311151	7537002	364	-90	0	76	29	31	2	13.80	10.10	2.42	56.60
CON055	311153	7537250	364	-90	0	124	18	23	5	21.00	22.30	3.59	23.70
CON056	311052	7537250	361	-90	0	142	17	21	4	17.40	27.30	4.74	19.60
CON057	310948	7537250	360	-90	0	130	32	40	8	15.30	10.30	3.12	52.90
CON058	310950	7537350	359	-90	0	124	67	74	7	16.60	16.90	2.27	41.00
CON059	310950	7537450	358	-90	0	118	50	55	5	18.00	13.20	2.67	43.20
CON059	310950	7537450	358	-90	0	118	59	60	1	11.60	5.06	1.75	69.20
CON059	310950	7537450	358	-90	0	118	63	67	4	17.40	5.10	0.56	61.40
CON064	311347	7537455	362	-90	0	124	37	50	13	24.90	21.10	3.36	19.20
CON065	311347	7537555	360	-90	0	124	68	73	5	16.20	13.50	3.40	45.40
CON066	311247	7537754	358	-90	0	130	49	63	14	16.70	21.90	1.59	33.70
CON066	311247	7537754	358	-90	0	130	65	67	2	14.10	17.60	8.33	32.20
CON066	311247	7537754	358	-90	0	130	68	69	1	17.90	28.50	2.98	17.90
CON066	311247	7537754	358	-90	0	130	70	71	1	14.10	9.27	2.34	57.40
CON067	311201	7537857	358	-90	0	130	50	52	2	12.10	10.50	3.64	55.80
CON067	311201	7537857	358	-90	0	130	54	66	12	19.60	15.30	4.03	34.60
CON068	310995	7537908	357	-90	0	106	36	42	6	23.10	14.40	5.64	31.20
CON068	310995	7537908	357	-90	0	106	44	45	1	14.50	19.90	8.42	29.50
CON079	311538	7536895	362	-90	0	82	18	20	2	11.20	10.30	4.36	58.00
CON080	311450	7536894	363	-90	0	82	22	30	8	20.30	23.40	4.28	21.90
CON081	311396	7536954	364	-90	0	82	3	6	3	20.40	13.40	7.83	32.20



CON081	311396	7536954	364	-90	0	82	7	8	1	12.80	14.10	6.22	44.60
CON081	311396	7536954	364	-90	0	82	10	11	1	10.20	24.40	5.85	34.00
CON081	311396	7536954	364	-90	0	82	13	14	1	11.20	20.50	8.39	35.50
CON085	311552	7536800	362	-90	0	82	6	7	1	10.20	10.30	9.48	50.80
CON086	311394	7536804	364	-90	0	82	3	5	2	17.80	12.50	8.40	38.00
CON086	311394	7536804	364	-90	0	82	6	10	4	14.90	17.40	7.76	35.50
CON087	311250	7537700	358	-90	0	142	78	79	1	11.70	26.30	5.12	28.90
CON087	311250	7537700	358	-90	0	142	82	84	2	12.30	15.80	4.84	46.20
CON087	311250	7537700	358	-90	0	142	89	90	1	10.60	4.18	0.80	73.90
CON087	311250	7537700	358	-90	0	142	103	108	5	17.50	10.10	1.27	50.80
CON087	311250	7537700	358	-90	0	142	112	115	3	12.30	5.37	0.96	68.60
CON088	311350	7537000	364	-90	0	82	10	15	5	16.20	9.01	8.44	45.10
CON098	311302	7537048	364	-90	0	82	20	21	1	16.00	10.00	2.92	52.30
CON103	311303	7537000	364	-90	0	82	5	12	7	13.40	16.10	7.53	39.60
CON105	311353	7536901	365	-90	0	82	3	4	1	17.20	19.10	7.11	27.50
CON105	311353	7536901	365	-90	0	82	5	11	6	17.60	18.60	6.20	30.50
CON108	311254	7536951	365	-90	0	82	15	16	1	11.20	11.80	2.90	56.90
CON108	311254	7536951	365	-90	0	82	25	27	2	14.10	8.10	1.70	60.50
CON109	311251	7537053	364	-90	0	82	2	3	1	14.30	18.90	8.69	31.10
CON109	311251	7537053	364	-90	0	82	4	5	1	12.90	15.30	6.41	42.30
CON109	311251	7537053	364	-90	0	82	6	7	1	14.00	14.70	5.17	43.30
