# **ACTIVITY REPORT**

For the period ending 30 September 2019



# STRONG START TO FY2020, ODYSSEUS MINE DEVELOPMENT ON TRACK

# **SEPTEMBER QUARTER 2019 HIGHLIGHTS**

- Mine production of 5,805 nickel tonnes
- Mill production of 5,259 nickel tonnes (FY20 guidance range of 21,000 to 22,000 tonnes for full year)
- Unit cash cost of nickel in concentrate of A\$3.06/lb (FY20 guidance of A\$2.90/lb to A\$3.30/lb)
- Nickel sales of 5,051 nickel tonnes
- Net cashflow of A\$21.6m increased cash at bank to A\$165.9m (June quarter A\$144.3m)
- Cash at bank, plus nickel sales receivables, totalled A\$207.3m (June quarter A\$157.1m)
- Kidman change of control transaction completed, delivering A\$33.1m to Western Areas
- Strong progress at the Odysseus underground mine development

Western Areas Managing Director, Mr Dan Lougher, said the September quarter produced another consistent performance in line with production and cost guidance across the operations, which combined with increased nickel prices provided strong operational cashflow.

"It is also very exciting to see the construction of the Odysseus mine advancing as planned, underpinning the development of our next long-life nickel sulphide operation."

Western Areas ("WSA" or the "Company") (ASX: WSA) is pleased to report a strong quarter of cashflow generation, where the operations have performed in line with expectations, meeting all production and cost guidance metrics. The construction programme for the Odysseus mine is making excellent progress and remains on schedule, with this long-life project expected to underpin Western Areas' long term future of profitable nickel production.

The Forrestania operation continued to operate in line with plan, producing 5,259ktn of nickel in concentrate for the quarter, generating nickel sales of 5,051 nickel tonnes in concentrate and an underlying strong free cashflow of A\$21.6m. Cash plus nickel sales receivables increased to A\$207.3m (June quarter A\$157.1m) confirming the robust underlying business. The higher debtors balance, driven by the stronger nickel price, is expected to be released into cash during the December quarter.

Ongoing underground and surface infrastructure construction continued at the Odysseus mine with significant works being completed on the life of mine pump stations and de-watering reticulation systems. Further, the dismantling of the shaft headgear and winder in South Africa has been completed, with all components removed from site safely. The anticipated delivery date for the shaft hoisting components into Perth will be during the third quarter of FY2020. The Company also successfully recruited experienced project construction personnel.

Work continued with mining studies for the AM5/6 deposits at Odysseus, with the potential to mine these deposits providing both upside and optionality within the mining production sequences of the Odysseus mine.

The nickel price has reacted strongly to the tightening supply situation that is developing in the market, closing the quarter at a spot price of US\$7.80/lb (current spot US\$7.48/lb). During the quarter the Indonesian government brought forward a ban on the export of nickel laterite ore by two years that will come into effect on 1 January 2020 which, combined with the continued drawdown of LME stockpile material, sees the quantity of available nickel on the LME exchange fall to its lowest level since 2011, currently reporting at 87.1kt of available nickel.

Western Areas has commenced offtake discussions with various market participants regarding the Company's offtake agreements that expire in early 2020. The continued strengthening in the nickel market and initial indications provide considerable encouragement that more favourable terms will be achieved at the completion of these offtake negotiations.



# PRODUCTION OVERVIEW

Itam	l lmi4	2019/2020		2018/2019	
Item	Unit	Sep Qtr	Jun Qtr	Mar Qtr	Dec Qtr
Total Ore Mined	tonnes	147,356	133,312	141,595	139,528
Mine Grade	Ni %	3.9%	4.1%	4.3%	4.2%
Total Nickel Mined	tonnes	5,805	5,423	6,066	5,851
Ore Processed (Milling/Concentrator)	tonnes	149,729	152,329	146,935	154,517
Processed Grade	Ni %	3.9%	4.0%	4.2%	4.0%
Average Processing Recovery	%	89%	88%	88%	88%
Total Nickel in Concentrate	tonnes	5,259	5,433	5,448	5,415
Total Nickel Sold	tonnes	5,051	5,890	5,189	5,386
Contained Nickel in Stockpiles	tonnes	3,315	3,317	4,510	4,413
Cash Cost Nickel in Concentrate	A\$/lb	3.06	2.96	2.82	3.15
Cash Cost Nickel in Concentrate	US\$/lb	2.09	2.07	2.01	2.26
Exchange Rate	US\$/A\$	0.69	0.70	0.71	0.72
Net Nickel Price (before payability applied)	A\$/lb	11.50	8.09(*)	8.31	7.01

<sup>(\*)</sup> The June Q realised price has been adjusted to reflect post June quarterly report QP adjustments in the 30 June 2019 financial statements.

Western Areas has Australia's highest grade nickel mines and is a low unit cash cost producer. Its main asset, the 100% owned Forrestania Nickel Project, is located 400km east of Perth in Western Australia. Western Areas is also Australia's second largest independent sulphide nickel miner, producing approximately 22,000 to 25,000 nickel tonnes in ore per annum from its Flying Fox and Spotted Quoll mines - two of the lowest cost and highest grade nickel operations in the world.

The key growth project is the Odysseus mine located at the Cosmos Nickel Operation. With a long, ten year mine life and 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 exploration interests in Canada through shareholdings in Grid Metals Corp (TSXV:GRDM). Additionally, the Company has exposure to the emerging lithium market via an exploration joint venture with Kidman Resources Limited across the northern Forrestania tenements.

The Board remains focused on the core business of low cost, 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.

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#### CORPORATE AND FINANCING

#### **CASHFLOW**

Net cashflow of A\$21.6m for the period resulted in a closing cash balance of A\$165.9m at quarter end (June quarter A\$144.3m). Cash at bank plus nickel sales receivables totalled A\$207.3m (June guarter A\$157.1m). The significant cashflow items during the guarter included:

- Receipt of A\$33.1m from the sale of the Company's shareholding in Kidman Resources Ltd;
- Operating cashflow was A\$18.3m, benefitting from the significant quarter on quarter increase in the nickel price (pre-payable deduction) reporting at A\$11.50/lb (June quarter A\$8.09/lb);
- Odysseus mine development and construction expenditure of A\$14.0m; and
- Payment of the annual insurance premiums.

Sustaining mine development and capital expenditure at Forrestania totalled A\$10.7m (March quarter A\$11.2m). Growth expenditure for the Odysseus mine development at Cosmos of A\$14.0m (June guarter A\$7.6m), primarily related to ongoing underground pump station construction works and the dismantling and refurbishment of the shaft haulage infrastructure in South Africa. Exploration expenditure was A\$4.8m for the quarter.

The increase in the nickel price over the guarter has also led to an increase in the value of nickel sales receivables (not volumes), which, in line with standard payment terms, is expected to convert to cash in the coming guarter.

