



ASX Announcement
 24 April 2019

MARCH 2019 QUARTERLY ACTIVITIES REPORT

Pogo hits inflexion point, paving way for record fourth quarter

Group FY2019 production guidance maintained at 850,000-900,000oz and AISC guidance increased from A\$1,125-A\$1,225/oz to A\$1,225-A\$1,275/oz; June quarter production guidance is 235,000-260,000oz and AISC guidance is A\$1,075-A\$1,175/oz

HIGHLIGHTS

- Gold sold in the March quarter of 185,296oz at an AISC of A\$1,369/oz (US\$975/oz)*
 - Australian operations sold 149,069oz at an AISC of A\$1,200/oz (US\$855/oz)
 - US operations sold 36,227oz at an AISC of A\$2,062/oz (US\$1,468/oz)
- Pogo's results reflect impact of significant changeover-related activity, including the late delivery of the new mobile underground mining fleet and the introduction of a new mining method, which limited production temporarily; This reduced production drove up the AISC per ounce
- In the March quarter, monthly expenditure at Pogo fell ~20% to US\$18.5M from an average of US\$22.5M per month in the previous two quarters. Further cost reductions are anticipated
- Pogo is forecast to produce ~50,000oz in the June quarter
- Turnaround at Pogo and ongoing strong performance at Australian operations expected to deliver record group quarterly production in the June quarter; Rising trend demonstrated by the sale of 82,000oz of gold in the month of March
- Operating cash flow of A\$63M for the quarter; This is set to rise significantly in the June quarter
- Cash and equivalents at 31 March of A\$288M (A\$292M at December 31) after investing A\$44M in exploration and expansionary capex in the quarter; Northern Star has no bank debt
- March quarter production:
 - Jundee Gold Operations:
 - 81,089oz mined and 67,420oz sold at an AISC A\$1,021/oz (US\$727/oz)
 - Kalgoorlie Gold Operations:
 - 84,492oz mined and 81,649oz sold at an AISC A\$1,347/oz (US\$959/oz)
 - Pogo Gold Operations:
 - 39,750oz mined and 36,227oz sold at an AISC A\$2,062/oz (US\$1,468/oz)
- At Pogo, the new mining method of long-hole stoping commenced late in the quarter and represented only 11% of the quarter's processed tonnes. The April month to date figure has increased to 27% and the processed head grade has risen to over 8gpt; This is forecast to increase to a ~60/40% stoping to development ratio in the coming quarters

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- Five of the sixteen new pieces of underground mobile plant arrived on site in the March quarter; The balance is scheduled for delivery in the June quarter
 - Pogo is on track for a maiden JORC Reserve mid-year; Eight rigs are now operating underground and a further four rigs are operating on the surface
 - Outstanding results from Pogo Central Zone discovery, incl 1.5m at 48.6gpt, 1.3m at 33.2gpt, 5m at 13.9gpt; In-mine extensional drilling results incl 2.4m at 82.5gpt, 1.8m at 80.2gpt and 4.5m at 30gpt
 - Australian operations on track to meet the top end of FY2019 production guidance of 600,000-640,000oz
 - At Jundee, open pit mining at Ramone commenced in February with ore to be processed this quarter; Regional exploration at Ramone has resulted in further discoveries at the nearby Ziggy and Marley prospects with results including 17m at 4.1gpt and 9m at 6.2gpt
 - Surface diamond drilling continues to confirm the underground potential of the Ramone system
 - Significant regional exploration success in the projected Zuleika Shear geological setting at South Kalgoorlie Operation with results including 1m at 246gpt and 1m at 28.6gpt
 - Northern Star will host a quarterly conference call today, 24 April 2019 at 9:00am AEST (7:00am AWST). The call can be accessed at <https://webcasting.boardroom.media/broadcast/5ca2f2207b79d12cecb7923>
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Northern Star Resources Limited (ASX: NST) is pleased to report on its activities in the March quarter, during which the Company's Australian operations performed comfortably within guidance and the investment in the Pogo gold mine saw the project reach its turnaround point.

Gold sold in the quarter totalled 185,296oz at an AISC of A\$1,369/oz. This included the sale of 82,000oz in the month of March alone, which reflected the early benefits of the changes made at Pogo.