CON114	311197	7537003	364	-90	0	52	3	5	2	13.70	24.50	8.45	24.40
CON116	311150	7537052	364	-90	0	52	5	7	2	11.50	19.40	7.69	37.50
CON116	311150	7537052	364	-90	0	52	10	11	1	13.30	36.20	3.47	13.90
CON117	311152	7537099	364	-90	0	52	19	20	1	13.70	4.80	1.65	67.50
CON121	311704	7536746	361	-90	0	52	15	19	4	15.40	22.20	4.13	33.20
CON123	311653	7536701	362	-90	0	52	40	42	2	15.70	11.30	5.96	46.60
CON125	311600	7536750	362	-90	0	52	13	19	6	14.10	3.50	0.62	49.80
CON128	311500	7536700	363	-90	0	52	36	37	1	10.60	6.11	2.76	68.60
CON128	311500	7536700	363	-90	0	52	44	45	1	12.10	7.22	1.27	65.10
CON131	311450	7536700	364	-90	0	52	28	29	1	17.40	14.20	5.00	39.00
CON132	311500	7536750	363	-90	0	52	5	11	6	17.20	16.10	8.99	32.10
CON133	311650	7536800	361	-90	0	52	10	11	1	10.40	23.80	4.42	36.80
CON133	311650	7536800	361	-90	0	52	13	17	4	14.50	14.30	5.40	45.00
CON133	311650	7536800	361	-90	0	52	18	20	2	12.90	25.20	8.20	26.30
CON134	311700	7536800	360	-90	0	52	18	19	1	15.20	21.20	3.74	36.10
CON135	311350	7536800	365	-90	0	52	27	30	3	15.50	15.60	2.07	46.30
CON135	311350	7536800	365	-90	0	52	31	32	1	15.40	10.00	1.57	56.00
CON136	311066	7537482	358	-90	0	118	59	61	2	10.90	6.82	6.39	60.90
CON136	311066	7537482	358	-90	0	118	62	63	1	15.50	3.50	1.14	66.40
CON136	311066	7537482	358	-90	0	118	67	68	1	14.30	3.80	1.37	67.10
CON136	311066	7537482	358	-90	0	118	69	70	1	10.60	4.71	2.15	69.60
CON136	311066	7537482	358	-90	0	118	74	75	1	13.40	4.95	0.94	65.80
CON137	311127	7537469	359	-90	0	118	75	78	3	17.30	5.78	0.94	58.80
CON137	311127	7537469	359	-90	0	118	79	80	1	17.50	6.09	1.22	56.40



CON138	311143	7537525	359	-90	0	118	88	89	1	13.20	40.90	1.53	8.96
CON138	311143	7537525	359	-90	0	118	90	117	27	26.40	20.80	2.74	14.60
CON139	311072	7537531	359	-90	0	124	47	62	15	24.10	19.00	2.56	24.50
CON139	311072	7537531	359	-90	0	124	64	68	4	13.90	6.60	3.28	59.80
CON139	311072	7537531	359	-90	0	124	74	77	3	15.00	7.97	1.27	58.50
CON139	311072	7537531	359	-90	0	124	79	80	1	20.60	5.14	0.99	53.60
CON139	311072	7537531	359	-90	0	124	82	83	1	12.10	7.28	1.12	66.10
CON140	311067	7537659	359	-90	0	136	95	99	4	20.90	15.80	3.07	33.10
CON140	311067	7537659	359	-90	0	136	101	102	1	10.80	8.12	2.32	64.10
CON141	311049	7537757	358	-90	0	124	31	36	5	20.70	13.20	2.74	39.80
CON141	311049	7537757	358	-90	0	124	37	39	2	15.40	16.00	9.16	33.00
CON143	311001	7537852	357	-90	0	124	33	41	8	22.00	26.60	5.03	14.40
CON143	311001	7537852	357	-90	0	124	42	43	1	15.70	26.50	4.85	23.90
CON144	310947	7537903	357	-90	0	130	34	36	2	20.70	29.10	2.58	17.10
CON145	311041	7537902	357	-90	0	124	87	88	1	13.00	9.41	1.17	61.40
CON146	311100	7537882	357	-90	0	124	83	85	2	20.70	5.39	2.44	51.00
CON146	311100	7537882	357	-90	0	124	86	87	1	12.40	3.84	0.48	70.50
CON147	311153	7537854	357	-90	0	124	57	58	1	10.60	5.38	1.99	68.90