#### **HEDGING**

When pricing is supportive, the Company manages nickel price and foreign exchange risk with a combination of short term 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 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 – FY20							
US\$ Hedging -	Collar Options	Nickel Hedging	- Collar Options					
US\$ Hedged	37,500,000	Nickel tonnes	1,200					
Average Put	US\$0.6645	Average Put	US\$12,500					
Average Call	US\$0.6990	Average Call	US\$15,235					
US\$ Hedging	g – Forwards	Nickel Hedgir	ng – Forwards					
US\$ Hedged	-	Nickel tonnes	3,000					
Average Rate	-	Average Rate	US\$15,973					

#### **KIDMAN RESOURCES LIMITED (KIDMAN)**

During the quarter a Scheme of Arrangement for Wesfarmers Limited (Wesfarmers) to acquire 100% of Kidman at \$1.90 per share was finalised. Western Areas received A\$33.1m in exchange for its shareholding of 17.4m shares in Kidman. This is an excellent outcome for Western Areas, realising significant value from a shareholding received in exchange for two non-core tenements and an exploration farm-in agreement over selected tenements in the northern area of Forrestania. Western Areas' exploration joint venture with Kidman is unaffected, and will continue under Wesfarmers ownership of Kidman, maintaining the Company's participation in any further exploration success on the joint venture tenements. The Company will be subject to capital gains tax on a portion of the proceeds in its FY20 income tax return, currently estimated at A\$7.5m.



#### MINE SAFETY AND ENVIRONMENT

#### **SAFETY**

There were no Lost Time Injuries (LTI) during the guarter and the Total Recordable Incident Frequency Rate (TRIFR) stands at 4.47. The Emergency Response Team (ERT) training included Occupational First Aid and Bushfire courses using external specialised consultants.

An ERT member participated in a Department of Fire and Emergency Services (DFES) Advanced Bush Fire Fighting course organised by a local brigade, which underlines the good working relationship between the ERT and local community teams.

Selected burn-off programs around Spotted Quoll critical infrastructure were also completed.



ERT first aid course



ERT confined space training

#### **ENVIRONMENT**

#### Forrestania (FNO)

No reportable environmental incidents were recorded during the quarter and the environmental team completed all required compliance monitoring and reporting.

The three-year Mine Closure Plan was completed and submitted in September, which included a review and update of FNO closure rehabilitation plans, a Surface Water Management Plan and an Acid Mine Drainage Management Plan. The environmental team also completed all required compliance monitoring including annual reporting to both the Department of Mines and Industry Regulation (DMIRS) and the Department of Water and Environmental Regulation (DWER).

The annual rehabilitation program was completed in July with the reshaping of the Spotted Quoll waste rock dump and drainage repairs to the Lounge Lizard waste rock dump. The programme included remedial earthworks and the planting of 24,000 seedlings by specialist contractors over approximately 2.5ha.

An aboriginal heritage survey was also successfully completed with the Ballardong people to obtain heritage clearance for an upcoming exploration programme.

#### Cosmos (CNO)

No reportable environmental incidents were recorded during the guarter and the environmental team completed all required compliance monitoring and reporting.

Work commenced on excavating a cut-off trench around Water Management Pond 9 (WMP9) to improve seepage management.

An aboriginal heritage survey over the Yakabindie bore-field was also successfully completed by Tjiwarl representatives.



WSA and Tjiwarl representatives from the Yakabindie bore-field heritage survey



# MINE AND MILL PRODUCTION STATISTICS AND CASH COSTS

Tonnes mined	Unit	2019/2020		2018/2019	
Tonnes mined	Unit	Sep Qtr	Jun Qtr	Mar Qtr	Dec Qtr
Flying Fox					
Ore Mined	tonnes	61,414	57,213	56,386	59,309
Grade	Ni%	3.7%	4.2%	4.5%	4.3%
Flying Fox Nickel Mined	tonnes	2,280	2,381	2,550	2,574
Spotted Quoli					
Ore Mined	Tonnes	85,942	76,099	85,209	80,219
Grade	Ni%	4.1%	4.0%	4.1%	4.1%
Spotted Quoll Nickel Mined	Tonnes	3,525	3,042	3,516	3,277
Total Ore Mined	Tonnes	147,356	133,312	141,595	139,528
Grade	Ni%	3.9%	4.1%	4.3%	4.2%
Total Nickel Mined	Tonnes	5,805	5,423	6,066	5,851

#### **FLYING FOX**

#### **Mine Production**

Production was 61,414 tonnes of ore at an average grade of 3.7% nickel for 2,280 nickel tonnes. Ore production was predominately (75%) derived from long-hole stoping (LHS) and the remainder (25%) from ore drive development.

LHS production was sourced solely from the T5 area, namely from the 460, 425, 370, 295 (11kt @ 4.1% Ni), 215 and 200 (4.7kt @ 6.1% Ni) stopes. Associated paste-filling of stope voids resulted in 13,156m³ of paste poured.

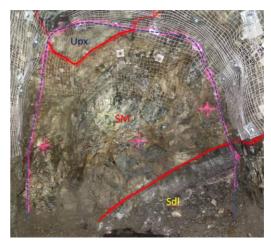
#### **Mine Development**

There was 765m of total jumbo development, including 236m of single boom in the 'old Flying Fox' orebody and 529m of both twin and single boom in the lower areas of the mine.

There was 20m of capital vertical development to establish an escape-way ladder between the 160 and 200 levels.



160 ore drive (4.5m W x 4.5m H) with a face grade of 5.8% Ni



1205 ore drive (4.0m W x 4.5m H) with a face grade of 5.3% Ni



#### SPOTTED QUOLL

#### **Mine Production**

Spotted Quoll production comprised 85,942 tonnes of ore at an average grade of 4.1% nickel for 3,525 nickel tonnes. Ore production was sourced predominately from ore drive development (53%) with the remainder (47%) from LHS.

The 'twin-boom area' (TBA) saw production completed in the 660 and 627 levels, with ongoing production from the 610 and 595 levels. The 'single-boom area' (SBA) continued production from the 920, 852, 842, 825, 819, 818, 804 and 795 levels, and commencement of the 788 level early in the quarter.

#### Mine Development

Total jumbo development for the quarter was 1,038m, which included 125m of capital decline development. During the quarter, 261m of lateral capital development and 110m of operating waste development was also completed, which included 90m of paste-fill development to facilitate slot drilling.

The 'Stage 2' levels had 527m of ore drive development completed between the 550 and 505 levels and the SBA had 15m of ore drive development completed in the 818-secondary level.



TBA 520 ore drive (4.5m W x 4.5m H) with a face grade of



TBA 535 ore drive (4.5m W x 4.5m H) with a face grade of 6.4% Ni

#### COSMIC BOY NICKEL CONCENTRATOR

Tonnes milled	Unit		2019/2020		
Torries fillieu	Offic	Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr
Total Milled Ore	tonnes	154,517	146,935	152,329	149,729
Grade	%	4.0%	4.2%	4.0%	3.9%
Ave. Recovery	%	88%	88%	88%	89%
Nickel in Concentrate Produced (i)	tonnes	5,415	5,448	5,433	5,259
Nickel in Concentrate Sold	tonnes	5,386	5,189	5,890	5,051

Includes MREP Nickel tonnes produced. (i)

The Cosmic Boy Concentrator processed 149,729 tonnes of ore at an average grade of 3.9% nickel for a total of 35,606 tonnes of concentrate grading 14.8% nickel, resulting in 5,259 nickel tonnes produced at a recovery of 89.3% and an average concentrator availability of 96.0%. Maintenance work for the quarter included a planned 48hour shutdown (fine ore bin, concentrate thickener and ball mill drive train), plus several unplanned downtime events, including a ten-hour Western Power outage and a two-hour event outage caused by a bird strike in the switchyard.

A total of 35,737 tonnes of concentrate were delivered for sale during the quarter, containing 5,051 nickel tonnes, which included the Mill Recovery Enhancement Project product.

Other unit sales costs for the quarter were royalties at A\$0.27/lb and concentrate transport of A\$0.38/lb of nickel in concentrate delivered to customers.

