# **ACTIVITY REPORT**

For the period ending 30 September 2020



## **ODYSSEUS GAINS MOMENTUM – COSMOS UPSIDE EMERGING**

Western Areas ("WSA" or the "Company") (ASX: WSA) is pleased to provide the September Quarterly Activity report.

## SEPTEMBER QUARTER 2020 HIGHLIGHTS

- Odysseus twin declines commenced with first development cuts fired and underground rehabilitation and dewatering programs largely complete
- Maiden AM6 Probable Ore Reserve of 2.1Mt at 2.2% Ni for a total of 47,100 Ni tonnes, brings total reserves at Cosmos to 211,620 nickel tonnes, providing significant optionality to the Odysseus mine plan
- BioHeap demonstration leach pad construction commenced at Forrestania, targeting initial operation in the December quarter
- Mine production for the quarter was 4,147 nickel tonnes, impacted by re-sequencing of the Flying Fox mine schedule into lower grade zones and lower grade at Spotted Quoll
- Mill production of 3,756 nickel tonnes in concentrate with recoveries impacted by the lower average head grade
- Unit cash cost of nickel in concentrate increased to A\$4.46/lb due to reduced grades and lower ore production tonnages that increase fixed costs per tonne of ore mined and milled
- Nickel sales of 4,064 nickel tonnes in concentrate
- Positive cashflow from operations of A\$10.0m with cash at bank of A\$120.3m and no debt
- Cash plus nickel sales receivables and liquid assets of \$180.3m (Jun Q A\$190.6m)

Western Areas Managing Director, Mr Dan Lougher, said "Mining at the Odysseus project continues to gain momentum as we fired the first development cut to commence the twin declines towards the Odysseus orebody. Refurbishment of the hoist shaft infrastructure has been completed with shipping from South Africa expected in November, and the majority of the equipment delivered to the Cosmos site in December."

"The operating result at Forrestania was disappointing and reflects the maturity of the operation. As guided, variability in the operating results will be evident as we transition to include more lower grade areas from Flying Fox into the plan and the ability to move between different working areas becomes constrained. Looking ahead, maximising cash flow from the existing mining areas and acceleration of life extension projects will be the main focus at Forrestania" Mr Lougher said.

Construction and development activities for the long-life Odysseus mine reached a number of important milestones during the quarter. The new, twin Odysseus declines commenced with the underground rehabilitation and dewatering works essentially complete. Surface civil works for the hoisting shaft were finished and installation of the sub-brace concrete pad allowed for commencement of the shaft raisebore pilot hole. Refurbishment of the shaft infrastructure has been completed in South Africa with shipping to Australia scheduled for early November.

The Odysseus base case has been boosted by a maiden Ore Reserve estimate for the AM6 deposit, comprising 2.1Mt at 2.2% Ni for a total of 47,100 Ni tonnes. Inclusion of the AM6 material brings significant optionality to the Odysseus mine plan, and lifts the total Ore Reserves at Cosmos to 211,620 tonnes of nickel. Western Areas is one of the few independent nickel sulphide miners that can demonstrate a 10+ year mine life based on published Ore Reserves.

As advised on release of FY21 guidance, variations in production and unit costs are expected to occur across guarters as the Forrestania Operations increase production from lower grade areas of the Flying Fox mine. The Forrestania Operations produced 3,756 tonnes of nickel and sold 4,064 tonnes of nickel in concentrate to offtake customers. Production at Flying Fox was impacted by mine schedule re-sequencing, due to some seismicity in an isolated area, that required deferral of the higher grade T6 areas of the mine and increased ore being mined from lower grade zones in the upper area of the mine. Furthermore, Spotted Quoll nickel production was impacted by lower grades due to a pegmatite intrusive unit increasing dilution in the scheduled mining areas.

The nickel price has recently benefited from resilient stainless steel production rates and reduced availability of nickel pig iron feed stocks in China. Confirmation that nickel rich battery technology is expected to play a large part in the continued evolution of the battery packs for electric vehicles is also increasing market confidence in the long term outlook for nickel. The Company's average realised nickel price was higher, quarter on quarter, at A\$9.28/lb compared to A\$8.64/lb in the June quarter.



## PRODUCTION OVERVIEW

Itom	Unit		2019/2020		2020/2021
Item	Onit	Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr
Total Ore Mined	tonnes	144,932	142,056	160,858	137,280
Mined Grade	Ni %	4.0%	4.2%	3.6%	3.0%
Total Nickel Mined	tonnes	5,849	5,896	5,841	4,147
Ore Processed (Milling/Concentrator)	tonnes	143,409	142,200	151,302	148,801
Processed Grade	Ni %	4.2%	4.1%	3.8%	3.0%
Average Processing Recovery	%	89%	89%	89%	85%
Total Nickel in Concentrate	tonnes	5,399	5,154	5,114	3,756
Total Nickel Sold	tonnes	3,991	6,038	4,777	4,064
Contained Nickel in Stockpiles	tonnes	4,389	3,456	3,738	3,099
Cash Cost Ni in Concentrate (ex MREP)	A\$/lb	3.06	3.07	3.17	4.44
Total Cash Cost Ni Conc (inc. MREP)	A\$/lb	3.10	3.14	3.23	4.46
Total Cash Cost Ni Conc (inc. MREP)	US\$/lb	2.12	2.07	2.12	3.17
Exchange Rate	US\$/A\$	0.68	0.66	0.66	0.71
Realised Nickel Price (before payability)	A\$/lb	9.39	8.40	8.64	9.28

Western Areas is an Australian based nickel sulphide miner, supplying local and international smelter and refinery operators with high grade nickel concentrates. Its main production asset, the 100% owned Forrestania Nickel Project, is located 400km east of Perth in Western Australia. Western Areas is Australia's second largest independent sulphide nickel miner, producing approximately 18,000 to 20,000 nickel tonnes in concentrate per annum from its Flying Fox and Spotted Quoll mines - two of the highest grade nickel operations in the world.

The Company's key growth project is the long life Odysseus mine located at the Cosmos Nickel Operation. With a mine life in excess of ten years and expected low operating cost, the Odysseus mine will underpin the Company's nickel production well into the future.

The Company is an active explorer across its significant tenement holding at Forrestania, Cosmos and Western Gawler in Australia. The Company also holds a 19.9% intertest in Panoramic Resources Ltd, the owner of the Savanah Nickel mine in Western Australia, and exploration interests in Canada via a 10.6% holding in Grid Metals Corp (TSXV:GRDM). Additionally, the Company has exposure to the emerging lithium market via an exploration joint venture with Wesfarmers Chemicals Energy and Fertilizers (WES CEF) across Forrestania's northern tenements.

The Board remains focused on the core business of economic, long life nickel production, new nickel discoveries and generating returns to shareholders. It has put in place the cost structure and capabilities to prosper throughout the cycle by adopting prudent capital management and strict cost control. Its latest Company presentation can be found at https://www.westernareas.com.au/investor-centre/presentations.

#### The announcement was authorised for release by the MD/CEO and CFO. For further details, please contact:

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#### CORPORATE AND FINANCING

#### **CASHFLOW**

The Company balance sheet remains robust with cash at bank plus nickel sales receivables of A\$139.5m (Jun Q -A\$159.1m). Cash at bank, plus nickel sales receivables and liquid investments, total \$180.3m (Jun Q – A\$190.6m).

As planned, the September quarter included a significant quarter on quarter increase in capital invested across the Company's two operations, as well as an active exploration program. Construction and mine development at Odysseus stepped up, with activity across underground mine development, completion of the shaft head frame refurbishment in South Africa, shaft raisebore drilling and civil foundation works all progressing during the quarter. At Forrestania, underground capital development advanced at both Flying Fox and Spotted Quoll, noting the majority of the mine development expenditure works are scheduled to be completed in the first half of the current financial year.

Cash at bank at quarter end was A\$120.3m (Jun Q - A\$144.8m). The significant cashflow items for the quarter included:

- Operating cashflow of A\$10.0m impacted by lower sales tonnages delivered to customers compared to the previous quarter;
- Investment into Odysseus mine development and shaft haulage infrastructure construction of A\$16.2m;
- Sustaining mine development and capital expenditure at Forrestania of A\$13.1m; and
- Exploration expenditure of A\$4.3m.

#### **HEDGING**

When pricing is supportive, the Company manages nickel price and foreign exchange risk with a combination of shortterm quotation period (QP) hedging and a set limit of medium-term hedging. The policy allows the use of forward sales, bought options and collar style options:

- QP hedging is used to manage the risk of price fluctuations for nickel already shipped to offtake partners, where the nickel price is yet to be finalised; and
- Medium-term hedging is used to manage the risk of nickel price and foreign exchange fluctuations, with a maximum 25% of expected nickel sales per month hedged out for a period of 12 to 18 months.

Details of hedging in place at quarter end are as follows:

	Hedging Details – FY21										
Nickel Hedging	- Collar Options		US\$ Hedging – Collar Options								
Nickel Tonnes Hedged	600		US\$ Hedged	\$15,000,000							
Average Call	US\$15,900		Average Call	US\$0.730							
Average Put	US\$13,500		Average Put	US\$0.675							
Nickel Hedgi	ng – Forward										
Nickel Tonnes Hedged	300										
Average Rate	US\$14,020										

#### INVESTMENT IN PANORAMIC RESOURCES

During June 2020 the Company acquired a 19.9% interest in Panoramic Resources Limited ("Panoramic") for A\$28.6 million as a cornerstone investor into a larger Panoramic capital raising. As at 30 September 2020 the investment was valued at A\$40.8m. The investment continues to provide Western Areas strategic optionality and exposure to Panoramic's significant nickel, copper and cobalt resources.



## MINE SAFETY AND ENVIRONMENT

#### **SAFETY**

The Company's Lost Time Injury Frequency Rate (LTIFR) increased from 1.41 to 2.09 due to an LTI sustained at Cosmos in July and a March 2020 injury reclassification.

The Total Recordable Injury Frequency Rate (TRIFR) increased from 16.24 to 20.20, where TRIFR includes all recordable injuries which require medical assessment, medical treatment, restricted duties, or result in lost time across the Company. The Company is actively monitoring the increasing trend in TRIFR, noting it reflects a good reporting culture, of even minor injuries, and the increased scale of operations and construction activities across multiple sites.

Key health and safety management initiatives included, reviewing the safe resumption of activities and procedures that had been modified due to COVID-19 controls. As restrictions eased across Western Australia, site practices were reviewed and modified accordingly.

LTIFR	LTI free days
0.95	188
0.00	740
4.03	90
2.18	90
2.09	90
	0.95 0.00 4.03 <b>2.18</b>

<sup>\*</sup> OPS includes FNO, CNO and EXP,

#### Forrestania (FNO)

Externally facilitated training resumed onsite along with organised sport and controlled use of a modified gym. An extension to the existing gym facility was also largely completed, which will provide further options for healthy activities on site.

A second fire truck was purchased to improve FNO bushfire fighting capability and both site based fire trucks have undergone extensive mechanical servicing in preparation for the upcoming fire season.

The Department of Mines and Industry Regulation (DMIRS) completed an extensive Explosives Management Audit of the site, leading to some minor building modifications.



**FNO fire trucks** 

#### Cosmos (CNO)

Cosmos had one LTI, due to a crane rigging contractor being struck by a dislodged fly jib, while stowing the crane jib, after placement of a pump into a water management pond. The operator sustained a fractured wrist and ribs as a result of the incident.

The continued recruitment and training of the CNO Emergency Response Team is ongoing, a Certificate II Medical course was completed during the period.

<sup>\*</sup> WSA includes OPS, BioHeap and Corporate



#### **ENVIRONMENT**

Both sites had no reportable environmental incidents during the quarter and the environmental team completed all required compliance monitoring and reporting.

#### Forrestania (FNO)

The environmental team completed all required compliance monitoring including annual reporting to both DMIRS and the Department of Water and Environmental Regulation (DWER). In addition, the BioHeap project DWER Works Approval was received.

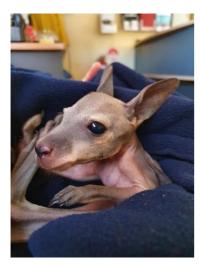
The environmental team were instrumental in saving injured and orphaned fauna at FNO via a collaborative effort between the FNO environmental team, a volunteer carer and the Kanyana Wildlife Rehabilitation Centre which resulted in an orphaned kangaroo joey and a small honeyeater being transferred to Kanyana for treatment before being released back into the wild.

## Cosmos (CNO)

The Kathleen Valley exploration drilling programme continued with approval and collaboration of the Tjiwarl people.

The Environmental Department attended the Nyunnga-Ku Women's Group - Community Closet where women's community concerns and developments within the Shire of Leonora were discussed.

An archaeological collaboration started between the Cosmos environmental team and the University of Notre Dame into the "Afghan Hut" structure located on a nearby WSA mining tenement, which is believed to have been used as a camel relay station in the late 19th century by Afghan cameleers.



Orphaned kangaroo joey



Afghan hut with Roger Bateman of the University of Notre Dame



## MINE AND MILL PRODUCTION STATISTICS AND CASH COSTS

Tonnes mined	Unit		2019/2020		2020/2021	
Tonnes minea	Unit	Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr	
Flying Fox						
Ore Mined	tonnes	60,081	63,501	69,398	44,359	
Grade	Ni%	4.5%	4.3%	3.4%	2.9%	
Flying Fox Nickel Mined	tonnes	2,712	2,754	2,343	1,269	
Spotted Quoll						
Ore Mined	Tonnes	84,851	78,555	91,460	92,921	
Grade	Ni%	3.7%	4.0%	3.8%	3.1%	
Spotted Quoll Nickel Mined	Tonnes	3,137	3,142	3,498	2,878	
Total Ore Mined	Tonnes	144,932	142,056	160,858	137,280	
Grade	Ni%	4.0%	4.2%	3.6%	3.0%	
Total Nickel Mined	Tonnes	5,849	5,896	5,841	4,147	

#### **FLYING FOX**

#### **Mine Production**

Production was 44,359 tonnes of ore at an average grade of 2.9% nickel for 1,269 nickel tonnes. Ore production was sourced predominately (67%) from long-hole stoping (LHS), with the remainder (33%) from ore drive development. Higher seismic activity in the lower T6 mining area necessitated a re-sequencing of mining activities. As a consequence, more longhole stope tonnes were mined from the lower grade 'old Flying Fox' orebody (1205 to 1185 levels).

T5 production was sourced from the 345 and 180 levels with commencement of the 160 level.

## **Mine Development**

Total jumbo development was 501m from the T5 and T6 mining areas. This included 24m of main decline development (completion of the Streeter Decline), 321m of capital development (200 to 150 levels), 6m of operating waste development (200 to 160 levels), 18m of paste-fill development (370 to 160 levels), and 132m of ore drive development (370 to 200 levels).

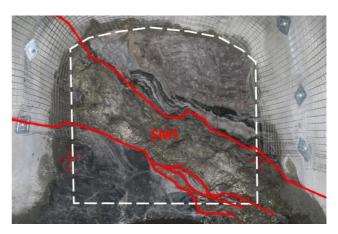
Floor benching and ground support rehabilitation of the 1070 level to access the T1N area commenced, with 204m of benching completed.