CON147	311153	7537854	357	-90	0	124	61	64	3	16.00	8.42	4.29	51.70
CON147	311153	7537854	357	-90	0	124	70	75	5	18.80	5.68	0.81	56.90
CON149	311039	7537965	356	-90	0	124	65	66	1	10.40	11.30	2.36	61.90
CON150	311209	7537900	358	-90	0	124	58	64	6	29.00	17.00	2.71	18.40
CON151	311252	7537847	358	-90	0	136	44	46	2	15.90	15.50	4.36	42.30
CON151	311252	7537847	358	-90	0	136	47	51	4	20.10	17.10	3.92	31.70
CON151	311252	7537847	358	-90	0	136	57	58	1	10.30	15.70	1.65	53.00
CON151	311252	7537847	358	-90	0	136	61	62	1	20.00	15.50	2.82	35.70
CON151	311252	7537847	358	-90	0	136	97	102	5	15.30	11.20	2.60	52.10
CON152	311224	7537801	358	-90	0	148	46	51	5	16.30	7.46	6.87	38.00
CON152	311224	7537801	358	-90	0	148	86	91	5	20.30	2.87	5.08	33.50
CON152	311224	7537801	358	-90	0	148	94	95	1	10.20	4.26	0.48	18.10
CON153	311204	7537751	358	-90	0	124	47	54	7	17.60	5.63	1.68	59.00
CON153	311204	7537751	358	-90	0	124	55	65	10	15.00	7.37	1.59	59.90
CON154	311407	7537454	361	-90	0	124	14	22	8	24.80	9.56	9.02	27.20
CON155	311400	7537549	359	-90	0	124	43	51	8	17.20	20.60	3.84	31.70
CON155	311400	7537549	359	-90	0	124	58	59	1	15.40	6.68	3.50	56.60
CON156	311298	7537751	358	-90	0	124	55	57	2	19.10	30.80	2.63	9.53
CON156	311298	7537751	358	-90	0	124	59	66	7	13.60	21.80	3.22	36.30
CON156	311298	7537751	358	-90	0	124	72	73	1	11.30	18.90	4.68	41.50
CON156	311298	7537751	358	-90	0	124	75	76	1	22.10	16.20	4.01	27.90
CON157	311357	7537598	359	-90	0	124	107	110	3	18.30	21.50	5.17	26.10
CON157	311357	7537598	359	-90	0	124	111	121	10	19.30	18.70	5.90	27.50
CON158	311299	7537547	360	-90	0	148	104	108	4	26.70	17.90	1.79	21.70
CON158	311299	7537547	360	-90	0	148	112	118	6	17.60	19.30	2.79	33.40
CON159	311350	7537399	363	-90	0	124	96	97	1	11.60	9.50	1.82	61.00
CON159	311350	7537399	363	-90	0	124	104	105	1	11.90	9.09	0.50	63.20



CON159	311350	7537399	363	-90	0	124	106	108	2	13.70	9.96	0.90	57.50
CON174	311120	7537513	362	-90	0	124	62	70	8	27.30	26.80	1.75	10.50
CON174	311120	7537513	362	-90	0	124	77	86	9	16.20	18.20	2.59	38.30
CON174	311120	7537513	362	-90	0	124	91	92	1	10.50	4.41	0.85	73.50
CON175	311512	7537518	362	-90	0	94	52	55	3	20.70	13.20	1.88	40.90
CON180	311174	7537503	363	-90	0	172	113	114	1	10.70	22.20	4.02	39.00
CON180	311174	7537503	363	-90	0	172	119	120	1	23.20	23.20	2.35	18.70
CON180	311174	7537503	363	-90	0	172	121	122	1	15.70	34.10	2.40	13.70
CON180	311174	7537503	363	-90	0	172	124	129	5	20.80	32.40	1.56	9.37
CON180	311174	7537503	363	-90	0	172	142	149	7	16.90	19.30	1.82	33.30
CON180	311174	7537503	363	-90	0	172	151	153	2	13.10	18.80	5.06	33.00
CON181	311004	7537494	363	-90	0	124	47	54	7	16.50	21.10	4.47	31.00
CON181	311004	7537494	363	-90	0	124	65	66	1	10.40	5.33	1.84	71.10
CON181	311004	7537494	363	-90	0	124	71	72	1	11.40	6.30	0.78	68.30