#### **Stockpiles**

Ore stockpiles at the end of the quarter totalled 75,638 tonnes of ore at 3.84% nickel for 2,907 nickel tonnes, representing one and half months of mill feed. The concentrate stockpile at quarter end was 2,875 tonnes at an average grade of 15.8% nickel, containing 408 nickel tonnes.



Maintenance on the mill drive train during the planned shutdown

Stockpiles	Unit	2019/2020	2018/2019					
Stockpiles	Oilit	Sep Qtr	Jun Qtr	Mar Qtr	Dec Qtr			
Ore	tonnes	75,638	77,098	96,114	101,455			
Grade	%	3.8%	3.8%	3.8%	3.7%			
Concentrate	tonnes	2,875	2,390	5,481	4,093			
Grade	%	15.8%	15.1%	15.1%	15.6%			
Contained Nickel in Stockpiles	tonnes	3,315	3,317	4,510	4,413			

#### **Cash Costs**

Financial Statistics	Unit	2019/2020	2018/2019					
Fillancial Statistics	Offic	Sep Qtr	Jun Qtr	Mar Qtr	Dec Qtr			
Group Production Cost/lb								
Mining Cost (*)	A\$/lb	2.26	2.24	2.11	2.38			
Haulage	A\$/lb	0.06	0.07	0.06	0.07			
Milling	A\$/lb	0.55	0.46	0.48	0.51			
Admin	A\$/lb	0.22	0.22	0.20	0.22			
By Product Credits	A\$/lb	(0.03)	(0.03)	(0.03)	(0.03)			
Cash Cost Ni in Con (***)	A\$/lb	3.06	2.96	2.82	3.15			
Cash Cost Ni in Con (***)	US\$/lb(**)	2.09	2.07	2.01	2.26			
Exchange Rate US\$ / A\$		0.69	0.70	0.71	0.72			

<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 cash cost of production for nickel in concentrate (excluding smelting/refining charges, concentrate logistics and royalties) was A\$3.06/lb (US\$2.09/lb) for the quarter. The September quarter cost performance was around the mid-point of the full year guidance range, with the quarter on quarter increase in cost impacted by the two day planned maintenance shut down conducted at the Cosmic Boy mill during the period.

<sup>(\*\*)</sup> US\$ FX for Relevant Quarter is RBA average daily rate (Sep Qtr = A\$1:US\$0.69)

<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.

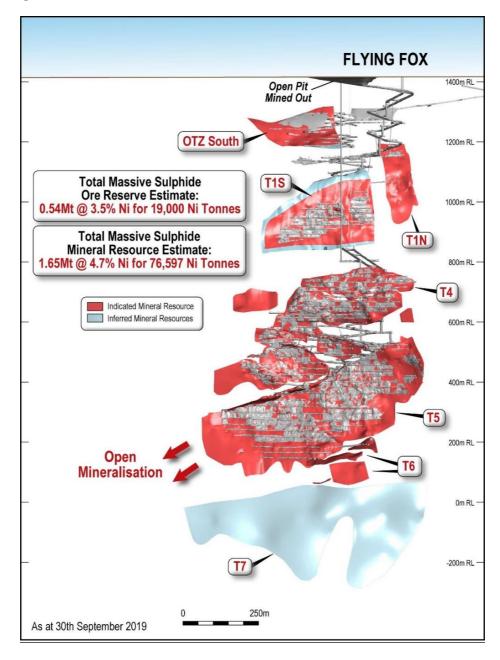
#### **FLYING FOX**

No additional resource extension drilling was completed during the September quarter.

The technical and economic review of the lower grade ore at the Flying Fox mine continued during the guarter, with flotation as the baseline processing logic, plus assessing heap leach amenability. A first pass production target has been completed and is currently being evaluated with a view to including the lower grade ore into the Life of Mine plan.

The Flying Fox Massive Sulphide Mineral Resource, including depletion to the end of September 2019, stands at 1.65Mt of ore at a grade of 4.7% Ni for 76,597 nickel tonnes.

The Flying Fox Massive Sulphide Ore Reserve, including depletion to the end of September 2019, stands at 0.54Mt of ore at a grade of 3.5% Ni for 19,000 nickel tonnes.



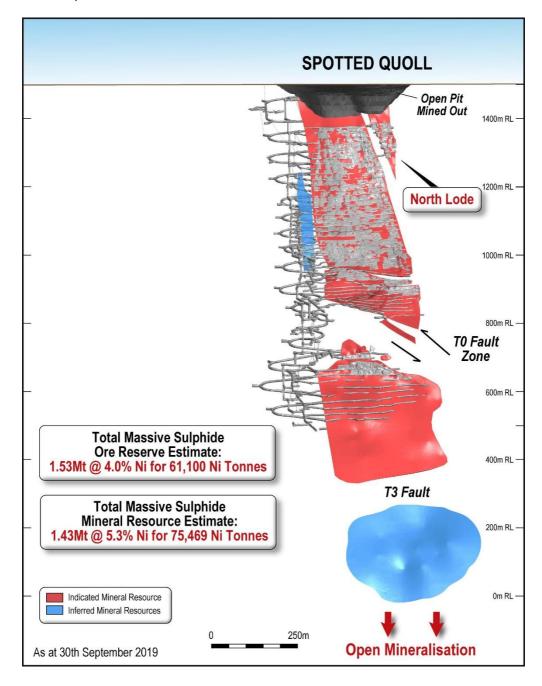


#### **SPOTTED QUOLL**

No underground resource extension drilling took place during the quarter. A Stage 3 surface drilling program to test a thicker north-east trending plunge identified in the previous drilling program will commence in early November, and includes a "parent" and two 'child' drill-holes (total 2,500m).

The Spotted Quoll Mineral Resource, including depletion to the end of September 2019, stands at 1.43Mt of ore at a grade of 5.3% Ni for 75,469 nickel tonnes.

The Spotted Quoll Ore Reserve, including depletion to the end of September 2019, stands at 1.53Mt of ore at a grade of 4.0% Ni for 61,100 nickel tonnes.





# **GROWTH PROJECTS**

#### **COSMOS OPERATIONS**

## **Odysseus Mine**

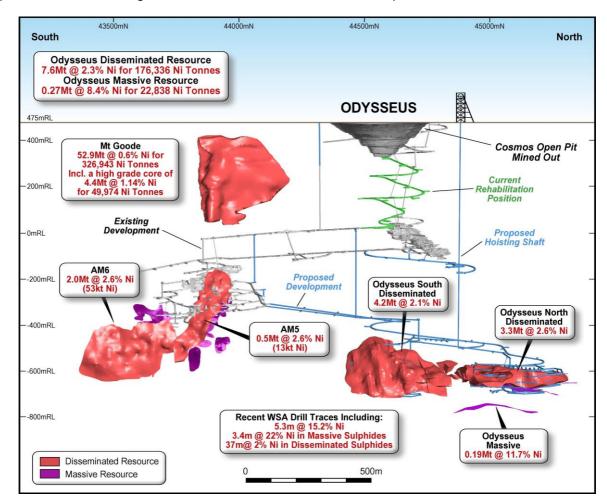
Underground construction of life of mine infrastructure continued including the pumping reticulation system and development to the planned underground central ventilation shaft. Key construction personnel were also recruited in preparation for the commencement of the civil earthworks around the proposed shaft collar.