In light of this strong progress at Pogo, Northern Star is set for record production in the June quarter of 235,000-260,000oz at an AISC of A\$1,075-A\$1,175/oz.

Group FY2019 production guidance is maintained at 850,000-900,000oz. AISC guidance has increased slightly from A\$1,125-A\$1,225/oz to A\$1,225-A\$1,275/oz. Production across the Australian operations is set to be at the top end of FY2019 guidance of 600,000- 640,000oz.

At Pogo, significant progress has been achieved in the March quarter and into the month of April, with production set to rise over the coming quarters as long-hole stoping is ramped up. This is expected to result in a 60/40 split of stoping to development ore in the coming quarters.

The new mining method of long-hole stoping commenced late in the March quarter and represented only 11% of the quarter's processed tonnes. The April month to date figure has increased to 27% and the processed head grade has risen to over 8gpt.

Pogo mining physicals were significantly impacted in the March quarter due to a delay in equipment delivery, with only five of the scheduled sixteen pieces of underground mobile plant arriving in the quarter. The delivery of the remaining eleven units in the June quarter will see productivities and efficiencies continue to rise and lower the unit costs.

Northern Star Executive Chairman Bill Beament said the benefits of the changes being made at Pogo were now flowing into the results.

"The introduction of the new mining method and the late delivery of some equipment reduced production at Pogo, which in turn temporarily drove up the costs per ounce," Mr Beament said.

"But these changes are starting to pay dividends, as the results in the months of March and April show. As well as ramping up tonnages from the long-hole stoping towards the end of the quarter, we cut site expenditure to an average of US\$18.5M a month in the March quarter from an average of US\$22.5M a month in the previous two quarters.

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"This will deliver significant benefits for the AISC at Pogo as production rises.

"We always said it would take 18 months to implement our strategy at Pogo so despite the temporary delays we are still on schedule."

Mr Beament said the excellent operational performance at the Australian operations and the strong progress made at Pogo were achieved in parallel with outstanding exploration results across the board.

"At Pogo, eight rigs are now operating underground and another four are drilling from the surface," he said.

"We have generated some outstanding results from the Pogo Central Zone discovery, including 1.5m at 48.6gpt, 1.3m at 33.2gpt, 5m at 13.9gpt, achieved great in-mine extensions of all currently mined lodes and Pogo is on track for a maiden JORC Reserve in the middle of this mid-year.

"At Jundee, the regional exploration at Ramone has resulted in further discoveries at the nearby Ziggy and Marley prospects with results including 17m at 4.1gpt and 9m at 6.2gpt.

"We have also generated significant regional exploration success in the projected Zuleika Shear geological setting at the South Kalgoorlie Operation, with results including 1m at 246gpt and 1m at 28.6gpt."

Northern Star	Units	Jun-18 Qtr	Sep-18 Qtr [^]	Dec-18 Qtr	Mar-19 Qtr	FYTD
Ore Hoisted	Tonnes	1,013,112	1,425,006	1,471,614	1,379,931	4,276,551
Mined Grade	gpt Au	5.6	5.3	4.4	4.6	4.8
Gold in Ore Hoisted	Oz	183,843	244,953	208,930	205,331	659,214
Milled Tonnes	Tonnes	1,243,682	1,410,585	1,511,547	1,454,762	4,376,894
Head Grade	gpt Au	5.0	5.1	4.4	4.4	4.6
Ounces Produced	Oz	200,322	229,136	213,829	206,731	649,696
Recovery	%	92	91	90	90	90
Gold Recovered	Oz	183,949	207,600	193,252	186,255	587,107
Ounces Sold	Oz	182,856	212,682	210,561	185,296	608,539
Cash Operating Cost	A\$/oz	788	999	1,108	1,164	1,087
All-in Sustaining Cost	A\$/oz	982	1,226	1,365	1,369	1,318
Total Stockpiles Contained Gold	Oz	78,787	88,512	81,783	78,721	78,721
Gold in Circuit (GIC)	Oz	27,523	33,572 ^{^^}	23,173	26,991	26,991
Gold in transit (oz)	Oz	1,391	11,035 ^{^^}	3,642	358	358

[^]Physical metrics, cash operating costs and all-in-sustaining costs are inclusive of Pogo operations for September quarter.