CON181	311004	7537494	363	-90	0	124	75	77	2	12.20	8.41	0.91	62.80
CON186	311280	7537600	363	-90	0	178	120	126	6	19.30	12.80	1.16	35.50
CON186	311280	7537600	363	-90	0	178	131	134	3	14.00	12.20	3.93	43.70
CON186	311280	7537600	363	-90	0	178	135	144	9	14.60	13.80	3.55	40.20
CON188	311399	7537510	363	-90	0	126	42	44	2	15.20	3.61	7.28	55.10
CON188	311399	7537510	363	-90	0	126	47	49	2	12.50	17.00	6.29	39.00
CON188	311399	7537510	363	-90	0	126	50	51	1	13.90	16.60	10.60	32.70
CON188	311399	7537510	363	-90	0	126	53	54	1	16.80	11.80	5.40	45.20
CON190	310907	7537480	363	-90	0	108	46	50	4	10.80	28.60	2.80	29.60
CON190	310907	7537480	363	-90	0	108	53	56	3	21.00	12.90	1.88	40.90
CON191	311400	7537710	363	-90	0	144	88	89	1	14.50	33.70	4.04	13.60
CON191	311400	7537710	363	-90	0	144	90	94	4	14.80	25.70	4.03	25.50
CON191	311400	7537710	363	-90	0	144	97	100	3	17.10	16.10	2.53	39.70
CON191	311400	7537710	363	-90	0	144	102	105	3	16.20	17.10	3.04	38.70
CON191	311400	7537710	363	-90	0	144	106	107	1	10.70	13.30	3.63	53.80
CON195	311293	7537913	363	-90	0	138	81	82	1	17.00	15.70	1.60	41.70
CON195	311293	7537913	363	-90	0	138	83	84	1	18.10	4.28	3.95	68.60
CON196	311401	7537918	363	-90	0	130	37	41	4	21.70	20.60	3.33	24.70
CON202	311302	7537275	363	-90	0	162	35	36	1	12.90	36.90	2.44	17.20
CON202	311302	7537275	363	-90	0	162	38	41	3	14.80	19.30	6.31	32.90
CON203	311205	7537398	363	-90	0	150	81	84	3	20.10	23.50	2.13	24.30
CON203	311205	7537398	363	-90	0	150	85	86	1	24.40	24.40	1.22	15.20
CON203	311205	7537398	363	-90	0	150	87	88	1	10.60	21.40	2.06	27.10
CON204	311176	7537355	363	-90	0	174	79	80	1	10.10	16.90	2.36	49.80
CON204	311176	7537355	363	-90	0	174	81	84	3	22.00	6.71	1.53	47.50
CON207	311402	7537416	363	-90	0	132	73	74	1	12.10	6.41	0.69	67.80
CON209	311002	7537404	363	-90	0	144	44	47	3	16.70	15.30	1.97	43.10
CON209	311002	7537404	363	-90	0	144	48	50	2	11.20	17.70	5.35	43.30
CON209	311002	7537404	363	-90	0	144	59	61	2	11.80	3.99	3.01	68.20
CON209	311002	7537404	363	-90	0	144	65	67	2	13.30	14.20	1.85	50.90
CON210	311112	7537404	363	-90	0	144	82	83	1	27.80	19.60	1.25	21.10



CON210	311112	7537404	363	-90	0	144	84	92	8	24.70	9.69	0.84	40.00
CON210	311112	7537404	363	-90	0	144	94	96	2	14.90	5.71	1.61	61.80
CON211	311320	7537507	363	-90	0	150	62	63	1	11.80	31.20	3.48	27.20
CON211	311320	7537507	363	-90	0	150	64	86	22	24.20	24.60	2.32	15.60
CON211	311320	7537507	363	-90	0	150	88	90	2	18.40	9.01	1.06	53.30
CON211	311320	7537507	363	-90	0	150	93	100	7	20.50	10.60	1.13	47.40
CON211	311320	7537507	363	-90	0	150	102	103	1	11.10	6.71	0.97	68.80
CON212	311425	7537608	363	-90	0	126	105	106	1	13.50	5.55	0.34	8.95
CON216	311090	7537600	363	-90	0	162	118	122	4	14.90	28.70	3.23	22.90
CON216	311090	7537600	363	-90	0	162	124	125	1	12.50	25.40	4.78	31.20