Main activities included the following:

- Commencement of full-face, lateral jumbo development to the central ventilation shaft location. This is to provide a platform for a planned geotechnical hole and an underground vertical raise-bore (5.0m diameter and 384m depth);
- Casing of the underground rising main bore-holes between the two underground pump stations completed;
- Commencement of the surface to the upper pump station, rising main bore-hole. Hole was at 74m (breakthrough 160m) at the end of the quarter;
- A specialist contractor (SMP and electrical) to construct the two underground pump stations mobilised to site with commissioning of the pump stations planned for the December quarter; and
- 250 rooms commissioned in camp to cater for increased construction activity.

#### **Next Steps:**

- Award of the combined shaft and underground raise-bore tender in the December quarter;
- Continuation of the decline rehabilitation down to the AM5/6 deposits; and
- Completion of the mine design and reserve estimation for the AM5/6 deposits.





#### **Shaft Project Engineering**

## Project Engineering Design

The shaft and materials handling, detailed engineering design (DED) progressed well at 85% complete at quarter end with completion expected in November 2019.

#### Shaft and Winder Project Engineering Work

Good progress was made at 12N mine-site in South Africa with the winder building mechanical and electrical (including the main 3.6MW DC drive) contents dismantled to the ground, stripped and removed without incident. Most of the mechanical components will be reused at Odysseus, subject to a full inspection and testing program.



Empty winder building in mid-August

The various winder components were transported to selected vendor workshops for assessment and testing.

The results of the non-destructive test work (NDT) identified some relatively minor items to be rectified or replaced but overall the assessment found the winder to be in very good condition. The winder original equipment manufacturer (OEM) will undertake the necessary refurbishment or replacement within South Africa to ensure the winder is complete and ready for installation prior to shipping.





Winder components being wrapped and crated for short term storage.

In addition, the headframe structure was dismantled and removed from site. The structure will now be inspected, cleaned and minor modifications carried out to the Odysseus shaft specifications.

Both shaft winder and headgear are expected to be shipped to Perth late in the third quarter of FY2020.







Headgear components being dismantled and prepared for off-site transportation

# MILL RECOVERY ENHANCEMENT PROJECT (MREP)

MREP optimisation work continued during the quarter with a summary below:

- A short term offtake agreement, expiring 30 June 2020, was executed for the ongoing sale of the MREP product;
- The small cyclone recovery circuit (CRC) unit was successfully commissioned to recover the heavier nickel sulphides from the partially leached MREP tailings slurry into the concentrate stream; and
- This CRC product has attracted interest from buyers as a separate product and evaluation will be conducted next quarter.



Cyclone Recovery Circuit installed at Cosmic Boy Concentrator



#### **Mill Scats**

Capital and operating cost estimates for a site-based demonstration scats heap leach (20,000t) were completed and large-scale column leaching test-work continued (one month into a nominal six-month program).

## **NEW MORNING/DAYBREAK PROJECT (NMDB)**

NMDB nickel oxide beneficiation and leaching test-work (with some minor transitional material) commenced with expected completion in the December quarter.

#### **FLYING FOX LOW GRADE (FFLG)**

Large scale column test-work of FFLG ore will commence in the next quarter, following encouraging amenability test-work to investigate heap leach potential at the Flying Fox mine-site. Results to date are encouraging for this low grade material.

#### **EXPLORATION**

#### **OVERVIEW**

At Cosmos, there was a significant ramp-up in drilling activities, with two diamond rigs testing several high-priority targets across the interpreted 9km strike length of the Cosmos ultramafic package, with an emphasis on realising the near-mine potential of the Penelope prospect.

At Western Gawler, the Company completed its first helicopter-supported, air-core drilling program across numerous regional and remote target areas within the Iluka Farm-in and Joint Venture Agreement (FIJVA) in South Australia.

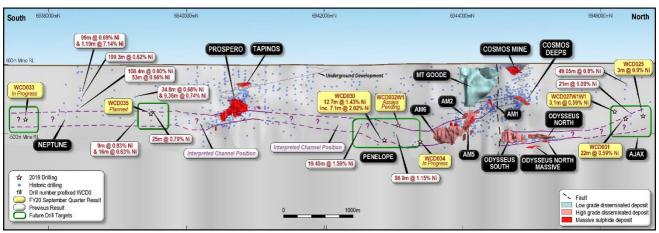
At Forrestania, a review of the recently received seismic report (centred on Spotted Quoll) commenced, coupled with advancement of heritage and environmental surveys at Hatters Hill in support of upcoming regional exploration drilling campaigns.

St George Mining received encouraging news at Mt Alexander, with its maiden drilling program at the Radar Prospect identifying a significant shallow discovery of nickel-copper sulphide mineralisation. Tenement E29/638 is in joint venture between St George Mining (SQG 75%) and Western Areas (WSA 25% free-carried).

#### **COSMOS**

The Company has identified the 2.5km corridor extending between Prospero – Tapinos and Alec Mairs as being of notable exploration potential and strategic significance, with historical drilling intersecting both low-grade disseminated (Mt Goode style) and higher grade, basal-contact-proximal (Alec Mairs style) nickel sulphide mineralisation. In addition, the Company believes the interpreted ultramafic channel, which plays host to the Odysseus resource, is considerably under-explored along its northern flanks (north of Odysseus) and its southern perimeter at Neptune (see long section below).

Drilling activities ramped up significantly at Cosmos across the September quarter, with two diamond rigs testing several high-priority targets along a 9km strike-length of the interpreted prospective ultramafic corridor. In total across the quarter, six targets were successfully drilled for 5,766.3m.



Cosmos Long Section (Looking West)



#### **Ajax**

A total of three holes were completed at Ajax following up on historic intersections (including 49.05m @ 0.8% Ni within CND026) and more recent results returned in FY19, including 21m @ 1.09% Ni from WCD023. Results from all three September quarter holes intersected variable thicknesses of disseminated to blebby sulphides, hosted within mesocumulate to adcumulate ultramafic rocks. The best interval was returned from WCD031, comprising 22m @ 0.59% Ni (from 816m). Based on these results, no further drilling is planned in the immediate vicinity of this program.

	Exploration Results Ajax September Quarter 2019									
HOLE ID	Easting	Northing	RL	ЕОН	Туре	Dip	Azimuth	Width (m)	Ni %	From (m)
WCD025	261182.7	6946593.6	485.2	1104.5	DD	-64	269.2	3	0.9	885.5
WCD027W1W1	261164.7	6946225.2	484.3	873.9	DD	-74	269.9	3.1	0.59	752.5
WCD031	261170	6946397.1	487.0	1036	DD	-76	266	22	0.59	816

#### **Penelope**

Located within the Prospero – Tapinos to Alec Mairs Corridor, the Penelope prospect extends over a 1km target area and is positioned approximately 500m south of the Alec Mairs resource complex. The prospect represents the most significant undertested near-mine target at Cosmos. The Company believes that the target area's proximity to existing and future mine infrastructure at Odysseus and Alec Mairs (AM5/AM6), coupled with its potential to host significant accumulations of nickel sulphides, supports the need to complete a robust drill targeting program to determine its prospectivity.

During the September quarter, two holes were completed to test the interpreted host channel location, with a third hole currently in progress. The first hole of the program (WCD030) was designed north and along strike from several significant, previously reported diamond core nickel intersections including 19.45m @ 1.59% Ni in hole BJD440A and 98.9m @ 1.15% Ni from BJD437C. Results from WCD030 returned an interval of 12.7m @ 1.43% Ni including 7.1m @ 2.02% Ni. Hosted within a weakly foliated adcumulate ultramafic, mineralisation displays a disseminated nature with pentlandite the dominant sulphide present.