^{^^}Includes Pogo inventory of 5,447ozs GIC; 9,860ozs Gold in transit at September 2018.

Northern Star	Units	Jun-18 Qtr	Sep-18 Qtr [^]	Dec-18 Qtr	Mar-19 Qtr	FYTD
Revenue	A\$/M	316.5	258.9	362.6	329.7	951.2
Average Gold Price	A\$/oz	1,731	1,691	1,722	1,779	1,733

[^]Excludes Pogo operations revenue as it was acquired 28 September 2018.

Table 1: Key Group Performance Figures (Quarterly)

Northern Star	Units	Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr	FYTD
Mining	A\$/oz	452	611	644	720	656
Processing	A\$/oz	199	295	274	311	292
Site Services	A\$/oz	38	76	91	97	88
Ore Stock & GIC Movements	A\$/oz	58	(6)	64	5	22
Royalties	A\$/oz	44	25	29	33	29
Ore Purchase	A\$/oz	-	-	8	1	3
By Product Credits	A\$/oz	(3)	(3)	(3)	(3)	(3)
Rehabilitation-Accretion & Amortisation	A\$/oz	3	6	7	9	7
Corporate Overheads	A\$/oz	51	37	44	44	41
Mine Development/Sustaining CAPEX	A\$/oz	110	163	182	123	158
Mine Exploration	A\$/oz	30	22	25	29	25
All-in Sustaining Costs	A\$/oz	982	1,226	1,365	1,369	1,318
Depreciation & Amortisation	A\$/oz	201	304	281	357	312

Table 2: Key Group Cost per Ounce Measures



Northern Star Resources Limited - ABN: 43 092 832 892

Level 1, 388 Hay Street
Subiaco WA 6008, Australia

PO Box 2008
Subiaco WA 6904

T: +61 8 6188 2100
F: +61 8 6188 2111

E: info@nsrld.com
W: www.nsrld.com

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Production KPIs March Quarter	Units	Kalgoorlie Operations	Jundee	Pogo	Total
Total Ore Hoisted	Tonnes	699,750	508,361	171,820	1,379,931
Mine Grade	gpt Au	3.8	5.0	7.2	4.6
Gold in Ore Hoisted	Oz	84,492	81,089	39,750	205,331
Milled Tonnes	Tonnes	772,960	490,934	190,868	1,454,762
Head Grade	gpt Au	3.7	4.9	6.2	4.4
Recovery	%	91	90	89	90
Gold Recovered	Oz	82,720	70,154	33,381	186,255
Gold Sold	Oz	81,649	67,420	36,227	185,296
Cash Operating Costs	A\$/oz	1,074	872	1,909	1,164
All-In Sustaining Costs	A\$/oz	1,347	1,021	2,062	1,369
Depreciation & Amortisation	A\$/oz	447	210	412	357

Table 3: Key Quarterly Mine Production Performance

FINANCE

The following is a table of the cash, bullion and investments held at the end of each quarter:

		Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr
Cash at bank	A\$M	\$443.0	\$216.4	\$229.8	\$218.8
Bullion awaiting settlement ⁽¹⁾	A\$M	\$11.4	\$15.2	\$16.6	\$20.1
Equity Investments	A\$M	\$57.5	\$43.7	\$45.3	\$48.8
Total	A\$M	\$511.9	\$275.3	\$291.7	\$287.7

⁽¹⁾ Bullion awaiting settlement is ore which has been received by the refiner in the quarter and is awaiting settlement.

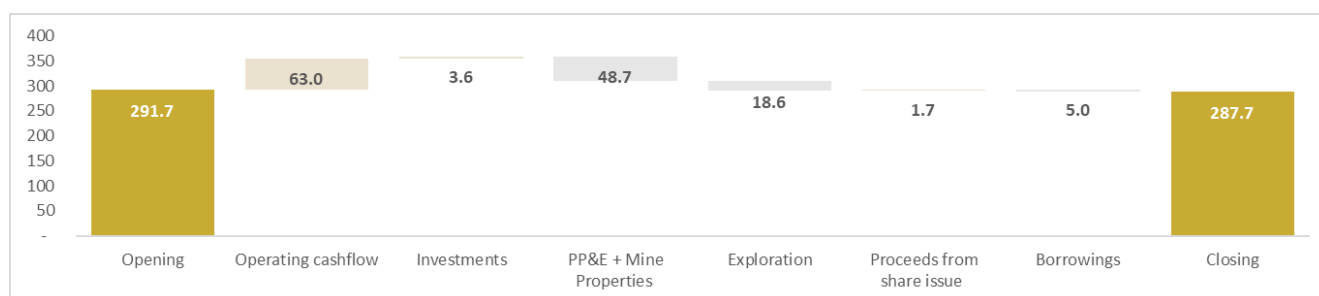
Table 4: Cash, Bullion and equity investments