CON216	311090	7537600	363	-90	0	162	128	131	3	18.30	21.50	5.17	26.10
CON216	311090	7537600	363	-90	0	162	132	133	1	10.50	18.90	4.49	44.60
CON217	311110	7537717	363	-90	0	162	87	89	2	22.80	3.39	0.56	18.90
CON217	311110	7537717	363	-90	0	162	92	96	4	16.80	1.66	1.32	40.00
CON217	311110	7537717	363	-90	0	162	99	101	2	14.60	6.16	0.62	31.60
CON217	311110	7537717	363	-90	0	162	103	105	2	18.90	3.18	0.61	31.80
CON218	311177	7537708	363	-90	0	168	80	86	6	18.10	14.50	3.12	41.40
CON218	311177	7537708	363	-90	0	168	94	95	1	14.20	3.64	0.82	68.10
CON218	311177	7537708	363	-90	0	168	99	104	5	15.20	12.60	1.01	26.40
CON219	311331	7537708	363	-90	0	126	67	72	5	19.90	15.80	2.35	36.20
CON219	311331	7537708	363	-90	0	126	75	84	9	18.70	19.90	1.94	32.80
CON220	311059	7537723	363	-90	0	120	30	34	4	19.60	19.40	2.00	33.80
CON222	311096	7537800	363	-90	0	108	44	47	3	24.10	10.80	1.37	36.00
CON222	311096	7537800	363	-90	0	108	48	49	1	12.90	14.20	4.89	47.50
CON223	311169	7537801	363	-90	0	114	38	39	1	11.40	1.64	2.87	73.80
CON223	311169	7537801	363	-90	0	114	41	43	2	12.40	17.00	4.39	43.00
CON223	311169	7537801	363	-90	0	114	44	50	6	20.90	24.10	2.81	20.40
CON225	311200	7537970	363	-90	0	120	69	72	3	11.50	11.80	1.36	58.80
CON227	311029	7537554	363	-90	0	108	43	45	2	16.20	14.40	0.86	47.60
CON227	311029	7537554	363	-90	0	108	47	54	7	20.30	13.30	1.02	42.40
CON229	311150	7537550	363	-90	0	180	124	138	14	17.90	12.70	4.08	33.80
CON232	311254	7537448	363	-90	0	162	57	61	4	33.20	18.30	2.16	10.50
CON232	311254	7537448	363	-90	0	162	63	72	9	19.50	25.10	3.59	19.40
CON232	311254	7537448	363	-90	0	162	73	75	2	21.20	20.00	2.96	25.80
CON233	311144	7537457	363	-90	0	168	85	88	3	20.50	16.40	2.12	35.20
CON233	311144	7537457	363	-90	0	168	92	95	3	12.00	11.70	1.23	59.10
CON238	311037	7537304	363	-90	0	168	73	74	1	21.90	6.65	3.68	42.80
CON239	311049	7537450	363	-90	0	132	49	57	8	19.50	13.90	2.70	40.60
CON239	311049	7537450	363	-90	0	132	58	59	1	13.20	10.70	2.37	57.10
CON239	311049	7537450	363	-90	0	132	62	65	3	13.20	8.54	1.35	61.70
WWS102	311341	7536849	365	-90	0	106	35	38	3	14.50	18.90	1.12	44.60
WWS102	311341	7536849	365	-90	0	106	39	40	1	12.00	10.10	0.55	63.10
WWS102	311341	7536849	365	-90	0	106	41	42	1	11.60	8.94	0.94	64.10
WWS104	311328	7536896	365	-90	0	94	9	10	1	10.10	10.70	4.36	58.70
WWS105	311382	7536862	365	-90	0	118	2	7	5	19.00	16.90	8.07	28.00



WWS120	311433	7536951	363	-90	0	64	16	17	1	12.20	15.50	6.32	45.20
WWS120	311433	7536951	363	-90	0	64	21	22	1	12.40	14.80	7.65	43.20
WWS120	311433	7536951	363	-90	0	64	23	25	2	13.80	19.60	7.96	33.00
WWS120	311433	7536951	363	-90	0	64	26	27	1	11.30	9.31	8.11	53.40
WWS121	311545	7536846	362	-90	0	118	11	12	1	10.20	13.20	6.87	50.50
WWS121	311545	7536846	362	-90	0	118	13	20	7	18.00	17.10	5.35	34.00
WWS121	311545	7536846	362	-90	0	118	22	29	7	18.50	24.20	5.71	21.70