A second hole completed during the quarter (WCD032W1) successfully intersected a 29m wide zone of disseminated to blebby sulphides within adcumulate ultramafic. This broader interval is visually encouraging, with assay results pending.

Additional drilling is planned into the December guarter to explore the northern extensions of Penelope as it approaches the Alec Mairs mineral system.

	Exploration Results Penelope September Quarte						mber Quarter	2019		
HOLE ID	Easting	Northing	RL	ЕОН	Туре	Dip	Azimuth	Width (m)	Ni %	From (m)
	261348	6942898.4	469.4	1356.6	DD	-66	265.1	7.8	0.71	1166.3
WCD030		and							1.43	1231.3
	including 7.1 2.02 1232.0							1232.0		

#### **Neptune**

Previous exploration in FY19 centred heavily on understanding and delineating the mineralisation potential at Neptune. Located 2km south of the previously-mined Prospero high-grade nickel deposit, the Neptune prospect is defined by a 1.5km strike length accumulation of high-tenor, disseminated to locally stringer-style nickel sulphide mineralisation. Mineralisation remains open to the north and south, with drilling in the September guarter focusing on testing these two specific target areas as depicted in the attached Cosmos Long Section image above.



One hole commenced during the period, and is still in progress. This drill hole (WCD033) represents the most southerly test attempted to date at Neptune. Although logging and sampling of this hole are in progress, a very significant thick zone of predominantly meso to adcumulate ultramafic is noted, with greater than 240m (approximating true width) of disseminated to blebby nickel sulphide mineralisation intersected.

#### **FORRESTANIA**

#### **Western Ultramafic Corridor**

The Company believes that the Western Ultramafic Corridor, hosting the producing high-tenor nickel mines of Spotted Quoll and Flying Fox, together with the New Morning Mineral Resource, continues to represent a significant exploration opportunity for the discovery of additional nickel sulphide mineralisation.

During the June quarter, the Company, in collaboration with HiSeis Pty Ltd, commenced a study designed to identify the applicability of modern seismic survey techniques to aid future exploration efforts across the Western Ultramafic Belt, with efforts centred on the area immediately surrounding Spotted Quoll Mine.

Final reports from HiSeis have now been received and the Company has commenced an internal review.

#### Hatters Hill - Mt Gibb

A thorough review of the Forrestania southern group of tenements has been ongoing throughout the calendar year, designed to understand the broader prospectivity for nickel sulphides in the region, along with the potential for the district to host significant accumulations of other minerals, including gold and lithium. Particular focus has centred on tenement E74/603, incorporating the Hatters Hill and Mt Gibb localities.

Historic work in the district has primarily had a gold focus, with some drilling activities completed by the Company in 2011. This work, coupled with a soil sampling program completed in 2018, has identified several areas considered worthy of follow-up shallow drill testing. In support of this planned future work, the Company, in collaboration with South West Aboriginal Land and Sea Council (SWALSC) and representatives of the Ballardong People completed a heritage survey in September covering several key areas.



Hatters Hill Heritage survey location

Pending the final recommendations from this survey (report due early October) the Company will finalise environmental approvals in the December quarter and advance to the final stages of drill planning.

#### REGIONAL EXPLORATION (SOUTH AUSTRALIA)

Regional airborne surveys, coupled with detailed on-ground EM and follow-up drilling campaigns over recent quarters, have resulted in a rapidly advancing understanding of the prospectivity trends over the entire Western Gawler Project. This work, coupled with recent and ongoing litho-geochemical studies, has highlighted the importance of the Mystic to Woodford corridor as being an area of increased focus for ongoing exploration targeting.

#### Activity focus:

- Regional helicopter-supported air-core drilling at regional/remote target areas within the Iluka Farm-in and Joint Venture Agreement (FIJVA).
- Completion of a high-definition aeromagnetic survey over the Mystic and Splendour prospect areas.
- Completion of Moving Loop EM surveys over priority airborne electromagnetic (AEM) anomalies and extensional targets at Mystic.
- Expenditure requirement reached for Stage 1 of the Iluka FIJVA Agreement (\$2.75M)



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



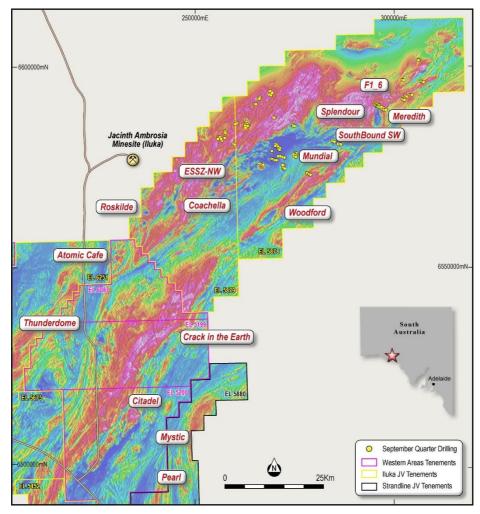
In July 2018, the Company announced an expansion of its Western Gawler exploration strategy via the execution of the FIJVA with Iluka (Eucla Basin) Pty Limited. The Company has moved to establish a series of exploration programs across this ground.

Through the advancement of these exploration programmes late in the current quarter, the Company has reached the required expenditure amount of \$2.75M to complete Stage 1 of the Iluka FIJVA.

Air-core drilling continued during the quarter, with the completion of 174 drill holes (for 11,164m) at 16 prospects including, Meredith, Southbound SW, F1\_6 and F3\_VA12. Drilling focussed on targeting magnetic and gravity anomalies, interpreted to be mafic/ultramafic intrusive bodies, and associated EM anomalies. In a first for the

Company, owing to the remote and logistically challenging nature of the work areas, airborne helicopter support was used for drilling activities during the quarter. The helicopter support method was successful in managing the onground logistical support requirements, while significantly reducing environmental impacts.

Moving loop EM Surveying (MLEM) was completed over seven Airborne EM targets (Iluka VTEM) in the Splendour-Meredith area for a total of 23 survey lines (for 16.2 line kms). Infill surveying at F1\_6 confirmed a previously identified bedrock anomaly of moderate strength, however no additional clear bedrock anomalies were identified.



Western Gawler - September FY20 Quarter Activity



#### **Splendour**

At the Splendour Prospect, encouraging nickel-oxide zones were identified from 600m spaced infill drill-holes completed in the previous guarter, with anomalous results returned of 15m @ 1.14% Ni, including 1m @ 2.27%, in 19WGAC658 within iron-rich clays above weathered ultramafic pyroxenite and 58ppb gold from 19WGAC666, within partially weathered diorite. The drilling confirms a 1.5km long, anomalous Ni-PGE corridor at Splendour, which is associated with a structural zone located along the margin of an interpreted concentric layered intrusive horizon.

	Exploration Results Nickel – Iluka FIJVA September Quarter 2019											
Hole ID	Easting	Northing	RL	ЕОН	Туре	Dip	Azi	Width (m)	Ni %	Cu (ppm)	Pt+Pb (ppb)	From (m)
19WGAC658	290298	6588917	85	81	AC	-90	0	15	1.14	34	63	66
	including								1.67	35	78	75
	and								2.27	43	71	79

#### Southbound SW

A single regional traverse of seven drill-holes was competed at Southbound SW, targeting an interpreted large ovoid shaped intrusion. Assay results returned regionally anomalous results of 6m @ 62ppb Au, and 312ppb Pt + Pd from 19WGAC752, within sheared/altered amphibolite. These results are encouraging, given the broad spaced nature of drilling and will be evaluated in a regional targeting context in the coming quarter.