#### Infrastructure

The capital primary ventilation system and escape-way were extended by the establishment of the 195 to 155 return airway (RAW) long-hole rise and the ladderway raise-bore (1.1m diameter).



345 S3 south ore drive (5.0m W x 4.5m H) with a face grade of 4.1% Ni



345 S3 south ore drive (5.0m W x 4.5m H) with a face Grade 2.8%

#### **SPOTTED QUOLL**

#### **Mine Production**

Spotted Quoll production comprised 92,921 tonnes of ore at an average grade of 3.1% nickel for 2,878 nickel tonnes. Ore production was sourced predominately from LHS (60%) with the remainder (40%) from ore drive development. Spotted Quoll nickel production was impacted by lower grades due to a pegmatite intrusive unit increasing dilution in the current mining area.

The 'twin-boom area' (TBA) had ongoing production from the 595, 580, 565 and 550 levels and started the 535 level, late in the quarter. The 'single-boom area' (SBA) completed the 812 level, with continued production from between the 852 to 770 levels (eight ore drives) and commenced the 747 level, late in the quarter.

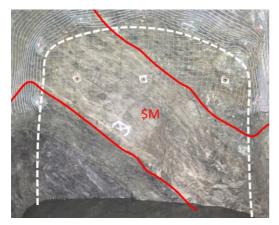
#### **Mine Development**

Total jumbo development was 1,108m, which included 134m of capital main decline, 278m of lateral capital access and 240m of operating waste and 137m of paste-fill to facilitate slot drilling. There was a total of 456m of ore drive development which included 360m between the 'Stage 2' 475 and 415 levels and 96m between the SBA 727 and 717 levels respectively.

#### Infrastructure

The capital primary ventilation system was advanced to the 420 Level with the successful opening of the 450 to 420 return airway (RAW) long-hole rise.

Service bore holes were also extended to the 450 to 420 level, which included the installation of 33m paste casing and 33m rising main casing.



717 ore drive (3.5m W x 3.5m H) with a face grade of 5.0% Ni



445 ore drive (4.5m W x 4.5m H) with a face grade of 5.5% Ni



#### COSMIC BOY NICKEL CONCENTRATOR

Tonnes milled	⊥ Unit		2020/2021		
Torines mineu	Offic	Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr
Total Milled Ore	tonnes	143,409	142,200	151,302	148,801
Grade	%	4.2%	4.1%	3.8%	3.0%
Ave. Recovery	%	89%	89%	89%	85%
Nickel in Concentrate Produced (i)	tonnes	5,399	5,154	5,114	3,756
Nickel in Concentrate Sold	tonnes	3,991	6,038	4,777	4,064

Includes MREP Nickel tonnes produced. (i)

The Cosmic Boy Concentrator processed 148,801 tonnes of ore at an average grade of 3.0% nickel for a total of 26,805 tonnes of concentrate grading 14.0% nickel, resulting in 3,756 nickel tonnes produced at a recovery of 85% and an average concentrator availability of 97%. The lower quarter on quarter recovery is a result of the lower head grade in conjunction with some higher MgO ore from the Flying Fox mine.

Maintenance work included a major planned 70-hour shutdown to rotate the ball mill pinion, change out the ball mill motor, replace the ball mill trunnion cap, change out rougher flotation circuit stator and rotor, replace scavenger flotation cell dart valves, repair tailing thickener and replace the cyclone feed pipes and mill feed weightometer frame.

A total of 28,996 tonnes of concentrate was delivered for sale during the quarter, containing 4,064 nickel tonnes, including the Mill Recovery Enhancement Project (MREP) product.

Other unit sales costs for the quarter were royalties at A\$0.28/lb and concentrate transport of A\$0.58/lb of nickel in concentrate delivered to customers.

## **Stockpiles**

Ore stockpiles at the end of the quarter totalled 78,615 tonnes of ore at 3.4% nickel for 2,687 nickel tonnes, representing one and half months of concentrator feed. The concentrate stockpile was 2,575 tonnes at an average grade of 15.9% nickel, containing 409 nickel tonnes.

Chaelmilea	Heit		2019/2020							
Stockpiles	Unit	Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr					
Ore	tonnes	77,426	80,581	90,136	78,615					
Grade	%	3.5%	3.6%	3.3%	3.4%					
Concentrate	tonnes	11,146	3,668	4,987	2,575					
Grade	%	14.8%	15.4%	15.2%	15.9%					
Contained Nickel in Stockpiles	tonnes	4,389	3,456	3,738	3,096					



#### **Cash Costs**

Financial Statistics	l lm:4		2020/2021		
Financial Statistics	Unit	Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr
Group Production Cost/lb					
Mining Cost (*)	A\$/lb	2.28	2.25	2.34	3.24
Haulage	A\$/lb	0.06	0.06	0.07	0.08
Milling	A\$/lb	0.53	0.55	0.53	0.83
Admin	A\$/lb	0.21	0.22	0.23	0.29
By Product Credits	A\$/lb	(0.02)	(0.01)	-	-
Flotation Cash Cost Ni in Con (***)	A\$/lb	3.06	3.07	3.17	4.44
Total Cash Cost Ni in Con (***) incl MREP	A\$/lb	3.10	3.14	3.23	4.46
Cash Cost Ni in Con/lb (***)	US\$/lb(**)	2.12	2.07	2.12	3.17
Exchange Rate US\$ / A\$		0.68	0.66	0.66	0.71

<sup>(\*)</sup> Mining Costs are net of deferred waste costs and inventory stockpile movements.

Note: Grade and recovery estimates are subject to change until the final assay data are received.

The September quarter flotation cash cost of nickel per pound was A\$4.44/lb. The total cash cost of production for nickel in concentrate including MREP (excluding smelting/refining charges, concentrate logistics and royalties) was A\$4.46/lb (US\$3.17/lb) for the quarter.

The quarter on quarter variance in unit cost of production was primarily due to lower grade ore being mined and milled from Flying Fox. The lower feed grade also results in a lower average recovery from the concentrator. Furthermore, lower ore production rates result in a higher average cost per ore tonne mined, as the fixed costs of the mine are spread over a reduced production tonnage.

At Spotted Quoll, lower grade ore reported from the lower stage 2 ore drive areas due to a pegmatite intrusive unit being encountered in the primary ore drive. Ore drive tonnes accounted for 40% of the total ore that was mined from Sotted Quoll during the quarter.

<sup>(\*\*)</sup> US\$ FX for Relevant Quarter is RBA average daily rate (Sep Qtr = A\$1:US\$0.71)

<sup>(\*\*\*)</sup> Payable terms are not disclosed due to confidentiality conditions of the offtake agreements. Cash costs exclude royalties and concentrate logistics costs.



## FORRESTANIA MINERAL RESOURCES AND ORE RESERVES

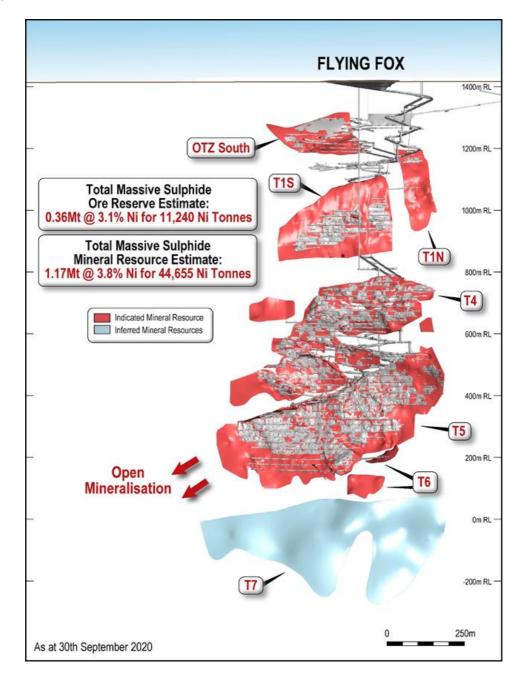
A full summary of the Company's Mineral Resource and Ore Reserve estimates is included at the end of this report.

### **FLYING FOX**

No additional resource extension drilling was completed during the quarter.

The Flying Fox Massive Sulphide Ni Mineral Resource now stands at 1.17Mt at a grade of 3.8% Ni for 44,655 nickel tonnes.

The Flying Fox Massive Sulphide Ore Reserve now stands at 0.36Mt of ore at a grade of 3.1% Ni for 11,240 nickel tonnes.



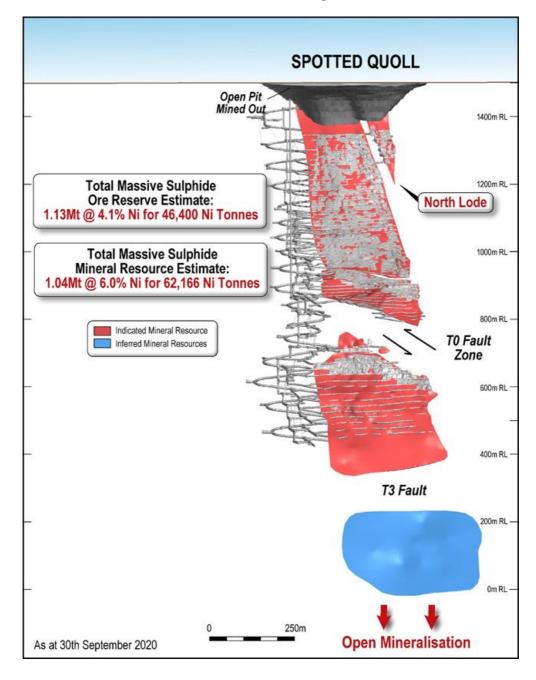


#### **SPOTTED QUOLL**

No underground resource extension drilling took place during the quarter.

The Spotted Quoll Mineral Resource now stands at 1.04Mt at a grade of 6.0% Ni for 62,166 nickel tonnes.

The Spotted Quoll **Ore Reserve** now stands at **1.13Mt of ore at a grade of 4.1% Ni for 46,400 nickel tonnes**.





### GROWTH PROJECTS

#### **COSMOS OPERATIONS**

## **Odysseus Mine Development**

#### Surface Infrastructure

The Yakabindie pipeline contractor mobilised late in the quarter to connect a further two raw water boreholes (77P and 32P) to the existing borehole (72P) network. This is the raw water supply to the site, including feed for the RO plants. The pipeline is expected to be completed in November.

Near term and long term power requirements for the Cosmos site are being evaluated, with the view that any long term power generation solution will involve a significant component of sustainable energy, potentially in the form of solar and wind generation. Current power is supplied via a series of diesel generators.

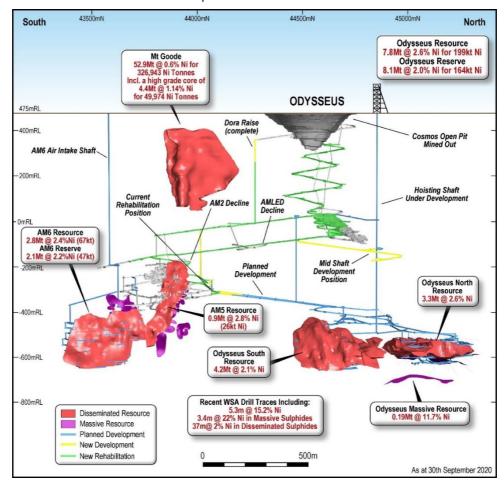
#### Underground

Ground-support rehabilitation totalled 1,744m, including 221m in the AMLED decline, 508m in the AM2 decline and 1,015m of associated lateral capital development. The planned rehabilitation is now materially complete with some lower priority areas to be finished (total 250m).

The first cut in the Odysseus decline was fired on 29 August with a total of 130m advanced for the quarter. The total jumbo lateral development of 464m also included 27m in the parallel Odysseus return airway drive (RAD), 265m in the mid-shaft access and 42m for other lateral development (stockpiles, etc).

The raise-bore contractor completed the underground southern primary ventilation return air-way (RAW) raise-bore shaft (203m at 5.0m diameter), which has extended the primary ventilation circuit to a depth of 750m below surface. Set-up for the 9675 to 9640 RAW raise-bore (33m at 3.0m diameter) also commenced by quarter end.

The HV electrical network was extended to the top of the AM2 decline with the addition of a 2MVA sub-station.





#### **Hoisting Shaft Project**

The ongoing process of converting the shaft design to 'Issue for Construction' (IFC) status continued for the shaft and related infrastructure.

The civil work package was awarded and the construction of the shaft sub-brace concrete works in the box-cut completed. The raise-bore contractor mobilised to site and collared the pilot hole of the fresh air intake/haulage shaft on 11 September and by the end of the month had drilled 203m (total 630m), with 30mm deviation (tolerance 300mm from centre) using the specialised rotary vertical drilling system (RVDS) installed once fresh rock was encountered (40m below surface RL).

The bulk earthworks program and installation of the contractor office complex commenced and were ongoing at quarter end.





Raise bore machine set-up in box-cut

#### South Africa Based Engineering Works

- **Mechanical:** The mechanical refurbishment of the rock winder by FLS was completed and preparation of the components for shipment commenced, with the rope attachments tested in accordance with Australian Standards.
- Electrical control systems: All the new components for the winder were installed in the control system by Winder
  Controls to meet Australian Standards with the build and fit out of the electrical houses completed and preparation
  for shipping commenced.
- **Structural:** The headframe refurbishment, modifications and painting were completed. The winder house and overhead crane refurbishment and packing for transport was nearing completion.
- **Shipping:** Packing and storage of cargo to meet the planned shipping date of early November continued. The logistics contractor is well advanced in securing a vessel and conducted required inspections and surveys to ensure work quality and to verify Australian requirements are met.

Cargo arrival in Henderson port is expected in late November with transport to the Cosmos lay-down area before the end of December quarter.



Winder drum shaft packed and ready for transport





Brake calipers being positioned for packing

First 12N cargo arriving at Richards Bay 11th September

#### AM6 MINERAL RESOURCE AND ORE RESERVE ESTIMATION

A pre-feasibility study (PFS) was completed for the AM6 deposit, confirming its suitability to be developed as an additional mining area located directly adjacent to the main Odysseus mine.

The AM6 mineral resource was remodelled and re estimated during the study and now stands at 2.8Mt of ore at a grade of 2.4% Ni for 67,362 nickel tonnes, which represents a 26% increase. The relevant Table 1 and further technical details can be found in the news release dated 2 September 2020.

The maiden AM6 Probable Ore Reserve is 2.1Mt of ore at a grade of 2.2%Ni for 47,100 nickel tonnes. A geological and metallurgical diamond drilling program will commence during the next quarter, which will also be used for further metallurgical and geotechnical optimisations.

A feasibility study is planned to commence in the second half of the year. In addition, optimisation studies into the combination of tonnages from AM6 and Odysseus orebodies have commenced.

Due to its proximity, the AM5 resource was also remodelled which has resulted in larger volumes of disseminated nickel sulphides at a lower grade, resulting in an increase in contained Ni metal of 34% when compared to the previous resource estimate.

The AM5 mineral resource now stands at 0.9Mt of ore at a grade of 2.8% Ni for 25,717 nickel tonnes.