The below table sets out the total of surface gold inventories:

Gold Inventories	Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr
Stockpiles contained gold (oz)	78,787	88,512	81,783	78,721
Gold in circuit (oz)	27,523	33,572	23,173	26,991
Gold in transit (oz)	1,391	11,035	3,642	358
Total Gold Inventories (oz)	107,701	133,119	108,598	106,070

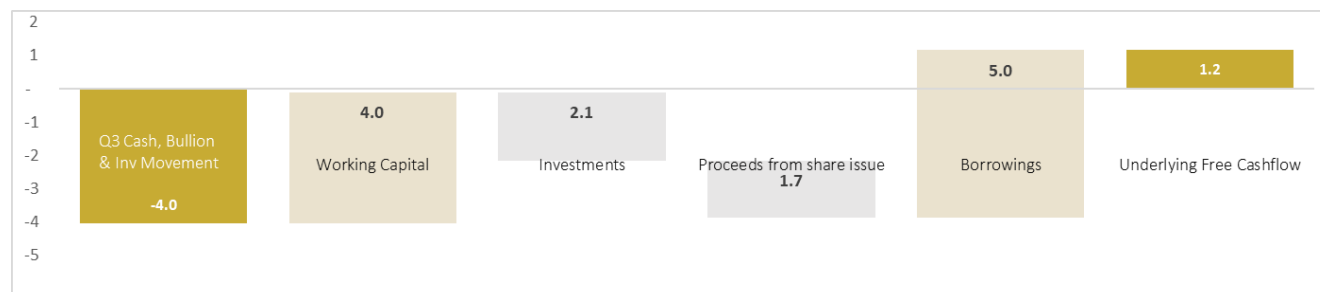
Table 5: Gold Inventories

The below waterfall chart highlights the March quarter's operating cash flow together with movements in cash, bullion and investments (A\$M):

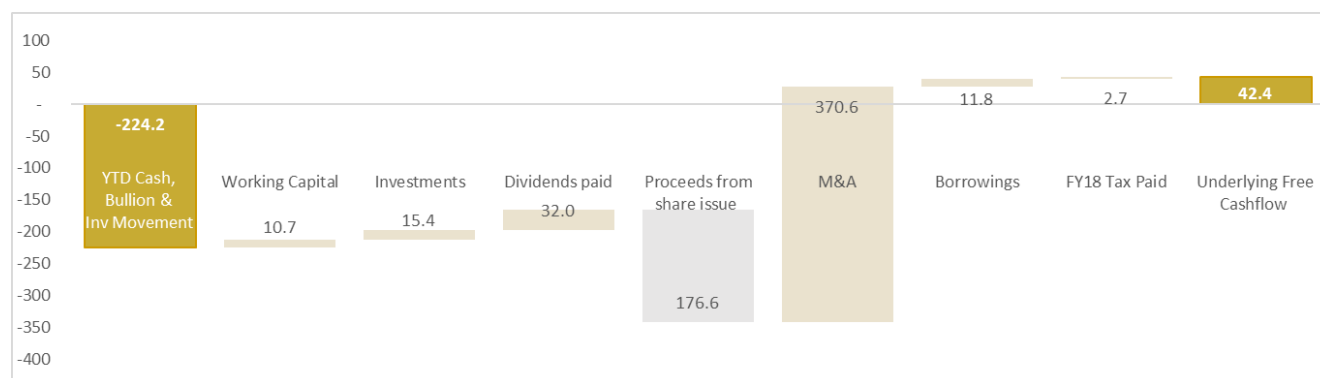


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The below waterfall chart highlights the underlying free cash flow for the March quarter (A\$M):



The below waterfall chart highlights an overview of year to date underlying free cash flow (A\$M):



Banking Facilities

Northern Star has in place undrawn debt facilities with a self-arranged syndicate of Banks.