	Exploration Results Gold – Iluka FIJVA September Quarter 2019									
HOLE ID	Easting	Northing	RL	ЕОН	Туре	Dip	Azimuth	Width (m)	Au ppb	From (m)
19WGAC666	290849	6588687	85	50	AC	-90	0	1	58	48
19WGAC752	284158	6582283	109	100	AC	-90	0	6	62	81

#### Regional Targets

During the guarter assay results were received for seven additional target areas drilled within EL5878.

Prospective mafic and ultramafic host rocks were intersected at Meredith, F3\_VA12 and Mundial, however no geochemically anomalous results were reported from these areas. Further assay results from the remaining prospects are pending.

The current drilling campaign within the Iluka FIJVA area will be completed in early October at Splendour, with infill air-core drilling to refine target areas, which marks the completion of an extensive and successful exploration programme within the FIJVA in 2019. Drilling will now focus on the Mystic oxide zone in the upcoming December quarter.

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

Activities focussed on the Mystic Project during the quarter with MLEM and aeromagnetic surveys completed. Work also included planning and preparation for additional air-core drilling across the Mystic oxide zone in the coming quarter.

#### **Mystic Nickel Oxide Zone**

At Mystic, previous work has confirmed the presence of orthocumulate ultramafic rocks containing trace level magmatic sulphides, which underlie the significant oxide intersections reported in the March quarter. Results include 18m @ 2.06% Ni from hole 19WGAC444 (including 5m @ 4.29% Ni).

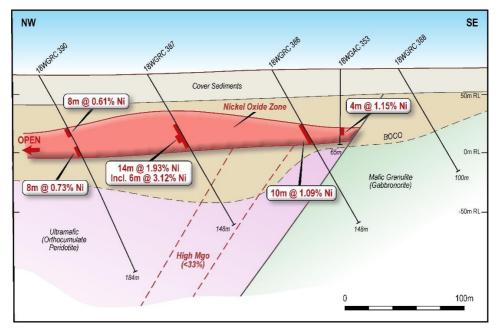
During the quarter, a detailed 25m-spaced, low-altitude aeromagnetic survey was completed over the Mystic project. The resulting imagery will enhance interpretation of the ultramafic intrusive rocks within this corridor.

Moving Loop EM surveying, for a total of 12 lines (for 33.4-line kms), was also completed at Mystic during the quarter. Infill surveying has refined the spatial position of a strong IP source near surface, which has resulted in the



interpretation of a low-conductance, steeply dipping bedrock conductor over 600m strike length. This target will be assessed for deeper bedrock targeting in early 2020. Survey extensions completed to the south of Mystic did not identify any further EM anomalies.

In the December quarter, air-core drilling is planned across the Mystic nickel oxide zone to infill and extend drilling coverage along strike.



Mystic nickel oxide prospect (looking northeast)

### Strandline Farm-in and Joint Venture (WSA earning up to 90%) 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 higher debtors balance, driven by the stronger nickel price, is expected to be released into cash during the December quarter." and, "The continued strengthening in the nickel market and initial indications provide considerable encouragement that more favourable terms will be achieved at the completion of these offtake negotiations."

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 ORE RESERVE AND MINERAL RESOURCE STATEMENT

•		Tonnes	Grade Ni%	Ni Tonnes	Classification	JORC Code
Ore Reserves		- Formes	Grade NI/	- Ni-Tolliles	Glassification	
Flying Fox Area		543,700	3.5	19,000	Probable Ore Reserve	2012
2. Spotted Quoll Area		040,700	0.0	10,000	1 lobuble die Rederve	2012
		1,526,300	4.0	61,100	Probable Ore Reserve	2012
3. Diggers Area		1,020,000				
33	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
TOTAL	FORRESTANIA ORE RESERVE	4,179,000	2.7	110,900		
4. 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
	AL COSMOS ORE RESERVE	8,135,600	2.0	164,520	1 Tobable Ole Reserve	2012
	STERN AREAS ORE RESERVE	12,314,600	2.2	275,420		
Mineral Resources						
1. Flying Fox Area						
	T1 South	144,125	4.6	6,625	Indicated Mineral Resource	2012
		45,041	2.3	1,036	Inferred Mineral Resource	2012
	T1 North	54,217	5.1	2,736	Indicated Mineral Resource	2012
	OTZ Sth Massive Zone	167,495	6.0	10,030	Indicated Mineral Resource	2012
	T4 Massive Zone	212,835	5.8	12,364	Indicated Mineral Resource	2012
	T5 Massive Zone + Pegs	689,944	5.2	35,857	Indicated Mineral Resource	2012
	T6 Massive Zone	84,388	5.6	4,716	Indicated Mineral Resource	2012
	T7 Massive Zone	240 700	4.9	2.222	Inferred Mineral Resource	2042
Tax-110.1	T7 Massive Zone	248,720 1.646,765	1.3	3,233	ililerieu iviirierai Kesource	2012
Total High (		,,	4.7	76,597	Indicated Mine I D	0004
	T5 Flying Fox Disseminated Zone	197,200	0.8	1,590	Indicated Mineral Resource	2004
		057.000	4.0	0.400	Inferred Mineral Resource	2004
Tetal Disease	animated Elica Englandary Linear	357,800	1.0 0.8	3,460	Interred Mineral Resource	2004
	minated Flying Fox/Lounge Lizard	4,983,000		41,050		
Total FF/LL		6,629,765	1.8	117,647		
2. New Morning / Daybr		0.40.400	0.0	44.004	In directed Mineral December	0040
	Massive Zone	340,126	3.3	11,224	Indicated Mineral Resource	2012
	Disseminated Zone	3,318,468	1.2	41,181	Indicated Mineral Resource	2012
T	4 : (5 )	2,496,658	1.3	32,498	Inferred Mineral Resource	2012
	Morning / Daybreak	6,233,319	1.4	87,928		
3. Spotted Quoll Area		4 000 074				0040
		1,286,271	5.3	68,241	Indicated Mineral Resource	2012
T + 10 "	10. "	146,678	5.0	7,228	Inferred Mineral Resource	2012
Total Spotte		1,432,949	5.3	75,469		
	Beautiful Sunday	480,000	1.4	6,720	Indicated Mineral Resource	2004
Total Weste	ern Belt	14,776,033	1.9	287,764		
4. Cosmic Boy Area						
	Cosmic Boy	180,900	2.8	5,050	Indicated Mineral Resource	2004
	Seagull	195,000	2.0	3,900	Indicated Mineral Resource	2004
Total Cosm	ic Boy Area	375,900	2.4	8,950		
5. Diggers Area	Discours County C			<u></u>	landing to disk to the	225 :
	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 Here	E00.000	0.0	E 0.40	Indicated Mineral Deserves	2004
Tetal Dis	Purple Haze	560,000	0.9	5,040	Indicated Mineral Resource	2004
Total Digge		3,960,740	1.3	52,600		
	RRESTANIA MINERAL RESOURCE	19,112,673	1.8	349,314		
6. Cosmos Area	AN45	470 0	0.0		In directed Mine 15	6040
	AM5	479,914	2.6	12,430	Indicated Mineral Resource	2012
	AMC	26,922	1.9	509	Inferred Mineral Resource	2012
	AM6	1,704,548	2.7	45,171	Indicated Mineral Resource	2012
	Odvesous South Disseminated	329,443	2.5	8,203	Inferred Mineral Resource	2012 2012
	Odysseus South Disseminated	4,016,949	2.1	84,767	Indicated Mineral Resource	
	Odvesous North - Discominated	219,641 3,128,943	2.0	4,302 81,156	Inferred Mineral Resource Indicated Mineral Resource	2012 2012
	Odysseus North - Disseminated	3,128,943	2.6 2.7	81,156 6,111	Indicated Mineral Resource	2012
	Odysseus North - Massive	70,106	12.6	8,814	Indicated Mineral Resource	2012
	Odjosous Notul - Massive	124,900	11.2	14,002	Inferred Mineral Resource	2012
	ins Area	10,326,614	2.6	265,465	mioned wineral Nesoulce	2012
Total Coc-	ius rica	10,320,014	2.0	∠00,405		
Total Cosm			I	l	Measured Mineral Resource	2012
	Mt Goode	13 563 000	ΛΩ			2012
	Mt Goode	13,563,000	0.8	105,791		2012
	Mt Goode	27,363,000	0.6	158,705	Indicated Mineral Resource	2012
7. Mt Goode Area		27,363,000 12,009,000	0.6 0.5	158,705 62,447		2012 2012
7. Mt Goode Area Total Mt Goo	ode Area	27,363,000 12,009,000 52,935,000	0.6 0.5 0.6	158,705 62,447 326,943	Indicated Mineral Resource	
7. Mt Goode Area  Total Mt Goo  TOTAL		27,363,000 12,009,000	0.6 0.5	158,705 62,447	Indicated Mineral Resource	