#### FORRESTANIA OPERATIONS

## Mill Recovery Enhancement Project (MREP)

MREP optimisation work continued during the quarter as summarised below:

- High pressure compressors introduced last quarter continued to mitigate blockages of leach tank aeration spargers;
- The oxidation enhancement project (HyperJet Trial) commenced in September to increase the dissolved oxygen in the first part of the leach circuit and scrub nickel mineral surfaces to improve leaching rates, with installation, operator training and baseline measurements completed. Initially compressed air was used, which was then upgraded with oxygen supply. Two different size units are being trialled to determine which provides the better results: and
- Further modifications in the leach circuit have been undertaken to install tank liquid agitators (TLA) which have successfully reduced the excess froth in the leach tanks, and increased the slurry volume and hence residence time.



HyperJet installation

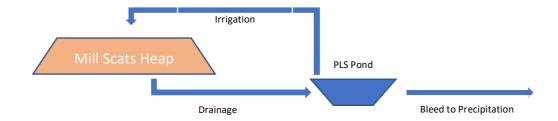


## Mill Scats Heap Leach Project (MSP)

The earthworks package for the MSP was awarded and mobilisation to site occurred in the last week of the guarter. The scats demonstration heap leach is expected to be in operational by the end of the December quarter. After the heap leach process is demonstrated to be successful, a larger facility is planned to treat the remainder of the stockpiled mill scats, which is in the order of 285k tonnes grading ~1.5% nickel.

The demonstration phase of the project consists of:

- 20,000 tonnes mill scats, that have been inoculated with BioHeap™ bacteria.
- Stacked to a height of 8m.
- A pumping station that will supply acidic solution to the top of the heap for irrigation.
- Pregnant liquor solution (PLS) will be collected at the base of the heap and directed to a fully lined collection pond, recirculating to the top of the heap to continue leaching.
- A bleed stream of PLS will be pumped to the MREP facility where it will be precipitated as a high-grade nickel sulphide.





Heap leach pad construction

## **Mining Development Projects**

Mining studies are currently being undertaken for the underground development potential of the New Morning Daybreak (NMDB) and the Diggers South projects. The first priority will be given to the NMDB project as it provides early potential nickel tonnes.

A pre-feasibility study for the NMDB was commenced during the quarter, evaluating the potential for an underground mine with geotechnical and hydrological studies ongoing.



## **EXPLORATION**

#### **OVERVIEW**

The Company is strongly committed to systematically exploring the Western Gawler in South Australia towards its aim of unlocking the region's potential to host significant accumulations of nickel and copper bearing sulphides. The Sahara prospect remained the key focus during the guarter, with additional diamond holes completed, along with the execution of a regionally extensive Fixed Loop electromagnetic survey.

At Cosmos, exploration continued within the strategically important AM6 to Penelope corridor, with one additional drill hole underway testing for accumulations of high-tenor nickel sulphides. At Kathleen Valley, the Company completed a targeted reverse circulation and diamond drilling program, testing several high-quality structural gold targets.

At Forrestania, the Company successfully completed a 22.9km series of 2D seismic lines immediately north of the Spotted Quoll Mine, with results from this survey to aid exploration targeting throughout the remainder of FY21.

The Company formed a strategic partnership with Metal Hawk Limited, executing a Farm-In and Joint Venture agreement across three project areas (Emu Lake, Kanowna East and Fraser South), considered highly prospective for base metals.

#### COSMOS

The Company has identified a 2.5km corridor extending between Prospero-Tapinos and Alec Mairs that is of notable exploration significance, with historic drilling intersecting both low-grade disseminated (Mt Goode style) and higher grade, basal-contact-proximal (Alec Mairs style) nickel sulphide mineralisation. The corridor extending south from AM6 towards Penelope represents a significant opportunity to identify and delineate additional nickel sulphide accumulations within proximity to planned underground infrastructure.

#### **Penelope**

During the quarter, one drill hole was designed to target the 300m wide corridor extending from Penelope North towards AM6. One incomplete hole failed to reach target (WCD034W2), with a subsequent wedge (WCD034W2W1) currently in progress (for a total of 959.8m drilled). The hole is projected to be completed early in the December quarter. The target style of mineralisation within this area is predominantly disseminated sulphides, with localised potential for narrow massive sulphide accumulations.

Logging is underway and samples from the upper portion of drill hole WCD034W2W1 have been submitted for assay. Observations from geological logging are of particular interest within this drill hole, with the top 32m of the high-tenor disseminated sulphide zone (from 1312.5 – 1344.5m) noting between 2 – 6% (disseminated) sulphide, hosted within meso to accumulate ultramafic rocks. Assay results are pending.

#### Kathleen Valley (Au)

The Company recently acquired four mining tenements from Ramelius Resources Limited (M36/365, M36/375, M36/376 and M36/441), expanding its lease holding at the Cosmos Nickel Operations to a contiguous tenement package of 102km<sup>2</sup>. The tenure is positioned within the heart of the historic Kathleen Valley Gold mining district and located 8km north of the Cosmos Nickel Mine. The most recent gold mining and production at Kathleen Valley was completed by Ramelius in September 2016, resulting in a total of 65,244 ounces of gold mined averaging 3.36g/t from numerous surface operations, including Yellow Aster Deeps, Yellow Aster North, Nil Desperandum and Mossbecker pits (Ramelius Resources, 2017 Annual Report).

Planning and targeting activities over the June quarter identified several near-mine structural gold targets, predominantly along strike from and beneath existing open pit mining activity. Prospective targets were identified initially within the Main Road structural corridor with additional targets identified associated with the Jones Creek Conglomerate at Mossbecker, Nil Desperandum and Yellow Aster.

During the September quarter, the Company completed a targeted reverse circulation (RC) and focused diamond drill hole program across several targets at Kathleen Valley. In total, 43 RC holes were completed (for 6194.1m), with an additional five diamond holes completed (for 904.1m).

Significant assay results are tabulated below, with results from several diamond holes still pending. Several particularly encouraging results were returned from Main Road, with KVRC0047 returning 3m @ 15.0 g/t (from 147m) including 1m @ 39 g/t (from 148m) hosted within sheared, talc-rich, chlorite-altered ultramafic, proximal to a sheared and faulted mafic footwall contact.

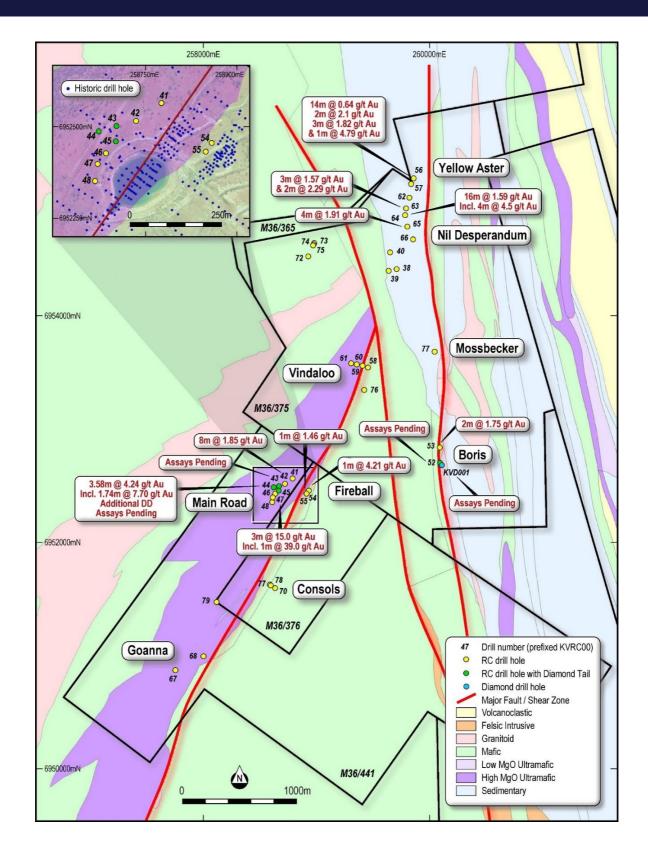
**ACTIVITY REPORT** For the period ending 30 September 2020



Significant intervals of patchy to locally strong chlorite - sericite - silica alteration, with accompanying variable concentrations of arsenopyrite - pyrite sulphides (2-10%) hosted within conglomerate (Jones Creek) were observed within diamond core portions of KVRC052 and KVD001. Assay results are pending for these holes.

	Significant Exploration Results – Kathleen Valley (Au) September Quarter 2020											
HOLE ID	Prospect	Easting	Northing	RL	ЕОН	Туре	Dip	Azi	Width (m)	Au (g/t)	From (m)	Comments
KVRC0042	Main Road	258722.8	6952517.8	491.7	210	RC	-59	119	8.00	1.85	157	
KVRC0043	Main Road	258670.4	6952500.2	491.4	253 RCD -55		-55	120				DD Assays Pending
KVRC0044	Main Road	258622.7	6952487.3	490.8	319.4	RCD	-62	118	3.58	4.24	237	
					ncluding	1.74	7.70	238.84	Additional DD Assays Pending			
KVRC0045	Main Road	258668.5	6952459	491.7	198.6	RCD	-50	120	1	1.41	14	
								and	1.15	1.84	131	
KVRC0047	Main Road	258618.2	6952369.8	491.1	198	RC	-58	122	3	15.0	147	
							lr	ncluding	1	39	148	
KVRC0048	Main Road	258612.8	6952352.1	491.1	154	RC	-63	123	2	1.02	127	
								and	2	2.24	132	
KVRC0049	Mossbecker	260108.1	6952694.7	498.7	208	RC	-60	52	2	1.17	92	
KVRC0052	Mossbecker	260100.8	6952689.6	499.1	249.7	RCD	-53	111				DD Assays Pending
KVRC0053	Boris	260090.3	6952834.4	498.4	212	RC	-85	5	2	1.75	189	
KVRC0054	Fireball	258930.2	6952456	493.5	80	RC	-60	125	1	4.21	54	
KVRC0055	Fireball	258914.7	6952433	493.5	60	RC	-60	125	1	1.46	44	
KVRC0056	Yellow Aster	259857.4	6955213.3	505.3	240	RC	-80	75	14	0.64	25	
								and	2	2.1	88	
								and	3	1.82	136	
								and	1	4.79	177	
KVRC0063	Yellow Aster	259790.1	6954951.2	504.8	230	RC	-60	75	3	1.57	125	
	and 2 2.29 181											
KVRC0064	Yellow Aster	259783	6954887.8	504	240	RC	-68	75	16	1.59	116	4m Composite
	including 4 4.5 116										4m Composite	
KVRC0065	Yellow Aster	259801.4	6954788.4	503.3	226	RC	-71	73	4	1.91	100	4m Composite
KVD001	Boris	260103	6952694	499	266.5	DD	-52	150				DD Assays Pending





#### **FORRESTANIA**

The key focus at Forrestania throughout the quarter centred on planning for and execution of a series of 2D seismic lines at Spotted Quoll. Additionally, advanced planning continued in support of several geophysical and drilling programs scheduled for commencement into the December quarter at the Parker Dome and Seagull projects.



#### **Spotted Quoll North Seismic Survey**

The Company has a strong belief that the Western Ultramafic Corridor at Forrestania, hosting the producing hightenor nickel mines of Spotted Quoll and Flying Fox, together with the inventory of the New Morning resource, continues to represent a significant exploration opportunity for the discovery of additional nickel sulphide mineralisation.

Throughout 2019 and into 2020, the Company engaged the services of HiSeis Pty Ltd to complete a study designed to identify the applicability of modern seismic to inform future exploration across the Western Ultramafic Belt, with efforts centred on the area immediately surrounding and extending north of the Spotted Quoll Mine.

The study identified that key lithological host unit contacts (which are interpreted to control the location of nickel sulphide mineralisation at Spotted Quoll), coupled with late-stage (post mineralisation) offset faults, display sufficient acoustic impedance contrast, and highlight the potential for these features to be imaged by 2D seismic methods.

Encouraged by these findings, the Company completed a 2D seismic survey incorporating three survey lines for a total of 22.9 line kms. The survey comprised two east-west lines (9.5km and 5.8km lengths) located just north of Spotted Quoll Mine, spaced 400m apart, together with a third tie-line (7.6km length) running north-south.

Results and interpretations from this survey are expected in the December quarter. Successful delineation and imaging of these key lithological contacts and mineralisation offset faults will provide valuable data to aid ongoing targeting and exploration efforts north of the Spotted Quoll Mine.



Vibroseis Truck in Action at Spotted Quoll

#### Seagull

Located within the Eastern Ultramafic Belt, approximately 3km north of the previously mined Cosmic Boy deposit, the Seagull prospect has been the focus of numerous historical exploration drilling programs.

A geological reinterpretation in late 2019 identified the potential for extensions to the mineralised system downplunge to the north. The mineralisation setting at Seagull is interpreted to be related to a north-west plunging antiformal feature, hosted in ultramafic units with mineralisation located within the hinge and along the eastern contact with a banded iron formation.

Drilling in early 2020 was successful in returning several significant nickel sulphide intersections at Seagull (including 4.35m @ 2.06% Ni from SD047W1). A follow-up drill program is scheduled to commence in the December quarter, designed to further test the plunge continuity of mineralisation towards the north and west.



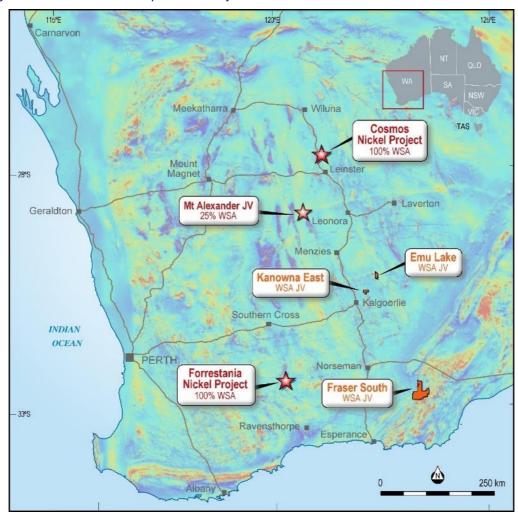
#### Metal Hawk Farm-in and Joint Venture

During the September quarter, the Company finalised and executed a Farm-in and Joint Venture agreement with Metal Hawk Ltd over a series of tenements, across both the Eastern Goldfields and within the Albany – Fraser province, which are considered highly prospective for base metal (nickel - copper) sulphides and PGEs.

The Farm-in and Joint Venture incorporates three project areas at Kanowna East (including tenure extending to within 12km of the Silver Swan / Black Swan nickel mine), Emu Lake (incorporating tenure 10km along strike from the high-tenor Binti nickel prospect) and Fraser South, incorporating a portfolio of greenfield tenements interpreted to be positioned over the southern structural extension of the Fraser Zone component of the broader Albany – Fraser Orogen.

The Company may earn into all non-gold metal rights at Emu Lake and Kanowna East, and all metals rights at Fraser South over two stages:

- Stage 1: \$3 million spend over 3 years for a 51% interest; and
- Stage 2: A further \$4 million spend over 2 years for a total 75% interest.



Metal Hawk Joint Venture project locations



## **WESTERN GAWLER (SOUTH AUSTRALIA)**

The Company is highly encouraged by the intersection of significant widths of nickel and copper-bearing sulphides at the Sahara prospect from its maiden diamond drill hole completed within the Iluka Farm-In and Joint Venture Project (WSA earning 75%).

At the Company's 100% held Mystic project, further elevated nickel-oxide assay results were returned. Both projects remained the central exploration focus through the September quarter.