Hedging

The below table outlines the Company's current hedging position:

Term	Jun-19 Half	Dec-19 Half	Jun-20 Half	Dec-20 Half	Total
Ounces	68,500	86,875	85,000	100,000	340,375
Gold Price/oz	A\$1,778	A\$1,786	A\$1,803	A\$1,802	A\$1,793
Ounces	15,000	22,500	15,000	-	52,500
Gold Price/oz	US\$1,223	US\$1,244	US\$1,281	-	US\$1,248

Table 6: Hedging commitments

During the quarter, 81,875 ounces of gold were hedged for delivery across all periods above at an average of A\$1,874 per ounce.

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OPERATIONS

Jundee Gold Operations

Production Summary Jundee Operations		Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr	FYTD
Ore Mined	Tonnes	472,679	528,628	480,388	508,361	1,517,377
Mined Grade	gpt Au	6.1	5.0	4.4	5.0	4.8
Ounces Mined	Oz	91,923	84,399	67,211	81,089	232,699
Milled Tonnes	Tonnes	532,240	588,356	493,593	490,934	1,572,883
Head Grade	gpt Au	5.4	4.6	4.4	4.9	4.6
Recovery	%	90	89	92	90	90
Gold Recovered	Oz	82,058	76,602	63,650	70,154	210,406
Gold Sold	Oz	84,474	73,018	69,403	67,420	209,841
Cost per Ounce						
Mining	A\$/oz	410	562	576	637	591
Processing	A\$/oz	157	182	176	188	182
Site Services	A\$/oz	33	45	45	45	44
Ore Stock Movements	A\$/oz	11	(48)	53	(38)	(11)
Royalties	A\$/oz	43	40	43	43	42
By Product Credits	A\$/oz	(3)	(3)	(3)	(3)	(3)
Cash Operating Costs	A\$/oz	651	778	890	872	845
Rehabilitation - Accretion & Amortisation	A\$/oz	2	3	3	4	4
Corporate Overheads	A\$/oz	51	50	44	43	45
Mine Development / Sustaining CAPEX	A\$/oz	66	61	104	76	80
Jundee Mine Exploration	A\$/oz	43	16	11	26	18
All-in Sustaining Costs	A\$/oz	813	908	1,052	1,021	992
Depreciation & Amortisation	A\$/oz	137	146	124	210	159

Table 7: Summary Details – Jundee Operations

Kalgoorlie Gold Operations

Production Summary Kalgoorlie Operations		Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr	FYTD
Ore Mined	Tonnes	540,433	712,122	766,710	699,750	2,178,582
Mined Grade	gpt Au	5.3	4.1	3.4	3.8	3.7
Ounces Mined	Oz	91,920	94,190	82,500	84,492	261,182
Milled Tonnes	Tonnes	711,441	651,015	789,351	772,960	2,213,326
Head Grade	gpt Au	4.8	4.0	3.4	3.7	3.7
Recovery	%	94	92	91	91	91
Gold Recovered	Oz	101,891	76,524	79,496	82,720	238,740
Gold Sold	Oz	98,382	80,097	83,624	81,649	245,370
Cost per Ounce						
Mining	A\$/oz	488	669	673	686	676
Ore Purchase	A\$/oz	-	-	20	3	8
Processing	A\$/oz	236	252	243	273	256
Site Services	A\$/oz	42	71	70	63	68
Ore Stock Movements	A\$/oz	98	(47)	30	14	(1)
Royalties	A\$/oz	44	31	38	39	36
By Product Credits	A\$/oz	(3)	(4)	(4)	(4)	(4)
Cash Operating Costs	A\$/oz	905	972	1,070	1,074	1,039
Rehabilitation - Accretion & Amortisation	A\$/oz	3	5	8	6	6
Corporate Overheads	A\$/oz	52	50	44	44	46
Mine Development / Sustaining CAPEX	A\$/oz	147	246	234	180	220
Kalgoorlie Operations Mine Exploration	A\$/oz	20	44	50	43	47
All-in Sustaining Costs	A\$/oz	1,127	1,318	1,406	1,347	1,358
Depreciation & Amortisation	A\$/oz	256	419	389	447	418