# 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>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> </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> <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 LogChief 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.	<ul> <li>All diamond drill holes were logged and photographed in full. RC holes are logged in full.</li> </ul>
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	<ul> <li>Diamond core is sampled as quarter core only; cut by the field crew on site by diamond saw.</li> </ul>
	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>
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation follows industry best practice involving oven drying, coarse crushing and pulverising.
	<ul> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	<ul> <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> </ul>
	<ul> <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> </ul>	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>	All geological logging was carried out to a high standard using well established geology codes in LogChief software.
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>	<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.	<ul> <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> </ul>
		<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	The verification of significant intersections by either independent or alternative company personnel.	<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 LogChief 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	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.	■ 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.



	<ul> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>The project area is flat and the topographic data density is adequate for MRE purposes</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 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.
		<ul> <li>For other projects, 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. No RC sampling was performed for the quarter.</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.	<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>



# 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			Co	mmen	tary			
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 26 tenements covering s 9,226Ha. The tenements include mining leases and miscellaneous licenses</li> <li>Western Areas wholly owns 23 tenements, which were acquire from Xstrata Nickel Australasia in October 2015. The remaind the tenements (3) are subject to a Joint Venture with Alkane Resources NL, where Western Areas has earned 80.6% interestable.</li> <li>All tenements are in good standing</li> </ul>				cquired nainder of			
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Historical r PLC, Xstra</li> </ul>							ncore
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The deposition within the Augustern Auguste</li></ul>	Agnew-' ustralia it style i hides. alisation h MgO e highei lso sho	Wiluna Book s komatii  typically cumulate grade or w varying	te host coccurs ultram re bodie	ed, dissem s in associatic rocks. es in the Co	rilgarn	Crated to movith the Nick	on, assive ne basal el
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</li> </ul>	■ Drill hole s from the No							
	for all Material drill holes:	HOLEID	Easting	Northing	RL	EOH Depth (m)	Typ e	DIP	Azimuth
	<ul> <li>easting and northing of the drill</li> </ul>	WCD025	261182.7	6946593.6	485.2	1104.5	DD	-64	269.2
	hole collar	WCD026W1	261715.9	6935339.1	462.5	960.8	DD	-55	303
	elevation or RL (Reduced Level     elevation above sea level in	WCD027	261164.7	6946225.2	484.3	198	DD	-74	269.9
	metres) of the drill hole collar	WCD027W1	261164.7	6946225.2	484.3	521	DD	-74	269.9
	<ul> <li>dip and azimuth of the hole</li> </ul>	WCD027W1W1	261164.7	6946225.2	484.3	873.9	DD	-74	269.9
	<ul> <li>down hole length and</li> </ul>	WCD028	261166.2	6946225.1	484.2	7.5	DD	-74	269
	interception depth	WCD029	261166.5	6946225.8	484.4	4.5	DD	-74	269.8
	<ul><li>hole length.</li></ul>	WCD030	261348.0	6942898.4	469.4	1356.6	DD	-66	265.1
	If the exclusion of this information is	WCD031	261170	6946397.1	487	1036	DD	-76	266
	justified on the basis that the information is not Material and this	WCD032	261302.8	6943098.7	470.3	547.6	DD	-67	265.1
	exclusion does not detract from the	WCD032W1	261302.8	6943098.7	470.3	1091.6	DD	-67	265.3
	understanding of the report, the	WCD033	262500.0	6937898.1	460.5	In Progress	DD	-55	227.1
	Competent Person should clearly explain why this is the case.	WCD034	261218.9	6943408.6	472.4	In Progress	DD	-70	265.9



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</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 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> <li>Metal equivalents have not been used</li> </ul>
Relationship between mineralisation	<ul> <li>should be clearly stated.</li> <li>These relationships are particularly important in the reporting of Exploration Results.</li> </ul>	Drill hole intersections may not be true widths
widths and intercept lengths	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	
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, groundwater, geotechnical and rock	<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>



	characteristics; potential deleterious or contaminating substances.	
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> </ul>	<ul> <li>Preliminary plans are included within the report</li> <li>Future explorations programs may change depending on results and strategy</li> </ul>
	<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>	

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

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

Criteria	JORC Code Explanation	Commentary
Sampling techniques	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.	<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> </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>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)	Reverse Circulation (RC) utilized an Atlas Copco ROC L8

WESTERN AREAS LIMITED ASX: WSA www.westernareas.com.au ABN 68 091 049 357 Page 26 of 37



Drill sample recovery	or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).  Method of recording and assessing core and chip sample recoveries and results assessed.  Measures taken to maximise sample recovery and ensure representative nature of the samples.  Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	<ul> <li>Drilling recoveries are digitally logged, recorded and captured within the project database.</li> <li>Overall recoveries are &gt;95% and there has been no significant loss of sample material due to ground or drilling issues.</li> <li>Each individual sample is visually checked and logged for recovery, moisture and contamination.</li> <li>The style of expected mineralisation and the consistency of the mineralised intervals are expected to preclude any issue of sample bias due to material loss or gain.</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> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Geological logging is recorded and validated in MS excel spreadsheets (Toughbook platform)</li> <li>Drill chips are logged for lithology, mineralogy, mineralisation, weathering, fabric, grainsize, colour and other relevant features.</li> <li>Geotechnical logging was not completed due to the nature of drill method.</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 sample 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>The drill samples were collected every metre on the drill rig using a rotary splitter.</li> <li>When required, composite samples are taken using a sampling spear.</li> <li>Field QC procedures involve the use of certified reference material as assay standards, along with blanks, duplicates and barren washes. The insertion rate of these averaged 1:20, with an increased rate in mineralised zones.</li> <li>Field duplicates are conducted on approximately 1 in 25 drill intersections.</li> <li>The sample sizes are considered to be appropriate to correctly represent the geological model based on: the style of mineralisation, the thickness and consistency of the expected intersections, the sampling methodology and percent value assay ranges for the primary elements.</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>