## Iluka Farm-in and Joint Venture (WSA earning up to 75%) EL 5452, EL 5675, EL 5878, EL 5879 and EL 6251.

Momentum built into the September guarter with diamond drilling continuing within the Iluka Farm-in and Joint Venture. A total of five diamond drill holes were completed for 1,943m, testing targets at the Sahara, F1-5 and Splendour prospects.

Additionally, the Company completed a Fixed Loop electromagnetic (FLEM) survey across the Sahara prospect to aid a second phase of planned drill targeting.

## Sahara Geology and Drilling Update

A total of two additional diamond drill holes were completed in the September quarter (20WGDD0006 and 20WGDD0007), with assay results from all three Sahara drill holes (including 20WGDD0005 completed in the June quarter) now returned. A summary of significant results is included below.

Targeting a coincident magnetic high and electromagnetic (EM) conductor, drill hole 20WGDD0005, as reported in the previous quarter, intersected a thick metagabbro-pyroxenite intrusive body, grading to leucogabbro on the upper and lower margins. The western margin of the metagabbro intrusive is defined by a contact with moderately sheared metasedimentary rocks.

Baseline disseminated sulphides (>1%) were observed over a mostly continuous interval of 250m down-hole, with an upper disseminated zone returning an interval of 104.42m @ 0.21% Ni, 0.12% Cu (from 145.65m).

Punctuated throughout this broad disseminated zone are a series of heavily disseminated (typically 5 – 15%) sulphide grading to breccia textured and locally semi-massive to massive sulphides. Sulphides are noted to be predominantly pyrrhotite, with minor pentlandite and chalcopyrite.

Significant grades from these zones included:

- 0.3m @ 1.03% Ni, 0.04% Cu, 709ppm Co (from 197.8m),
- 0.24m @ 1.24% Ni, 0.09% Cu, 971ppm Co (from 248.26m), and
- 0.10m @ 1.38% Ni, 0.08% Cu, 1130ppm Co (from 340.4m)

Encouraged by the results from drill hole 20WGDD0005, two additional holes were completed testing the extent of mineralisation and the host intrusive body down-dip and to the east. 20WGDD0006 targeted a down hole EM (DHEM) conductor (completed within 20WGDD0005). A zone of disseminated to heavily disseminated sulphides was intersected over a continuous interval of 165m downhole, with the upper zone grading 54.53m @ 0.2%Ni and 0.13% Cu (from 159.0m). Within the disseminated interval, two zones of elevated grade associated with heavily disseminated to matrix sulphides returned 5.58m @ 0.45% Ni and 0.25% Cu (from 193.52m) and 5.93m @ 0.36% Ni and 0.18% Cu (from 207.6m). The mineralisation style observed within 20WGDD0006 is consistent with that observed within the previous drill hole, where higher-grading zones are associated with locally remobilised sulphide breccia zones and heavily disseminated / blebby sulphide aggregates in a gabbro-norite host unit.

Drill hole 20WGDD0007 was designed to test the lower limits of the DHEM plate generated from 20WGDD0005. Unlike the two preceding holes, an upper zone of disseminated sulphides was not encountered, with the first zone of sulphides identified below 300m (downhole). The most significant interval within drill hole 20WGDD0007 returned 6m @ 0.25% Ni and 1,868 ppm Cu (from 509m), including a narrow zone with elevated nickel values of 0.1m @ 1.97% Ni, 0.20% Cu associated with a structurally controlled, sub-vertical breccia sulphide zone.

Early geological observation and interpretations from the first three diamond holes completed at Sahara suggests that the intrusive rocks and associated extensive accumulation of disseminated sulphides (and localised concentrations of semi-massive sulphides) form part of an elongate chonolith intrusive system, similar to intrusive bodies hosting or proximal to known nickel-copper-PGE systems including the Eagle / Eagle East Ni-Cu system (Michigan, USA) and Voisey's Bay (Labrador, Canada).



The Company remains highly encouraged by this first phase of drilling at Sahara, with a second phase of drilling planned. Future drilling will be guided by both downhole and regional surface electromagnetic surveys, coupled with ongoing detailed geological logging designed to establish the direction / plunge of mineralisation and vector towards sites of thicker accumulations of nickel and copper bearing sulphides.

#### Sahara Geophysical Update

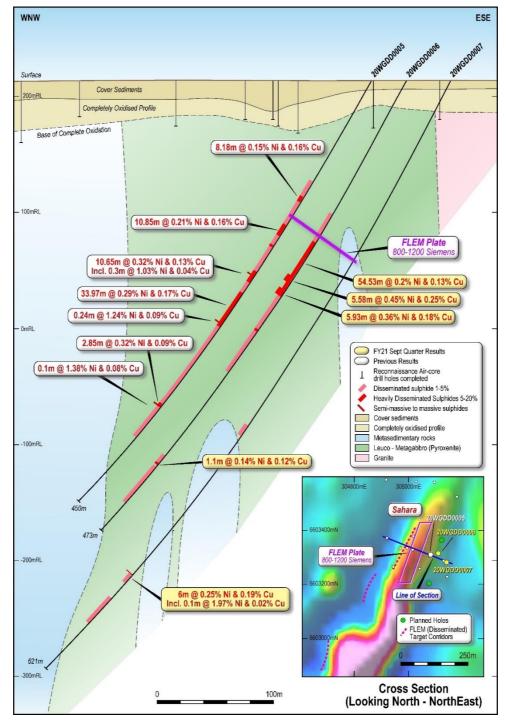
Immediately following this first phase of drilling at Sahara, a Fixed Loop electromagnetic survey (FLEM) program was undertaken and completed, comprising a total of six loops covering 5.7 km strike-length to the north-east and southwest of Sahara. The survey was designed to interrogate the top 400 - 500m from surface, to further refine the conductive footprint immediately surrounding Sahara and search for additional conductive responses along strike. Results and interpretations from this survey were received late in the September quarter.

The survey successfully confirmed the previously identified Moving Loop electromagnetic (MLEM) anomaly, with a moderate EM response (800-1200 Siemens). Notably, the conductor identified from this new FLEM survey extended over 250m along strike (compared to 80m from the MLEM response) with a subtle southerly plunge noted. Drilling to test the southern extensions of this 250m plate will commence in early October.

South of Sahara, the FLEM survey also noted two zones of electromagnetic 'current channelling', potentially indicative of more conductive (disseminated to heavily disseminated) sulphides. These responses are broadly coincident and trend roughly subparallel to the Sahara magnetic unit to the south, providing further support to the possibility that the mineralised system may be building in intensity towards the south.

			Ex	ploration	Results	– Saha	ra Sept	Quarter 202	20				
HOLE ID	Easting	Northing	RL	ЕОН	Туре	Dip	Azi	Width (m)	Ni %	Cu (ppm)	Pt + Pd (ppb)	Co (ppm)	From (m)
20WGDD000 5	305078	6603313	213	450.3	DD	-60	290	8.18	0.15	1580	27	149	112.57
								104.42	0.21	1225	31	163	145.65
						ir	cluding	10.85	0.21	1631	17	162	145.65
						also ir	cluding	10.65	0.32	1336	30	223	193.85
						ir	cluding	0.30	1.03	452	60	709	197.80
						also ir	cluding	33.97	0.29	1661	61	214	216.10
	including 0.24 1.24 919 80 971									971	248.26		
	2.85 0.32 906 22 266									266	337.65		
						ir	cluding	0.10	1.38	848	112	1130	340.40
20WGDD000 6	305111	6603315	215	472.8	DD	-60	290	54.53	0.20	1268	28	136	159.00
						ir	cluding	5.58	0.45	2506	93	247	193.52
							and	1.00	0.73	570	108	410	197.80
						ir	cluding	5.93	0.36	1819	35	208	207.60
							and	0.30	1.06	518	98	536	211.13
			•				_	1.10	0.14	1223	11	95	394.80
20WGDD000 7	305140	6603282	215	621.4	DD	-60	290	1.41	0.04	1309	0	45	490.20
								6.00	0.25	1868	85	204	509.00
			•			ir	cluding	0.10	1.97	209	323	1090	509.55



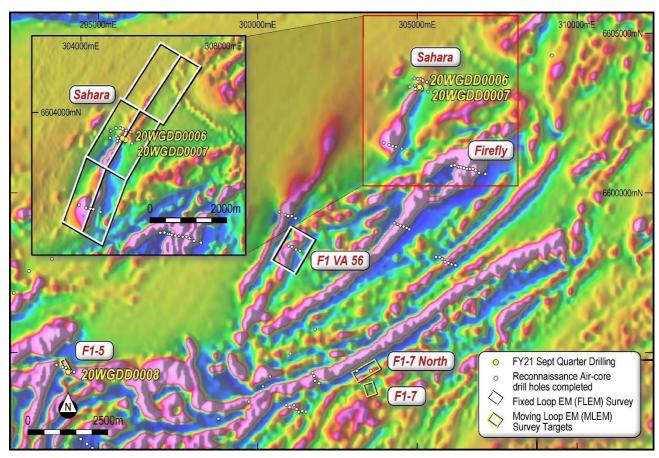


### **Regional Targets**

Following the completion of the initial three drillholes at Sahara, and while waiting for the results from the aforementioned Fixed Loop EM regional survey, a total of three additional regional holes were completed targeting F1-5 and Splendour.

At F1-5 prospect, drill hole 20WGDD008 targeted a priority VTEM/FLTEM conductor (300 – 500 siemens), intersecting low-level sulphides (<1%) over a broad interval from 102-299m. A broad off-hole DHEM anomaly was recorded from 110-130m downhole. Further EM modelling will be undertaken in the coming quarter to delineate any additional targets. Assay results are pending.





Sahara Prospect and regional targets

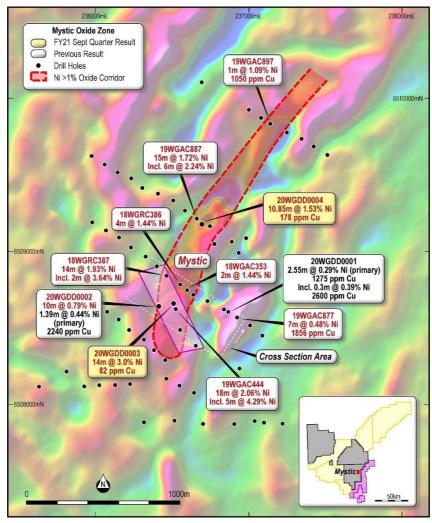
### Western Gawler (WSA 100%) EL 5688, EL 5939, EL 6087, EL 6248, EL 6249

### **Mystic Nickel Zone**

The Mystic Nickel Zone represents a significant two-fold exploration opportunity to both delineate and define an emerging near-surface high-grade nickel oxide zone, and secondly, to explore the potential for significant accumulations of primary nickel-sulphide mineralisation at depth.

No additional drilling was completed during the reporting period. However, results from drill holes 20WGDD0003 and 20WGDD004 (drilling completed in the June quarter) were returned.

	Exploration Results – Mystic June Quarter 2020													
HOLE ID	Easting	Northing	RL	ЕОН	Туре	Dip	Azi	Width (m)	Ni %	Cu (ppm)	Pt + Pd (ppb)	Co (ppm)	From (m)	Style
20WGDD0003	236507	6508652	69	96.7	DD	-90	0	22	2.24	111	16	656	42	Oxide
						in	cluding	14	3.00	82	15	750	47	Oxide
	also including						cluding	2.65	3.65	42	35	826	57.35	Oxide
20WGDD0004	236688	6509195	76	114.7	DD	-90	0	10.85	1.53	178	31	617	40	Oxide



**Mystic Prospect** 

Diamond drill hole 20WGDD0003 was designed to target and follow-up significantly elevated nickel-oxide mineralisation intersected from a series of air-core and RC drilling programs completed during 2018 and 2019, which returned notable results including 18m@ 2.06% Ni (including 5m @ 4.29% Ni) from drill hole 19WGAC444. Significant nickel-oxide assay results were intersected from 20WGDD0003, returning 22m @ 2.24% Ni (from 42m), including 14m @ 3.0% Ni, confirming results from earlier drilling. High-grade nickel-oxide zones within 20WGDD0003 are characterised by garnierite (lateritic nickel ore) in weathered ultramafic. Textural observations suggest this may be a weathered replacement of primary nickel sulphide mineralisation. The Company considers this to be a particularly exciting development, as it is suggestive that this zone may vector towards a potential primary magmatic sulphide accumulation at depth. Drilling efforts into the December quarter will aim to investigate this potential primary nickel sulphide target.

Drill hole 20WGDD0004 (completed in the June guarter) was designed to target the Mystic Oxide Zone, 600m along strike (to the northeast) from drill hole 20WGDD003. Significant nickel-oxide mineralisation intersections were returned from 20WGDD0004, including 10.85m @ 1.53% Ni (from 40m), with this drill hole successfully confirming elevated nickel-oxide values from the 2019 air-core program (15m @ 1.72% Ni within 19WGAC887). Of further note, drill hole 20WGDD0004 confirmed the northern extension of the prospective high-MgO orthocumulate ultramafic unit, which was first identified within diamond drill hole 20WGDD001 (drilled in June quarter and returning 2.55m @ 0.29% Ni, 1275ppm Cu, representing the first identification of primary nickel and copper bearing sulphides at Mystic).

These new significant assay results and observations from drill-core at Mystic, have further confirmed the prospectivity of this area for the potential to host significant accumulations of nickel-oxide mineralisation, and accompanying primary magmatic sulphides at depth. Drilling throughout the December guarter will aim to further investigate the strike potential of nickel-oxide mineralisation at Mystic, coupled with investigating the potential for primary sulphide accumulations at depth.



## Strandline Farm-in and Joint Venture (WSA earning up to 90%) EL 6494 (formerly EL 5880)

No work was completed during the quarter.

#### -ENDS-

#### **COMPETENT PERSON'S STATEMENT:**

The information within this report as it relates to mineral resources, ore reserves and exploration results is based on information compiled by Mr Andre Wulfse, Mr Marco Orunesu Preiata and Mr Graeme Gribbin of Western Areas Ltd. Mr Wulfse is a Fellow of AusIMM, Mr Orunesu Preiata is a member of AusIMM and Mr Gribbin is a member of AIG. Mr Wulfse, Mr Orunesu Preiata and Mr Gribbin are all full time employees of Western Areas. Mr Wulfse, Mr Orunesu Preiata and Mr Gribbin have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.' Mr Gribbin, Mr Wulfse and Mr Orunesu Preiata consent to the inclusion in the report of the matters based on the information in the form and context in which it appears.

#### FORWARD LOOKING STATEMENT:

This release contains certain forward-looking statements including nickel production targets. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production and expected costs.

Examples of forward looking statements used in this report include: "The nickel price has recently benefited from resilient stainless steel production rates and reduced availability of nickel pig iron feed stocks in China. Confirmation that nickel rich battery technology is expected to play a large part in the continued evolution of the battery packs for electric vehicles is also increasing market confidence in the long term outlook for nickel.", and, "BioHeap demonstration leach pad construction commenced at Forrestania, targeting initial operation in the December quarter".

These forward-looking statements are subject to a variety of risks and uncertainties beyond the Company's ability to control or predict which could cause actual events or results to differ materially from those anticipated in such forward-looking statements. Western Areas Ltd undertakes no obligation to revise these forward-looking statements to reflect subsequent events or circumstances.

This announcement does not include reference to all available information on the Company and should not be used in isolation as a basis to invest in Western Areas Ltd. Potential investors should refer to Western Areas' other public releases and statutory reports and consult their professional advisers before considering investing in the Company.

WESTERN AREAS LIMITED



## WESTERN AREAS ORE RESERVE AND MINERAL RESOURCE STATEMENT

		Tonnes	Grade Ni%	Ni Tonnes	Classification	JORC Cod
re Reserves					5 6 . 5	2010
. Flying Fox Area		366,200	3.1	11,240	Probable Ore Reserve	2012
. Spotted Quoll Area		1,131,600	4.1	46,400	Probable Ore Reserve	2012
. Diggers Area						
	Digger South	2,016,000	1.4	28,950	Probable Ore Reserve	2004
	Digger Rocks	93,000	2.0	1,850	Probable Ore Reserve	2004
тот	AL FORRESTANIA ORE RESERVE	3,606,800	2.5	88,440		
. Cosmos area						
	Odysseus South	4,483,700	1.9	85,620	Probable Ore Reserve	2012
	Odysseus North	3,651,900	2.2	78,900	Probable Ore Reserve	2012
	AM6	2,098,500	2.2	47,100	Probable Ore Reserve	2012
T	OTAL COSMOS ORE RESERVE	10,234,100	2.1	211,620		
TOTAL W	ESTERN AREAS ORE RESERVE	13,840,900	2.2	300,060		
lineral Resources						
. Flying Fox Area						
	T1 South	158,350	3.7	5,821	Indicated Mineral Resource	2012
	T1 North	51,798	4.9	2,524	Indicated Mineral Resource	2012
	OTZ Sth Massive Zone	112,045	4.9	5,096	Indicated Mineral Resource	2012
		· ·		,	Indicated Mineral Resource	
	T4 Massive Zone	96,557	5.2	5,039		2012
	T5 Massive Zone + Pegs	445,562	4.7	20,950	Indicated Mineral Resource	2012
	T6 Massive Zone	43,969	3.3	1,454	Indicated Mineral Resource	2012
	T7 Massive Zone	259,568	1.4	3,771	Inferred Mineral Resource	2012
	Total High Grade	1,167,849	3.8	44,655		
	T5 Flying Fox Disseminated Zone	197,200	0.8	1,590	Indicated Mineral Resource	2004
		357,800	1.0	3,460	Inferred Mineral Resource	2004
	T5 Lounge Lizard Disseminated Zone	4,428,000	0.8	36,000	Indicated Mineral Resource	2004
	Total Disseminated	4,983,000	0.8	41,050		
	Total Flying Fox/Lounge Lizard	6,150,849	1.4	85,705		
New Morning / Daybreak	Total Flying Fox Zoungo Zizaru	0,100,010		00,100		
The William Ing / Daybreak	Massive Zone	340,126	3.3	11,224	Indicated Mineral Resource	2012
	IVIdSSIVE ZUITE	· ·		,		
	D	78,067	3.9	3,025	Inferred Mineral Resource	2012
	Disseminated Zone	3,318,468	1.2	41,181	Indicated Mineral Resource	2012
		2,496,658	1.3	32,498	Inferred Mineral Resource	2012
	Total New Morning / Daybreak	6,233,319	1.4	87,928		
Spotted Quoll Area						
	Spotted Quoll	894,099	6.3	56,125	Indicated Mineral Resource	2012
		147,724	4.1	6,041	Inferred Mineral Resource	2012
	Total Spotted Quoll	1,041,823	6.0	62,166		
	Beautiful Sunday	480,000	1.4	6,720	Indicated Mineral Resource	2004
	Total Spotted Quoll/Beautiful Sunday	1,521,823	4.5	68,886		
. Cosmic Boy Area		,- ,		,		
Cooming Boy Filed	Cosmic Boy	180,900	2.8	5,050	Indicated Mineral Resource	2004
	Seagull	195.000	2.0	3,900	Indicated Mineral Resource	2004
	Total Cosmic Boy Area	375,900	2.4	8,950	indicated willeral Nesource	2004
5: 4	Total Costflic Boy Alea	373,900	2.4	0,930		
Diggers Area	Disease County Com	0.704.500		07.570	Indicated Mineral Decem	2007
	Diggers South - Core	2,704,500	1.4	37,570	Indicated Mineral Resource	2004
	Digger South - Core	362,700	1.2	4,530	Inferred Mineral Resource	2004
	Digger Rocks - Core	282,940	1.7	4,790	Indicated Mineral Resource	2004
	Digger Rocks - Core	50,600	1.3	670	Inferred Mineral Resource	2004
	Purple Haze	560,000	0.9	5,040	Indicated Mineral Resource	2004
	Total Diggers Area	3,960,740	1.3	52,600		
TOTAL	FORRESTANIA MINERAL RESOURCE	18,242,631	1.7	304,069		
Cosmos Area						
	AM5	895,815	2.6	23,635	Indicated Mineral Resource	2012
		31,376	6.6	2,082	Inferred Mineral Resource	2012
	AM6	2,648,508	2.5	65,361	Indicated Mineral Resource	2012
		116,416	1.7	2,001	Inferred Mineral Resource	2012
	Odysseus South Disseminated	4,016,949	2.1	84,767	Indicated Mineral Resource	2012
	,	219,641	2.0	4,302	Inferred Mineral Resource	2012
	Odysseus North - Disseminated	3,128,943	2.6	81,156	Indicated Mineral Resource	2012
	Ouysseus Nottii - Dissettiiliateu					
	O transport No. 11	225,248	2.7	6,111	Inferred Mineral Resource	2012
	Odysseus North - Massive	70,106	12.6	8,814	Indicated Mineral Resource	2012
		124,900	11.2	14,002	Inferred Mineral Resource	2012
	Total Cosmos Area	11,477,902	2.5	292,231		
Mt Goode Area				[		
	Mt Goode	13,563,000	0.8	105,791	Measured Mineral Resource	2012
		27,363,000	0.6	158,705	Indicated Mineral Resource	2012
		12,009,000	0.5	62,447	Inferred Mineral Resource	2012
	Total Mt Goode Area	52,935,000	0.6	326,943		1
						1
TOTA	L COSMOS MINERAL RESOURCE	64,412,902	1.0	619,174		



## **JORC 2012 TABLE 1 – FORRESTANIA EXPLORATION**

## **SECTION 1: SAMPLING TECHNIQUES AND DATA**

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> </ul>	<ul> <li>Exploration targets were tested and sampled from reverse circulation (RC) chips, and holes were mostly drilled perpendicular to the strike (north-south) of the stratigraphy.</li> <li>Drill holes were located initially with hand held GPS and later surveyed by differential GPS. RC sample chips are submitted to ALS laboratories at Malaga, Perth was weighed to determine density by the weight in air, weight in water method. All sampling was conducted under WSA QAQC protocols which are in accordance with industry best practice.</li> <li>Diamond drill core (NQ2) is 1/4 core sampled on geological intervals (0.2m - 1.5m) to achieve sample weights under 2kgs.</li> <li>Samples were crushed, dried and pulverised (total prep) to produce a sub sample for analysis by 4 acid digest with an ICP/AES and FA/ICP (Au, Pt, Pd) finish.</li> </ul>
	<ul> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	<ul> <li>All samples were prepared and assayed by independent commercial laboratories whose instruments are regularly calibrated.</li> </ul>
	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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	<ul> <li>Sampled mineralisation intervals are sent to a commercial laboratory for crushing and grinding before assaying.</li> <li>RC holes were sampled initially as 4m composites, with follow up 1m samples captured pending the return of significant assay results.</li> <li>Samples were crushed, dried and pulverised (total prep) to produce a sub sample for analysis by 4 acid digest with an ICP/AES and FA/ICP (Au, Pt, Pd) finish.</li> </ul>
Drilling techniques	■ Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).	<ul> <li>Diamond Drilling utilized a UDR1200 rig</li> <li>Diamond drilling comprises HQ and NQ2 sized core.</li> <li>Historical data is derived from both surface and underground diamond drilling</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	<ul> <li>Drilling recoveries are digitally logged, recorded, and captured within the project database.</li> </ul>



- 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.
- Diamond core recoveries have been logged and recorded in the database
- Diamond core are logged and recorded in the database.
   Overall recoveries are >95% and there was no core loss issues or significant sample recovery problems. Core loss is noted where it occurs.
- Diamond core was reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers.
- RC recoveries are logged and recorded in the database and RC samples were visually checked for recovery, moisture and contamination. Drilling close to the lake shore for the Neptune drilling resulted in high water flows which reduced the sample size and loss of fines from the sample.
- The drilling by diamond core method has high recoveries. The massive sulphide style of mineralisation and the consistency of the mineralised intervals are considered to preclude any issue of sample bias due to material loss or gain.
- Drilling in the oxidised profile results in more incomplete core recoveries.

## 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.

- Geological logging is recorded and validated in Ocris software (Toughbook platform)
- Drill chips are logged for lithology, mineralogy, mineralisation, weathering, fabric, grainsize, colour and other relevant features.
- Geotechnical logging was not completed due to the nature of drill method.
- All holes have been logged from the surface to the end of hole.
- Petrology is used to verify the field geological logging.
- Core is photographed in both dry and wet form and logging is done in detail.

## Sub-sampling techniques and sample preparation

- If core, whether cut or sawn and whether quarter, half or all core taken.
- If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.
- For all sample types, the nature, quality and appropriateness of the sample preparation technique.
- Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.
- 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.

- Diamond core is sampled as quarter core only; cut by the field crew on site by diamond saw.
- RC samples were collected on the rig using cone splitters.
   Composite samples are collected via riffle splitting or spearing to generate a single sample of less than 3kg.
- Sample preparation follows industry best practice involving oven drying, coarse crushing and pulverising.
- The field crew prepares and inserts the QAQC certified reference materials into the relevant calico bags.
- OREAS and Geostats standards have been selected based on their grade range and mineralogical properties, with approximately 12 different standards used.
- Standards and blanks are inserted approximately every 20 samples or at least one every hole for both diamond and RC drilling.



	<ul> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>All geological logging was carried out to a high standard using well established geology codes in LogChief software.</li> </ul>
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.	<ul> <li>All samples are assayed by independent certified commercial laboratories.</li> <li>The laboratories used are experienced in the preparation and analysis of nickel sulphide ores.</li> </ul>
	■ 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.	<ul> <li>No Geophysical tools or handheld XRF instruments were used to determine any element concentrations that were subsequently used for MRE or exploration reporting purposes.</li> </ul>
	<ul> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory</li> </ul>	<ul> <li>Certified reference materials are included in all batches dispatched at an approximate frequency of 1 per 25 samples, with a minimum of two per batch.</li> </ul>
	checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Field duplicates are inserted into submissions at an approximate frequency of 1 in 25, with placement determined by Nickel grade and homogeneity. Lab checks, both pulp and crush, are taken alternately by the lab at a frequency of 1 in 25.
		<ul> <li>Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots.</li> </ul>
		<ul> <li>Evaluations of standards are completed on a monthly, quarterly, and annual basis using QAQCR.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	<ul> <li>Geological interpretation using intersections peer viewed by prior company and WSA geologists.</li> </ul>
	■ The use of twinned holes.	Not applicable for this program
	<ul> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and</li> </ul>	<ul> <li>All primary geophysical data were recorded digitally and sent in electronic format to Newexco Services Pty Ltd for quality control and evaluation.</li> </ul>
	electronic) protocols.	<ul> <li>All geological logging was carried out to a high standard using well established geology codes in LogChief software.</li> </ul>
		All other data including assay results are imported via Datashed software.
		<ul> <li>Drillholes, sampling and assay data is stored in a SQL Server database located in a dedicated data center.</li> </ul>
	Discuss any adjustment to assay data.	= none
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down- hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> </ul>	■ Downhole surveys completed using the Reflex "Gyro Sprint-IQ™" north seeking gyroscopic instrument on all resource definition and Exploration diamond holes. Exploration RC holes were surveyed down-hole using an Eastman single shot camera. Underground drill-hole collar locations verified via survey pickup.
	Specification of the grid system used.	MGA94 Zone 51 grid coordinate system is used.
		A two point transformation is used to convert the data from AMG84_51 mine grid and vice versa.



	Quality and adequacy of topographic control.	<ul> <li>Elevation data is captured with hand held GPS, and cross referenced with local topographical maps (DMP produced), SRTM data and recently captured DTM models from recently flown aerial photo surveys.</li> <li>Collar positions were picked up by suitably qualified surface and underground surveyors</li> </ul>
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill holes are located and specifically planned according to target location and stratigraphic location.
	<ul> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> </ul>	Samples are collected at 1m intervals (Diamond and Aircore) and 4m composites (RC).
	Whether sample compositing has been applied.	Not applicable
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.	The majority of the drill holes are orientated to achieve intersection angles as close to perpendicular as possible.
	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.	No orientation-based sampling bias has been observed in the data, intercepts are reported as downhole lengths.
Sample security	The measures taken to ensure sample security.	Standard West Australian mining industry sample security measures were observed.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>Adrian Black of Newexco Pty Ltd (a member of the AIG), an independent exploration company, has reviewed the data and sampling techniques employed by the Company.</li> </ul>

## **SECTION 2: REPORTING OF EXPLORATION RESULTS**

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>Forrestania Nickel Operations comprises approximately 125 tenements covering some 900km2 within the Central Yilgarn Province. The tenements include exploration licences, prospecting licences, general purpose leases, miscellaneous licences and mining leases.</li> <li>Western Areas wholly owns 106 tenements, 55 tenements of which were acquired from Outokumpu in 2002 and a further 51 tenements acquired from Kagara in March 2012 (some which are subject to various third-party royalty agreements). The remainder of the tenements are subject to Joint Ventures.</li> <li>Several the Kagara tenements are subject to third party royalty agreements.</li> </ul>



		All the tenements are in good standing. Six tenements are pending grant.
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Western Areas has been exploring its wholly owned tenements since 2002. The tenements subject to the Kagara sale which took place in March 2012 were explored by Kagara since 2006 and Lion Ore and St Barbara prior to that time.</li> </ul>
		<ul> <li>Western Areas has managed the Mt Gibb JV since 2009 (Great Western Exploration explored the ground prior to that time).</li> </ul>
		<ul> <li>Kidman Resources Limited has entered into a Farm-in and Joint Venture with Western Areas, with a Stage 1 opportunity to earn in to 50% lithium rights.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	■ The FNO lies within the Forrestania Greenstone Belt, which is part of the Southern Cross Province of the Yilgarn Craton in Western Australia. The main deposit type is the komatiite hosted disseminated to massive Nickel sulphide deposits, which include the Flying Fox and Spotted Quoll deposits which are currently being mined. The mineralisation occurs in association with the basal section of high MgO cumulate ultramafic rocks.
		■ The greenstone succession in the FNO district also hosts a number of orogenic lode gold deposits of which Bounty Gold Mine is the biggest example. Some exploration for this style of deposit is undertaken by Western areas from time to time in the FNO tenements.
Drill hole Information	<ul> <li>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:</li> </ul>	Drill hole summary details supporting reported intersections from the Seagull prospect are captured in the enclosed table.
	<ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> <li>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.</li> </ul>	
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.	<ul> <li>Standard weighted averaging of drill hole intercepts were employed. No maximum or minimum grade truncations were used in the estimation.</li> <li>The reported assays have been length and bulk density weighted A lower arbitrary 0.5% Ni cut-off is applied, with no top cut applied. High grade intercepts internal to broader zones of mineralisation are reported as included intervals.</li> </ul>
	<ul> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of</li> </ul>	Metal equivalents have not been used