	<ul> <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> </ul>	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 checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</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> <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> </ul>
		<ul> <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</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	and annual basis using QAQCR.      Geological interpretation using intersections peer viewed by prior company and WSA geologists.
	■ 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>
		<ul> <li>All other data including assay results are imported via Datashed software.</li> <li>Drillholes, sampling and assay data is stored in a SQL Server</li> </ul>
		database located in a dedicated data center.
	<ul> <li>Discuss any adjustment to assay data.</li> </ul>	• 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>	Drill holes were located using hand held GPS.
	Specification of the grid system used.	<ul> <li>MGA94 Zone 51 grid coordinate system is used.</li> <li>A two point transformation is used to convert the data from AMG84_51 mine grid and vice versa.</li> </ul>
	Quality and adequacy of topographic control.	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.
		<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.	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>	<ul> <li>Samples are collected at 1m intervals (Diamond and Aircore) and 4m composites (RC).</li> </ul>
	Whether sample compositing has been applied.	4m composites applied.
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>

# **JORC 2012 TABLE 1 – FORRESTANIA 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</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</li> </ul>
	time of reporting along with any known impediments to obtaining a licence to operate in the area.	<ul> <li>of the tenements are subject to Joint Ventures.</li> <li>A number of the Kagara tenements are subject to third party royalty agreements.</li> <li>All the tenements are in good standing. Six tenements are pending grant.</li> </ul>
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>

WESTERN AREAS LIMITED ASX: WSA



		<ul> <li>Western Areas has managed the Mt Gibb JV since 2009 (Great Western Exploration explored the ground prior to that time).</li> <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	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	■ 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	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:	Drill hole summary details supporting reported intersections from the Cosmic Boy Project 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> </ul>	
	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.	
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> </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 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> <li>Metal equivalents have not been used</li> </ul>



	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; 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.	<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: 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>Air-core (AC) and Reverse Circulation (RC) drilling is used for sampling.</li> <li>Each sample interval is split to approximately 3kg using a rig mounted rotary splitter.</li> <li>Each sample is sent for analysis to ALS Global laboratories in Perth, Western Australia.</li> <li>The sample is pulverised in the laboratory (total prep) to produce a sub sample for assaying.</li> <li>All sampling was conducted using WSA QAQC sampling protocols which are in accordance with industry best practice.</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, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul> <li>Exploration targets are tested using AC and RC drilling. Holes were drilled between 60-90 degrees.</li> <li>A truck-mounted air-core rig is used with a 3 inch diameter face sampling hammer drilling or Air-Core bit.</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>Drilling recoveries are digitally logged, recorded and captured within the project database.</li> <li>Overall recoveries are &gt;95% and there has been no significant loss of sample material due to ground or drilling issues.</li> <li>Each individual sample is visually checked and logged for recovery, moisture and contamination.</li> <li>The style of expected mineralisation and the consistency of the mineralised intervals are expected to preclude any issue of sample bias due to material loss or gain.</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> <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 MS excel spreadsheets (Toughbook platform)</li> <li>Drill chips are logged for lithology, mineralogy, mineralisation, weathering, fabric, grainsize, colour and other relevant features.</li> <li>Geotechnical logging was not completed due to the nature of drill method.</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>The drill samples were collected every metre on the drill rig using a rotary splitter.</li> <li>When required, composite samples are taken using a sampling spear.</li> <li>Field QC procedures involve the use of certified reference material as assay standards, along with blanks, duplicates and barren washes. The insertion rate of these averaged 1:20, with an increased rate in mineralised zones.</li> <li>Field duplicates are conducted on approximately 1 in 25 drill intersections.</li> <li>The sample sizes are considered to be appropriate to correctly represent the geological model based on: the style of mineralisation, the thickness and consistency of the expected intersections, the sampling methodology and percent value assay ranges for the primary elements.</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> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	Primary data was collected using validated MS excel spreadsheets, on Toughbook computers.



	<ul> <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>	All data is validated by the supervising geologist and sent to WSA Perth for further validation and integration into an Acquire database.
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 hand held GPS, and cross referenced with local topographical maps (DMP produced), SRTM data and recently captured DTM models (where covered by the Aeromagnetic Surveys – Thomson Aviation).</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>Samples are collected every metre down hole.</li> <li>Sample compositing has not yet been applied, but may do so depending on the assay information required.</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 vertically which may reduce range of lithologies or cross section of stratigraphy sampled in areas that are steeply dipping.</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.	<ul> <li>All samples are captured and prepared for transport onsite under the supervision of WSA staff.</li> <li>All samples are collected in sealed task specific containers (Bulka bags – plastic pallets) and delivered from site to Perth and then the assay laboratory via WSA staff.</li> </ul>
Audits and 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 WSA.



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

# **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 Western Gawler Project comprises 6 exploration licenses covering some 4,448km2, of which 5 are held 100% WSA. (EL 6087(formerly EL 5077), EL6248 (formerlyEL 5199), EL6249 (formerly EL5200), EL5688 and EL5939)</li> <li>Licence EL 5880 (formerly EL 4440) is operated under the Strandline Resources Ltd / Western Areas Ltd Farm-In and Joint Venture (JV) Agreement.</li> <li>The Fowler JV Project consists of 5 exploration licenses under a Farm In and Joint Venture Agreement (FIJVA) between Iluka (Eucla Basin) Pty Limited and Western Areas Limited, all of which all are held by Iluka (Eucla Basin) Pty Limited. EL5878, EL5879, EL6251, EL5675 and, EL5452.</li> </ul>
Exploration done by other parties.	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The project area was originally explored by BHP Billiton as part of its extensive gold, titanium, Iron and nickel target generation work, and more recently by Gunson Resources Limited (Nickel), Equinox (Base Metals and Gold) and Iluka Resources Ltd (Mineral Sands). It is deemed that the previous exploration was of variable effectiveness.</li> <li>The South Australian Government has performed widely spaced stratigraphic diamond drilling along a number of traverses in the tenure</li> <li>The success rate of historical RC drilling is low, while the AC and Diamond drilling was effective.</li> <li>Gravity, Magneto Tellurics and Airborne Electro-magnetics have been used in selective locations within the project area.</li> <li>The historical geophysics is deemed to have been effective.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The Western Gawler Project lies within the Fowler Domain of western South Australia. The Fowler Domain is a Mesoproterozoic orogenic belt comprised of medium to high metamorphic grade basement lithologies and younger felsic, mafic and ultramafic intrusives.</li> <li>Similarly aged terranes globally contain significant accumulations of nickel and copper sulphides.</li> <li>Whilst not primary target types, the area may also be prospective for orogenic gold, IOCG and skarn related mineralisation.</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> <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> </ul>	All collar related information pertaining to the location of the reported assay results are included within the exploration results table contained within the body of this report.



	<ul> <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	<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>Where assays results have been reported, they represent both single sampling interval (1m) and composite intervals up to 3m in width.</li> <li>No metal equivalents have 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>	■ Not applicable
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	Refer to Table for location coordinates relating to the reported elevated intervals.
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.	Balanced reporting of material results is provided.

# **ACTIVITY REPORT** For the period ending 30 September 2019



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.	Multi-element analysis was conducted routinely on all samples for a base metal and PGM suite and potentially deleterious elements.
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>