	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.	
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	■ Drill hole intersections may not be true widths
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.	■ Included within report
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	All relevant assay results have been 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; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>Included within the report</li> <li>Geophysics</li> <li>Information on structure type, dip, dip direction alpha and beta angles, texture, shape, roughness and fill material is stored in the structural logs in the database</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Preliminary plans are included within the report</li> <li>Future explorations programs may change depending on results and strategy</li> </ul>



## JORC 2012 TABLE 1 - COSMOS NICKEL COMPLEX EXPLORATION

## **SECTION 1 SAMPLING TECHNIQUES AND DATA**

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> </ul>	<ul> <li>Exploration targets were tested and sampled from diamond drilling (DD) core, and holes were mostly drilled perpendicular to the strike (north-south) of the stratigraphy.</li> <li>Exploration targets were tested and sampled from reverse circulation (RC) chips, and holes were mostly drilled perpendicular to the strike (north-south) of the stratigraphy.</li> <li>Drill holes were located initially with hand held GPS and later surveyed by differential GPS. DD holes were used to obtain high quality samples that were fully oriented and logged for lithological, structural, geotechnical attributes. Each sample of diamond drill core submitted to ALS laboratories at Malaga, Perth was weighed to determine density by the weight in air, weight in water method. All sampling was conducted under WSA QAQC protocols which are in accordance with industry best practice.</li> <li>Diamond drill core (NQ2) is 1/4 core sampled on geological intervals (0.2m - 1.5m) to achieve sample weights under 2kgs.</li> <li>Samples were crushed, dried and pulverised (total prep) to produce a sub sample for analysis by 4 acid digest with an ICP/AES and FA/ICP (Au, Pt, Pd) finish.</li> </ul>
	<ul> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	<ul> <li>All samples were prepared and assayed by independent commercial laboratories whose instruments are regularly calibrated</li> <li>Geophysical survey QC parameters were reviewed by independent supervising geophysicists from Newexco Services Pty Ltd</li> </ul>
	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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	<ul> <li>Diamond core is typically marked at 1m intervals</li> <li>Sample intervals marked up by geologists based on geology.</li> <li>Sampled mineralisation intervals are sent to a commercial laboratory for crushing and grinding before assaying.</li> <li>RC holes were sampled initially as 4m composites, with follow up 1m samples captured pending the return of significant assay results.</li> </ul>
Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type,</li> </ul>	<ul> <li>Diamond Drilling utilized a UDR1200 rig</li> <li>Diamond drilling comprises HQ and NQ2 sized core.</li> <li>RC drilling was performed with a "DR026" (2019 T685 Schramm)</li> <li>Historical data is derived from both surface and underground diamond drilling</li> </ul>



	whether core is oriented and if so, by what method, etc).	
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>Diamond core recoveries have been logged and recorded in the database</li> <li>Diamond core are logged and recorded in the database. Overall recoveries are &gt;95% and there was no core loss issues or significant sample recovery problems. Core loss is noted where it occurs.</li> <li>Diamond core was reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers.</li> <li>RC recoveries are logged and recorded in the database and RC samples were visually checked for recovery, moisture and contamination. Drilling close to the lake shore for the Neptune drilling resulted in high water flows which reduced the sample size and loss of fines from the sample.</li> <li>The drilling by diamond core method has high recoveries. The massive sulphide style of mineralisation and the consistency of the mineralised intervals are considered to preclude any issue of sample bias due to material loss or gain.</li> <li>Drilling in the oxidised profile results in more incomplete core recoveries.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> </ul>	<ul> <li>All geological logging was carried out to a high standard using well established geology codes in Ocris software.</li> <li>All logging recorded in a Panasonic Toughbook PC.</li> </ul>
	<ul> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> </ul>	Core is photographed in both dry and wet form and logging is done in detail.
	The total length and percentage of the relevant intersections logged.	All diamond drill holes were logged and photographed in full. RC holes are logged in full.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Diamond core is sampled as quarter core only; cut by the field crew on site by diamond saw.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	<ul> <li>RC samples were collected on the rig using cone splitters.</li> <li>Composite samples are collected via riffle splitting or spearing to generate a single sample of less than 3kg.</li> </ul>
	<ul> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	Sample preparation follows industry best practice involving oven drying, coarse crushing and pulverising.
	Quality control procedures adopted for all sub-sampling stages to	The field crew prepares and inserts the QAQC certified reference materials into the relevant calico bags.
	maximise representivity of samples.	<ul> <li>OREAS and Geostats standards have been selected based on their grade range and mineralogical properties, with approximately 12 different standards used.</li> </ul>
	<ul> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for</li> </ul>	Standards and blanks are inserted approximately every 20 samples or at least one every hole for both diamond and RC drilling.



	instance results for field duplicate/second-half sampling.	
	<ul> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>All geological logging was carried out to a high standard using well established geology codes in Ocris software.</li> </ul>
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.	<ul> <li>All samples are assayed by independent certified commercial laboratories.</li> <li>The laboratories used are experienced in the preparation and analysis of nickel sulphide ores.</li> </ul>
	■ 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.	No Geophysical tools or handheld XRF instruments were used to determine any element concentrations that were subsequently used for MRE or exploration reporting purposes.
	<ul> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory</li> </ul>	Certified reference materials are included in all batches dispatched at an approximate frequency of 1 per 25 samples, with a minimum of two per batch.
	checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Field duplicates are inserted into submissions at an approximate frequency of 1 in 25, with placement determined by Nickel grade and homogeneity. Lab checks, both pulp and crush, are taken alternately by the lab at a frequency of 1 in 25.
		<ul> <li>Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots.</li> </ul>
		Evaluations of standards are completed on a monthly, quarterly and annual basis using QAQCR.
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	<ul> <li>Geological interpretation using intersections peer viewed by prior company and WSA geologists.</li> </ul>
	■ The use of twinned holes.	Not applicable
	<ul> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and</li> </ul>	<ul> <li>All primary geophysical data were recorded digitally and sent in electronic format to Newexco Services Pty Ltd for quality control and evaluation.</li> </ul>
	electronic) protocols.	<ul> <li>All geological logging was carried out to a high standard using well established geology codes in Ocris software.</li> </ul>
		<ul> <li>All other data including assay results are imported via Datashed software.</li> </ul>
		<ul> <li>Drillholes, sampling and assay data is stored in a SQL Server database located in a dedicated data center.</li> </ul>
	Discuss any adjustment to assay data.	• none
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down- hole surveys), trenches, mine</li> </ul>	■ Downhole surveys completed using the Reflex "Gyro Sprint-IQ™" north seeking gyroscopic instrument on all resource definition and Exploration diamond holes. Exploration RC holes
	workings and other locations used in Mineral Resource estimation.	were surveyed down-hole using an Eastman single shot camera. Underground drill-hole collar locations verified via survey pickup.



		<ul> <li>A two-point transformation is used to convert the data from AMG84_51 mine grid and vice versa.</li> </ul>
	<ul> <li>Quality and adequacy of topographic control.</li> </ul>	The project area is flat and the topographic data density is adequate for MRE purposes
		<ul> <li>Collar positions were picked up by suitably qualified surface and underground surveyors</li> </ul>
Data spacing and distribution	Data spacing for reporting of Exploration Results.	<ul> <li>Drill hole spacing at Neptune, Penelope, Zeus and Ajax is varied according to the nature of target type. Where initial drilling was undertaken holes are nominally 250m to 400m apart. Where mineralisation is identified holes are spaced at an approx 100m to 200m spacing.</li> </ul>
		<ul> <li>For other projects, including Au targets at Kathleen Valley, drill spacing will vary based on the target being tested.</li> </ul>
	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.	Samples are collected at 1m intervals (Diamond and Aircore) and 4m composites (RC)
	Whether sample compositing has been applied.	<ul> <li>Sampling compositing has been applied to some of the RC sampling (2m to 4m). Where significant results are intersected, RC samples will be broken into 1m intervals.</li> </ul>
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.	■ The majority of the drill holes are orientated to achieve intersection angles as close to perpendicular as possible. The steep dipping nature of the stratigraphy at some targets (70° to 80°) means this is not always achieved.
	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.	No orientation based sampling bias has been observed in the data, intercepts are reported as downhole lengths.
Sample security	The measures taken to ensure sample security.	Standard West Australian mining industry sample security measures were observed.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Adrian Black of Newexco Pty Ltd (a member of the AIG), an independent exploration company, has reviewed the data and sampling techniques employed by the Company.



# JORC 2012 TABLE 1 - COSMOS NICKEL COMPLEX EXPLORATION

# **SECTION 2: REPORTING OF EXPLORATION RESULTS**

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>Cosmos Nickel Complex comprises 21 exploration and mining tenements covering a total of 102km².</li> <li>Western Areas wholly owns 18 tenements, with (14) acquired from Xstrata Nickel Australasia in October 2015, and an additional (4) tenements acquired from Ramelius Resources in 2020. The remainder of the tenements (3) are subject to a Joint Venture with Alkane Resources NL, where Western Areas has earned 80.6% interest</li> <li>All tenements are in good standing</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	Historical nickel exploration has been completed by Glencore PLC, Xstrata Nickel Australasia and Jubliee Mines NL. Recent Au exploration on the 4 recently acquired tenements was conducted by Ramelius Resources.
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The deposits form part of the Cosmos Nickel Complex, which lies within the Agnew-Wiluna Belt of the central Yilgarn Craton, Western Australia</li> <li>The deposit style is komatiite hosted, disseminated to massive nickel sulphides.</li> <li>The mineralisation typically occurs in association with the basal zone of high MgO cumulate ultramafic rocks.</li> <li>Many of the higher-grade ore bodies in the Cosmos Nickel Complex also show varying degrees of remobilisation, and do not occur in a typical mineralisation profile</li> <li>Gold mineralisation within the Kathleen Valley Group of tenements if related to regional faults and shear zones, with mineralisation hosted within ultramafic, mafic (gabbro and dolerite) and sedimentary (Jones Creek Conglomerate) successions.</li> </ul>
Drill hole Information	A summary of all information material to the understanding of the exploration results including a	Drill hole summary details supporting reported intersections from the Penelope and Kathleen Valley projects are captured in the enclosed table.
	tabulation of the following information	KVRC0038 259707.5 6954416.0 501.3 204 RC -62 73  KVRC0039 259635.9 6954396.9 500.0 48 RC -69 72
	for all Material drill holes:	KVRC0040 259647.1 6954560.2 501.2 216 RC -58 147
	<ul> <li>easting and northing of the drill</li> </ul>	KVRC0041 258792.3 6952566.1 491.6 186 RC -57 120
	hole collar	KVRC0042 258722.8 6952517.8 491.7 210 RC -59 119
	elevation or RL (Reduced Level	KVRC0043 258570.4 6952500.2 491.4 253 RCD -55 120
	– elevation above sea level in	KVRC0044 258622.7 6952487.3 490.8 319.4 RCD -62 118
	metres) of the drill hole collar	KVRC0045 258668.5 6952459.0 491.7 198.6 RCD -50 120
	<ul> <li>dip and azimuth of the hole</li> </ul>	KVRC0046 258639.8 6952427.4 491.5 198 RC -58 122
	<ul> <li>down hole length and</li> </ul>	KVRC0047 258518.2 6952396.8 491.1 198 RC -58 122
	interception depth	KVRC0048 258512.8 6952352.1 491.1 154 RC -63 123
	<ul><li>hole length.</li></ul>	KVRC0049 260108.1 6952694.7 498.7 208 RC -60 52
		KVRC0050 260106.6 6952692.1 498.9 180 RC -59 95



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.

KVRC0051	260102.8	6952690.8	499.0	6	RC	-53	100
KVRC0052	260100.8	6952689.6	499.1	249.7	RCD	-53	111
KVRC0053	260090.3	6952834.4	498.4	212	RC	-85	5
KVRC0054	258930.2	6952456.0	493.5	80	RC	-60	125
KVRC0055	258914.7	6952433.0	493.5	60	RC	-60	125
KVRC0056	259857.4	6955213.3	505.3	240	RC	-80	75
KVRC0057	259834.4	6955164.8	504.8	228	RC	-65	75
KVRC0058	259455.5	6953548.8	496.1	60	RC	-60	105
KVRC0059	259406.3	6953560.1	496.0	78	RC	-60	105
KVRC0060	259353.9	6953574.6	495.6	60	RC	-60	105
KVRC0061	259306.8	6953588.9	495.5	60	RC	-60	105
KVRC0062	259818.9	6955049.2	505.0	264	RC	-80	75
KVRC0063	259790.1	6954951.2	504.8	230	RC	-60	75
KVRC0064	259783.0	6954887.8	504.0	240	RC	-68	75
KVRC0065	259801.4	6954788.4	503.3	226	RC	-71	73
KVRC0066	259850.8	6954676.4	503.4	240	RC	-70	74
KVRC0067	257756.4	6950871.5	488.8	96	RC	-65	123
KVRC0068	258005.2	6950999.5	489.2	60	RC	-60	125
KVRC0069	258119.8	6951473.1	488.1	140	RC	-60	123
KVRC0070	258636.9	6951598.5	496.2	102	RC	-60	122
KVRC0071	258594.5	6951621.1	495.2	78	RC	-90	0
KVRC0072	258930.8	6954529.1	505.8	150	RC	-55	110
KVRC0073	258982.7	6954649.3	505.8	120	RC	-53	357
KVRC0074	258981.3	6954645.5	505.9	78	RC	-55	60
KVRC0075	258978.4	6954641.9	506.0	112	RC	-55	105
KVRC0076	259421.1	6953349.8	495.3	102	RC	-55	105
KVRC0077	260043.1	6953692.0	503.5	138	RC	-87	100
KVRC0078	258596.9	6951620.9	495.3	180	RC	-50	112
KVRC0079	258121.6	6951472.9	488.2	229	RC	-58	127
KVRC0080	257759.2	6950871.1	488.9	140	RC	-57	120
KVD001	260103.0	6952694.0	499.0	266.5	DD	-52	150
WCD034W1	261218.9	6943408.6	472.4	533.8	DD	-68.9	267.7
WCD034W2	261218.9	6943408.6	472.4	926.8	DD	-68.9	267.7
WCD034W2W1	261218.9	6943408.6	472.4	1370.9	DD	-68.9	267.7

# 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.

- Standard weighted averaging of drill hole intercepts were employed. No maximum or minimum grade truncations were used in the estimation.
- The reported assays have been length and bulk density weighted. A lower arbitrary 0.5% Ni cut-off is applied, with no top cut applied. High grade intercepts internal to broader zones of mineralisation are reported as included intervals.
- Reported Au assays have been length and bulk density weighted. No top cut was applied to intervals (the highest grading sample received was 39 g/t).
- Metal equivalents have not been used



Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	Drill hole intersections may not be true widths
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.	Included within report
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.	All relevant assay results have been 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; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>Included within report</li> <li>Geophysics</li> <li>Information on structure type, dip, dip direction alpha and beta angles, texture, shape, roughness and fill material is stored in the structural logs in the database.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Preliminary plans are included within the report</li> <li>Future explorations programs may change depending on results and strategy</li> </ul>



# JORC 2012 TABLE 1 - AM5 MINERAL RESOURCE ESTIMATE

# **SECTION 1: SAMPLING TECHNIQUES AND DATA**

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> </ul>	<ul> <li>The orebody was sampled using NQ2 and HQ core from surface and underground Diamond drilling</li> <li>Holes were typically drilled perpendicular to the strike (northsouth) of the stratigraphy.</li> <li>Handheld XRF was used prior to sampling to determine whether core was barren or Ni bearing</li> <li>All assaying was done by commercial independent laboratories, primarily ALS laboratories in Malaga and Ultratrace was used as a check laboratory</li> <li>The lab determined density by Pycnometer on powder samples.</li> <li>Diamond drill core (NQ2) is primarily ¼ core sampled on geological intervals to achieve sample weights under 2kgs. Samples were crushed, dried and pulverised (total prep) to produce a sub sample for analysis by 4 acid digest with an ICP/AES.</li> <li>The primary method of analysis was ME-O62</li> </ul>
	<ul> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	All samples were prepared and assayed by independent commercial laboratories whose instruments are regularly calibrated
	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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	<ul> <li>Diamond core is typically marked at 1m intervals</li> <li>Sample intervals are marked up by geologists based on geological boundaries, typically 1m in length with a maximum of 1.25m</li> <li>Sampled mineralisation intervals are sent to a commercial laboratory for crushing and grinding before assaying.</li> </ul>
Drilling techniques	■ Drill type (e.g. core, reverse circulation, openhole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, facesampling bit, or other type, whether core is oriented and if so, by what method, etc).	<ul> <li>Diamond drilling comprises HQ and NQ2 sized core</li> <li>Most of the core was oriented</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias</li> </ul>	<ul> <li>Diamond core recoveries have been logged and recorded in the database</li> <li>Core loss was noted where it occurred and fracture and defects were logged</li> <li>Diamond core was reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked</li> </ul>



Criteria	JORC Code Explanation	Commentary
	may have occurred due to preferential loss/gain of fine/coarse material.	against the depth given on the core blocks and rod counts are routinely carried out by the drillers.
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> </ul>	All geological logging was carried out to a high standard and to a level of detail to support Mineral Resource estimation and mining studies
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Final logging is quantitative and core photography is done to a high standard.  Final logging is quantitative and core photography is done to a high standard.
	The total length and percentage of the relevant intersections logged.	All holes are logged in full.
Sub- sampling	If core, whether cut or sawn and whether quarter, half or all core taken.	Diamond core is sampled as whole, half and quarter core and cut by field crew on site by diamond saw.
techniques and sample preparation	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	All samples are core; samples are crushed and split by independent commercial laboratory personnel.
propuration	<ul> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	The independent commercial labs prepared the samples using industry best practice which involves oven drying, coarse crushing and pulverizing using certified methods and equipment that is regularly tested and cleaned.
	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	<ul> <li>The field crew prepared and inserted QAQC certified reference materials and duplicates, no field blanks were inserted.</li> <li>The lab carried out routine internal QAQC which included blanks to test for contamination</li> </ul>
	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.	<ul> <li>Standards and duplicates were inserted approximately every 25 samples</li> <li>Eight QAQC samples were inserted for every 100 assay samples.</li> </ul>
	Whether sample sizes are appropriate to the grain size of the material being sampled.	<ul> <li>Sample sizes are in accordance with industry standards and are appropriate to the grain size of the nickel bearing material being sampled.</li> </ul>
Quality of assay data and laboratory	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	<ul> <li>All samples are assayed by independent certified commercial laboratories.</li> <li>The laboratories used are experienced in the preparation and analysis of nickel sulphide ores.</li> </ul>
tests	■ 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.	<ul> <li>Handheld XRF instruments were used to determine any element concentrations that were subsequently used for MRE or exploration reporting purposes</li> </ul>
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable	<ul> <li>Certified reference materials were included in all batches dispatched at an approximate frequency of 8 per 100 samples, 4 standards and 4 duplicates every 100m</li> </ul>



Criteria	JORC Code Explanation	Commentary
	levels of accuracy (i.e. lack of bias) and precision have been established.	<ul> <li>Lab checks, both pulp and crush, are taken alternately by the lab at a frequency of 1 in 25.</li> <li>Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots.</li> </ul>
Verification of sampling and	The verification of significant intersections by either independent or alternative company personnel.	All significant intersections were logged and verified by suitably qualified Geologists
assaying	The use of twinned holes.	<ul> <li>Not applicable – No twinned holes by design but some pairs are closely spaced for the purpose of understanding certain mineralization anomalies.</li> </ul>
	Documentation of primary data, data entry procedures, data verification, data storage	All primary data were recorded digitally and sent in electronic format to the database administrator.
	(physical and electronic) protocols.	<ul> <li>All geological logging was carried out to a high standard using well established geology codes using Field Marshall software on a toughpad notebook and later (from hole AMD678) using LogChief software.</li> </ul>
		<ul> <li>All other data including assay results are captured in Excel.</li> <li>Drill holes, sampling and assay data is stored in Datashed and stored in West Perth.</li> </ul>
	Discuss any adjustment to assay data.	- None
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> </ul>	<ul> <li>Downhole surveys were completed using a gyroscopic instrument on all resource definition holes.</li> <li>Underground hole collar locations were verified via survey pickup</li> <li>Most of surveys were done using Deviflex downhole survey instrument. Some of the earlier holes (prior to 2010) were surveyed by an independent surveyor (Downhole Surveys) using a north seeking gyro.</li> </ul>
	Specification of the grid system used.	AMG 84 Zone 51 grid coordinate system was used as a standard. Collar surveys were done in mine grid.
	Quality and adequacy of topographic control.	The project area is flat and the topo data density is adequate for MRE purposes
Data spacing and	Data spacing for reporting of Exploration Results.	<ul> <li>Data spacing exceeds the required data spacing for the purpose of reporting Exploration results.</li> </ul>
distribution	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.	The data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource estimation procedure and the classification applied. Inferred and Indicated Mineral resources were reported, more data is required for reporting Measured resources.
	Whether sample compositing has been applied.	A nominal 1m sample composite length has been applied for Mineral Resource Reporting purposes
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> </ul>	<ul> <li>Most of the drill holes are orientated to achieve intersection angles as close to perpendicular as possible.</li> <li>Geological structures that are not sub parallel to the orebody were accounted for by virtue of cross drilling between surface and underground drilling at different angles.</li> </ul>



Criteria	JORC Code Explanation	Commentary
	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.	<ul> <li>No orientation-based sampling bias has been observed in the data, intercepts are reported as downhole lengths unless otherwise stated.</li> </ul>
Sample security	The measures taken to ensure sample security.	Standard West Australian mining industry sample security measures were adhered to
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>Covered by the relevant QAQC procedures both on the mine and in the primary and umpire laboratory.</li> </ul>

#### **SECTION 2: REPORTING OF EXPLORATION RESULTS**

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> </ul>	<ul> <li>Australian Nickel Investments (a 100% owned subsidiary of Western Areas Ltd) wholly owns 31 tenements, incorporating tenements acquired from Xstrata Nickel Australasia in October 2015, along with a recent acquisition of tenements from Ramelius Resources Ltd in July 2020.</li> <li>An additional three tenements are subject to a Joint Venture with Alkane Resources NL, where Western Areas has earned an 80.6% interest.</li> <li>All tenements are in good standing and WSA is currently developing down to the Odysseus orebody.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Historical nickel exploration has been completed by Glencore PLC, Xstrata Nickel Australasia, and Jubilee Mines NL</li> </ul>
Geology	Deposit type, geological setting, and style of mineralisation.	<ul> <li>The deposits form part of the Cosmos Nickel Complex, which lies within the Agnew-Wiluna Belt of the central Yilgarn Craton, Western Australia</li> <li>The deposit style is komatiite hosted, disseminated to massive nickel sulphides.</li> <li>The mineralisation typically occurs in association with the basal zone of high MgO cumulate ultramafic rocks.</li> </ul>
Drill hole Information	<ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in meters) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> <li>If the exclusion of this information is justified on the basis that the information is not Material</li> </ul> </li> </ul>	No exploration results are being reported  Output  Description:



Criteria	JORC Code Explanation	Commentary
	and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	<ul> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	■ No exploration results are being reported.
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	No exploration results are being reported
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.	No exploration results are 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.	No exploration results are 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.	No exploration results are being reported.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	No exploration results are being reported



Criteria	JORC Code Explanation	Commentary
	<ul> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	

# **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	<ul> <li>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.</li> </ul>	<ul> <li>Database was validated.</li> <li>Data is entered utilising Panasonic Toughbook PC logging</li> <li>Well established geology codes were used</li> <li>Full core photos (wet and dry) were taken and stored</li> </ul>
	Data validation procedures used.	<ul> <li>All QAQC controls were reviewed regularly and reported monthly</li> <li>Industry standard validation techniques were used</li> <li>Relogging of holes was undertaken when there was doubt as to the initial geologic logging</li> <li>Cross checks of digital data against the core was done on a regular basis</li> </ul>
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person is an employee of Western Areas with over 8 years' experience estimating Ni Sulphide ore bodies and has undertaken several site visits to Cosmos to assess and review core.
	If no site visits have been undertaken indicate why this is the case.	Not applicable.
Geological interpretation	Confidence in (or conversely, the uncertainty) of the geological interpretation of the mineral deposit.	<ul> <li>The AM5 deposit is hosted within an ultramafic unit and consists of disseminated nickel sulphide mineralisation as a high-grade core surrounded by medium and low-grade zones.</li> <li>Portions of AM5 have been mined.</li> </ul>
		<ul> <li>WSA commissioned SRK Consulting to undertake 3D modelling of the AM5 and AM6 deposits using the Leapfrog Geo 3D modelling package. Modelling consisted of mineralisation envelopes for disseminated and massive sulphide mineralisation, interpreted north-south fault structures and pegmatite intrusions.</li> </ul>
		The resultant mineralisation and wall rock models were extensively validated by WSA. One of the main validation tools was a comparison of the SRK model with that of the pre- existing Xstrata model. The two models compared favourably.
		<ul> <li>The Geology of the AM5 deposit is well documented and well understood by WSA Geologists who have undertaken several studies and drilling campaigns of the greater Cosmos Nickel Complex since acquisition.</li> </ul>
		<ul> <li>The Geological model is robust enough for the purposes of Mineral Resource estimation and the risk associated with the model being materially wrong is low.</li> </ul>
	Nature of the data used and of any assumptions made.	Surface and underground drill data obtained by Xstrata was used for this estimate. WSA has done surface drilling in the

WESTERN AREAS LIMITED ASX: WSA www.westernareas.com.au ABN 68 091 049 357 Page 46 of 57



	ore bodies associated with AM5 but all direct AM5 targeted drilling was undertaken by previous owners.  No major assumptions were made with respect to the drill data which was collected in accordance with standard industry practices.
The effect, if any, of alternative interpretations on Mineral Resource estimation.	<ul> <li>Several alternative iterations of the mineralized and lithological models were generated and critically assessed during this study. The most appropriate model was then used as a base case for Mineral Resource estimation.</li> </ul>
	<ul> <li>Several alternative iterations of grade estimations using linear techniques were completed and critically assessed before finalising the MRE</li> </ul>
	At all stages of the process, were the models compared to the previously reported models to ensure an appropriate level of consistency between the previous (Xstrata) and the current interpretation. The modelling methodologies were similar enough for direct comparisons to be made.
<ul> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> </ul>	<ul> <li>Geology is the overriding influencing factor in this MRE. A robust digital geologic model by SRK Consulting forms the basis of the estimate.</li> </ul>
<ul> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>Grade and geometry continuity at AM5 are primarily influenced by intrusive barren pegmatite dykes which penetrate the host ultramafic rocks and crosscut mineralisation in some locations.</li> </ul>
	<ul> <li>The pegmatites pinch and swell along strike/down dip and have a westerly dip of ~40 degrees.</li> </ul>
	<ul> <li>Pegmatites were dominantly observed to occur within the lower levels of the model area with an increasing abundance observed with depth (600mRL).</li> </ul>
	<ul> <li>These pegmatites have been carefully modelled using the vein modelling tool in Leapfrog tool using the GP lith 1 code and associated variants.</li> </ul>
	<ul> <li>The pegmatite wireframes were carefully validated against the underlying data and a previous model by Xstrata before being used to deplete the mineralization model at zero Ni grade</li> </ul>
	<ul> <li>A series of north-south trending west dipping faults dominantly bounding the pegmatites exist.</li> </ul>
	The faults appear to have no or limited offsets.
	<ul> <li>Xstrata noted that the ground conditions associated with faults are poor.</li> </ul>
	<ul> <li>SRK spent two days on site investigating these faults in the core yard.</li> </ul>
	<ul> <li>The faults are marked by rubble/fractured zones with strong serpentinization associated with talc as well as lizardite and antigorite forming along fracture planes.</li> </ul>
	<ul> <li>The faults were modelled in Leapfrog and incorporated in the Resource model.</li> </ul>
	<ul> <li>Additional drilling and an independent Geotechnical study are planned prior to commencing mining.</li> </ul>



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.	<ul> <li>The strike length of the AM5 Disseminated block model is ~200m at the 9628mRL.</li> <li>The longest downdip distance is ~500m and the top of the orebody is ~600m below surface.</li> <li>Width is variable from10m to ~120m</li> </ul>
Estimation and modeling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, method was chosen include a description of computer software and parameters used 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.	<ul> <li>The estimation was done using the following main software packages;</li> <li>Leapfrog Geo Version</li> <li>Datamine Studio RM</li> <li>Snowden Supervisor</li> <li>Wireframing of grade and geological domains using underground and surface drilling was completed in Datamine and Leapfrog.</li> <li>Sample data was composited to 1m downhole lengths and flagged on domain codes generated from 3D mineralized wireframes and 3D lithological wireframes.</li> <li>Directional variography was performed for Ni for each of the domains using Snowden Supervisor software.</li> <li>All estimation was completed at the parent cell scale to avoid any potential geostatistical support issues.</li> <li>Top cut investigations were completed and no top cuts were applied during estimation. Low- and high-grade Ni domains were used instead.</li> </ul>
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	<ul> <li>This model is the second resource estimate for the AM5         Nickel Sulphide Deposit. The first was done by Xstrata prior             to acquisition     </li> <li>The resource model volumetrics were compared to the         previous model and variances can be explained due to             additional data and varying modelling techniques.</li> <li>AM5 was mined and extensive production data is available.</li> <li>Estimation validation techniques included visual comparison         of the composites and estimated blocks, graphs of pass         number versus % filled, swathe plots of the composite         grade's vs the grade of the block model, and swathe plots of         kriging variance, kriging efficiency and slope of regression.</li> </ul>
	The assumptions made regarding recovery of by-products.	Ni is currently considered the only economic product that will be recovered.
	<ul> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> </ul>	<ul> <li>The ratio of Fe to Mg is recognized as influencing standard Ni flotation mill recoveries and both elements have been interpolated into the block model and the ratio has been calculated for each parent block in preparation for further metallurgical work.</li> <li>Sulphur has been estimated into the block model</li> </ul>
	• In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	<ul> <li>A proto model was constructed using parent blocks of 5mE x 5 mN x 5 mRL and sub-blocked to 0.005m x 1.25m x 1.25m.</li> <li>The block size was selected based on drillhole spacing and domain geometry</li> <li>Width along the X axis is highly variable and Datamine's "resolution=0" parameter was used to calculate the sub cell size in the easting direction exactly.</li> </ul>



		<ul> <li>Drillhole spacing varies but is nominally 20m along strike and the data is supplemented by ore drives in mined areas.</li> </ul>
		<ul> <li>Parent cell estimation was used to avoid any potential statistical support issues that may arise from using subcells.</li> </ul>
		■ The size of the search ellipse was based on the results of QKNA and the Ni variography for each domain. Three nested search passes were used with most of the samples falling within the 1st two passes. The 1st pass was set at 28mX by 21mY by 31mZ with a minimum and maximum number of samples set at 4 and 36 respectively.
		<ul> <li>A maximum number of samples from any particular borehole were set at 30. This prevents a disproportionate number of samples from any borehole having an undue influence on the estimate.</li> </ul>
	<ul> <li>Any assumptions behind modeling of selective mining units.</li> </ul>	No assumptions were made regarding the modelling of selective mining units
		<ul> <li>Longhole stoping is the planned mining technique and the mining will be controlled by a cut-off grade and minimum mining width.</li> </ul>
	<ul> <li>Any assumptions about correlation between variables.</li> </ul>	No correlation other than Sulphur and Nickel between geochemical elements was observed.
	<ul> <li>Description of how the geological interpretation was used to control the resource estimates.</li> </ul>	Mineralised zones were digitised using explicit and implicit techniques by WSA and independent Geologists
		<ul> <li>Polygons were snapped to both underground and surface drilling intercepts. Each wireframe is representative of a grade domain, and used in compositing and estimating to ensure high grades were not smeared into the low-grade zones and vice versa.</li> </ul>
		<ul> <li>Wireframe triangulations were created from digitised polygons, and subdivided into domains as necessary, while considering geology and / or grade distribution. All triangulations were validated and checked to ensure they are closed and not crossing.</li> </ul>
		<ul> <li>Five primary geological and geostatistical mineralised domains were modelled:</li> </ul>
		<ul><li>High grade (&gt;2.0% Ni)</li></ul>
		<ul><li>Mid-grade (&lt;2.0% Ni)</li></ul>
		<ul><li>Mid low grade (&lt; 1.5% Ni)</li></ul>
		<ul><li>Low grade (&lt;1.0%NI)</li></ul>
		Massive sulphide domain
	<ul> <li>Discussion of basis for using or not using grade cutting or capping.</li> </ul>	<ul> <li>Top cut investigations were completed and no top cuts were applied during estimation. Grade Ni domains were used instead.</li> </ul>
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Estimation validation techniques included visual comparisor of the composites and estimate blocks, graphs of pass number versus % filled, swathe plots of the composite grade vs the grade of the block model, and swathe plots of kriging variance, kriging efficiency and slope of regression
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages were estimated on a dry basis.



Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.  The basis of the adopted cut-off grade(s) or quality parameters applied.	<ul> <li>The resource is reported above 1.5% Ni cut off grades for disseminated material and 1.0% Ni for Massive material</li> </ul>
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 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.	The mining method selected is top-down, longhole stoping with paste backfill, with a centre out mining sequence.  Sequence.
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.	<ul> <li>The processing plant will consist of a tertiary crushing circuit to reduce the ore size to 12mm before ball milling to p80 106µm. Froth flotation will then be used to separate the valuable minerals as a concentrate. The concentrate will be reground to 40µm in an Isa mill prior to cleaner flotation to produce final product concentrate. Ball mill comminution and froth flotation are commonly used in mineral processing to treat nickel sulphide ores.</li> <li>The final concentrate will be filtered using a plate and filter and stored in the existing concentrate storage shed at Cosmos, prior to being trucked to port at Geraldton for sale.</li> <li>The CP has taken metallurgical factors into account when developing including the nature of the ore and the influence of elements such as MgO and FeO.</li> </ul>
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.	<ul> <li>Potential waste and process residue disposal sites have been identified during a pre-feasibility study and are not going to deviate much from previous sites using during past open cast and underground mining at Cosmos.</li> <li>Tailings will be utilized for paste fill underground with the excess being deposited in the existing TSF along with the Odysseus tailings. Water will be recovered from the TSF or re-used in the processing plant.</li> </ul>
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.	Bulk densities were determined by the independent laboratory using industry standard methods (pycnometer)
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc),	All data used in the MRE is from competent fresh rock and void spaces within the mineralized zones are not material



	moisture and differences between rock and alteration zones within the deposit.	
	<ul> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul> <li>A total of 4,086 composited pycnometer derived SG determinations were estimated into the block model</li> </ul>
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	<ul> <li>Resource classification is based on a combination of Geological knowledge and confidence in the interpretation, data distribution, estimation passes, Kriging Efficiency (KE) and Slope of Regression (Slope) data analysis.</li> <li>The deposit is classified as JORC Indicated and Inferred. No blocks were classified as Measured</li> </ul>
	Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, and confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	<ul> <li>The definition of mineralised zones is based on a high level of geological understanding by Xstrata and WSA Geologists.</li> <li>It is believed that all relevant factors have been considered in this estimate, relevant to all available data.</li> </ul>
	Whether the result appropriately reflects the Competent Person's view of the deposit.	<ul> <li>The MRE reflects the Competent Person's view of the deposit and the risks associated with the grade and structural continuity.</li> </ul>
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>The MRE has not been independently audited or reviewed in its entirety. Independent Consultants have been involved in the modelling process.</li> </ul>
Discussion of relative accuracy/confi dence	■ Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed 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 qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	<ul> <li>A well-established confidence algorithm was applied to the Ni estimate</li> <li>The algorithm ranks the following Kriging Quality parameters for each block:         <ul> <li>Number of samples used to estimate</li> <li>Kriging Efficiency</li> <li>Search Volume</li> </ul> </li> <li>Slope of regression was also reviewed for each block before a nominal classification code was applied.</li> <li>The classification code provides a guideline for further classification based on geological and mineralization continuity</li> </ul>
	■ 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.	The MRE Statement relates to local estimates
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The AM5 deposit has been mined and global estimates are consistent with production data.



# **JORC 2012 TABLE 1: WESTERN GAWLER JOINT VENTURE**

# **SECTION 1: SAMPLING TECHNIQUES AND DATA**

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Exploration targets were tested and sampled from diamond drilling (DD) core, and holes were mostly drilled perpendicular to the strike (NE-SW) of the stratigraphy.</li> <li>Drill holes were located with handheld GPS.</li> <li>DD holes were used to obtain high quality samples that were fully oriented and logged for lithological, structural, geotechnical attributes. Each sample of diamond drill core submitted to ALS laboratories at Malaga, Perth. All sampling was conducted under WSA QAQC protocols which are in accordance with industry best practice.</li> <li>Diamond drill core (NQ2) is 1/4 core sampled on geological intervals (0.2m - 1.5m) to achieve sample weights under 3kgs.</li> <li>Samples were crushed, dried and pulverised (total prep) to produce a sub sample for analysis by 4 acid digest with an ICP/MS and FA/ICP (Au, Pt, Pd) finish.</li> </ul>
Drilling Techniques	■ Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).	<ul> <li>Exploration targets are tested using DDH drilling. Holes were drilled between 60-90 degrees.</li> <li>A track-mounted Sandvik DDH rig is used</li> <li>Diamond drilling comprises PQ2, HQ3 and NQ2 sized core.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias</li> </ul>	<ul> <li>Diamond core recoveries have been logged and recorded in the database</li> <li>Diamond core are logged and recorded in the database. Overall recoveries are &gt;95% and there was no core loss issues or significant sample recovery problems. Core loss is noted where it occurs.</li> <li>Diamond core was reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers.</li> </ul>



		The drilling by diamond core method has high recoveries.
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc)</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Geological logging is recorded and validated in 'Ocris' Logging Software (Toughbook platform) &amp; stored in an Acquire database.</li> <li>Drill core is logged for lithology, mineralogy, mineralisation, weathering, fabric, grainsize, colour, structure, and other relevant features.</li> <li>Geotechnical logging was not completed due to the nature of drill method.</li> <li>Core is photographed both in wet and dry form.</li> <li>All holes have been logged from the surface to the end of hole.</li> <li>Petrology is used to verify the field geological logging.</li> </ul>
Sub-sampling techniques and sampling preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Diamond core is sampled as either quarter or half core; cut by ALS Perth .</li> <li>Sample preparation follows industry best practice involving oven drying, coarse crushing and pulverising.</li> <li>The field crew prepares and inserts the QAQC certified reference materials into the relevant calico bags.</li> <li>OREAS and Geostats standards have been selected based on their grade range and mineralogical properties, with approximately 12 different standards used.</li> <li>Standards and Blanks are inserted approximately every 25 samples.</li> </ul>
Quality of assay data laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>All samples are processed by ALS Minerals (Australian Laboratory Services P/L) in Perth, Western Australia</li> <li>All drill samples are subjected to ICP-MS (ME-MS61 and ME-MS61r for selected EOH samples) analysis using nitric, perchloric, hydroflouric and hydrochloride acid digest.</li> <li>All samples are also assayed for PGE's using PGM-ICP23</li> <li>Standards and blanks are routinely used to assess company QAQC (approx 1 standard for every 25-50 samples).</li> <li>Certified reference materials are included in all batches dispatched at an approximate frequency of 1 per 25 samples, with a minimum of two per batch.</li> <li>Field duplicates are inserted into submissions at an approximate frequency of 1 in 25, with placement determined by Nickel grade and homogeneity. Lab checks, both pulp and crush, are taken alternately by the lab at a frequency of 1 in 25.</li> <li>Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots.</li> <li>Evaluations of standards are completed on a monthly, quarterly and annual basis using QAQCR.</li> </ul>



Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>Primary data was collected using Ocris logging software spreadsheets, on Toughbook computers.</li> <li>All data is validated by the supervising geologist and sent to WSA Perth for further validation and integration into an Acquire database.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Drill holes were located using hand held GPS.</li> <li>Elevation data is captured with handheld GPS, and cross referenced with local topographical maps,</li> <li>Downhole Survey Data is collected using a digital Reflex survey tool,</li> <li>MGA94 Zone 53 grid coordinate system is used.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Drill holes are located and specifically planned according to target location and stratigraphic location.</li> <li>Drillhole spacing at Mystic varies according to the nature of the target type.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>The majority of the drill holes are drilled at 60 degrees to achieve the best possible intersection angle in steeply dipping terrane.</li> <li>Heritage and/or environmental constraints may prevent some ideal drilling solutions.</li> <li>No orientation-based sampling bias has been observed in the data, intercepts are reported as down-hole lengths.</li> </ul>
Sample Security	The measures taken to ensure sample security.	All samples are captured and prepared for transport onsite under the supervision of WSA staff.
Audits and Reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>Adrian Black of Newexco Pty Ltd (a member of the AIG), an independent exploration company, has reviewed the data and sampling techniques employed by WSA.</li> </ul>

# **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	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> </ul>	<ul> <li>The Wester covering signs 6087 (formerly Electronic E</li></ul>	ome 4,44 erly EL 50 L5200), E 5880 (fo Resource /) Agreer JV Proje d Joint V in) Pty Li by Iluka	8km2, of the property of the property EL Ses Ltd / Whenent. The property of th	which 5 248 (form of EL59 4440) estern sts of 5 preement d Western Pts of 5 preement d Western d Western d Western d Western	5 are he merly E 939 is opera Areas L explora nt (FIJV ern Area	Id 100% L 5199) ated until tion lice (A) between	der the harden senses ween lied, al	a. EL 249 e nd Joint under a luka I of which
Exploration done by other parties.	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>The project of its extent work, and its Equinox (B Sands). It is effectivene</li> <li>The South stratigraph tenure</li> </ul>	sive gold more rece ase Meta s deemed ss. Australia	I, titaniun ently by G ils and Go I that the in Govern	n, Iron a Sunson old) and previou	and nick Resour I lluka F us explo as perfo	kel targorces Lin Resource oration	et ger nited ces Lt was d	neration (Nickel), d (Mineral of variable of spaced
		■ The succes				illing is	low, w	hile th	e AC and
		<ul> <li>Gravity, Ma been used</li> </ul>	igneto Te	ellurics ar	nd Airbo				ics have
		■ The histori							tive.
Geology	Deposit type, geological setting and style of mineralisation.	The Western Someone Mesoprote metamorph mafic and the Similarly accumulation.	outh Aust rozoic or nic grade ultramafi ged terra ons of ni	ralia. The ogenic be basemer c intrusive nes globa ckel and	Fowler elt comp at lithologes. ally con copper	r Domai prised c ogies ai tain sig sulphic	in is a of medion nd your nificant des.	um to nger fo	high elsic,
		<ul> <li>Whilst not for orogenia</li> </ul>							
Drill hole Information	<ul> <li>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:</li> </ul>	All collar rela reported assa table contain	ted infor	mation pe are inclu	rtainin ided wi	g to the thin the report.	locatio explor	n of t	he
	<ul> <li>Easting and northing of the drill hole collar</li> </ul>	HOLEID	Easting	Northin g	RL	EOH Depth (m)	Туре	DIP	Azimuth
	elevation or RL (Reduced Level –	20WGDD0002	236402	6508650	50	450.3	DD	-60	120
	elevation above sea level in metres)	20WGDD0003	236507	6508652	69	96.7	DD	-90	0
	of the drill hole collar	20WGDD0004	236688	6509195	76	114.7	DD	-90	0
	<ul><li>dip and azimuth of the hole</li><li>down hole length and interception</li></ul>	20WGDD0005	305078	6603313	213	450.3	DD	-60	290
	depth	20WGDD006	305111	6603315	215	472.8	DD	-60	290
	hole length.	20WGDD007	305140	6603282	215	621.4	DD	-60	290
	If the exclusion of this information is	20WGDD008	294003	6594425	162	299	DD	-65	050
	justified on the basis that the	20WGDD009	290613	6589400 6588995	135	348.4 201.4*	DD	-60 -60	120

information is not Material and this exclusion does not detract from the

20WGDD0010

290300

6588995

140

201.4\*

DD

115

-60



	understanding of the report, the Competent Person should clearly explain why this is the case.	Datum MGA94 (Z53)
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>Standard weighted averaging of drill hole intercepts were employed. No maximum or minimum grade truncations were used in the estimation.</li> <li>The reported assays have been length weighted. A lower arbitrary 0.2% Ni cut-off is applied, with no top cut applied. High grade intercepts internal to broader zones of mineralisation are reported as included intervals.</li> <li>Metal equivalents have not been used</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	■ Drill hole intersections may not be true widths
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.	■ Included within report
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.	All relevant assay results have been 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,	Multi-element analysis is conducted routinely on all samples for a base metal and PGM suite and potentially deleterious elements.



	groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Exploration within the Western Gawler Project is ongoing.</li> <li>At this stage of the exploration program, the nature of the geological model is evolving. Details of further work and will be forthcoming as the project progresses.</li> </ul>