Table 8: Summary Details – Kalgoorlie Operations

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Pogo Gold Operations

Production Summary		Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr	FYTD
Pogo Operations					
Ore Mined	Tonnes	184,256	224,516	171,820	580,592
Mined Grade	gpt Au	11.2	8.2	7.2	8.9
Ounces Mined	Oz	66,364	59,219	39,750	165,333
Milled Tonnes	Tonnes	171,213	228,603	190,868	590,684
Head Grade	gpt Au	10.9	7.8	6.2	8.1
Recovery	%	91	88	89	89
Gold Recovered	Oz	54,474	50,106	33,381	137,961
Gold Sold	Oz	59,567	57,534	36,227	153,328
Cost per Ounce					
Mining	A\$/oz	595	686	953	714
Processing	A\$/oz	492	436	623	502
Site Services	A\$/oz	121	178	268	179
Ore Stock Movements	A\$/oz	98	128	68	102
By Product Credits	A\$/oz	(2)	(2)	(3)	(2)
Cash Operating Costs	A\$/oz	1,304	1,426	1,909	1,495
Rehabilitation - Accretion & Amortisation	A\$/oz	10	11	25	14
Corporate Overheads	A\$/oz	5	45	44	27
Mine Development / Sustaining CAPEX	A\$/oz	174	199	84	162
All-in Sustaining Costs	A\$/oz	1,493	1,681	2,062	1,698
Depreciation & Amortisation	A\$/oz	336	305	412	342

Table 9: Summary Details - Pogo Operations

Additional information on the individual operations can be found in Appendix 1.

EXPLORATION AND DEVELOPMENT - OPERATIONS

The Group's in-mine drilling activity consolidated in Australia and accelerated rapidly at Pogo with the continuing focus on resource conversion and extension programs.

Jundee

At Jundee, the underground diamond drill fleet focussed on resource definition and extension targets across all mining areas.

Resource definition programs were completed at Deakin, Gateway, Revelation, Westside, NIM Deeps and Nexus areas. Resource extension drilling within historical systems targeted Throssell, Barton South and Lyons South areas.

Surface diamond drilling into the Zodiac trend was completed with the final wedge hole (W8) off the parent hole JRD10447 deferred. Initial assays from the final two wedge holes are still pending.

At Ramone, the initial grade control drilling program for the upper levels of the planned open pit was completed with surface mining operations commencing late in the quarter.

Kanowna Belle

Underground diamond drilling continued with four underground rigs operating within the Kanowna Belle mine on resource extension and exploration programs.

Extension and exploration drilling adjacent to the existing Lowes mining areas continued with considerable success. Great progress was achieved at B Block and C Block (Central and West) with good results recorded outside the existing resource blocks in all areas.

Exploration drilling deep into the hanging wall of the main Lowes ore system across A, B and C blocks has outlined new, strongly mineralised structures up to 150 metres from the Fitzroy Fault on the Sims trend which will provide additional mining areas adjacent to existing infrastructure.

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EKJV (NST 51%)

Two drill rigs continued underground resource definition drilling programs across the EKJV mining complex during the quarter.

At Pegasus, drilling focussed on defining down plunge extensions to the K2 and PodaN structures at the northern and central portions of the Pegasus system with continued positive results.

Diamond drilling from platforms at Pegasus and Raleigh targeted the new Falcon mineralisation located midway between the two deposits. With over 15,000 metres now drilled into the Falcon trend, the area is shaping into a significant new mining target accessible from the existing RHP infrastructure. The Falcon mineralised corridor has been traced for over 1 kilometre and remains open to the north and south.

South Kalgoorlie

Definition drilling into the NOZ, Mutooroo and Jubilee areas continued to record good results with widths and grades generally above expectation.

Current resource definition drilling within Jubilee C Block and Mutooroo A Block is pending awaiting new platform access.

Pogo

Underground drilling accelerated with eight underground diamond drill rigs focussed on reserve development drilling throughout the quarter with an additional RC underground rig commencing a trial program mid quarter.

Underground drilling primarily focussed on all the major Liese Vein systems (L1, L2, L3), North Zone, X-Vein, South Pogo and Fun Zone areas with excellent intersections recorded from the extensions to the L2, L3 and North Zone systems. (Figure 1)

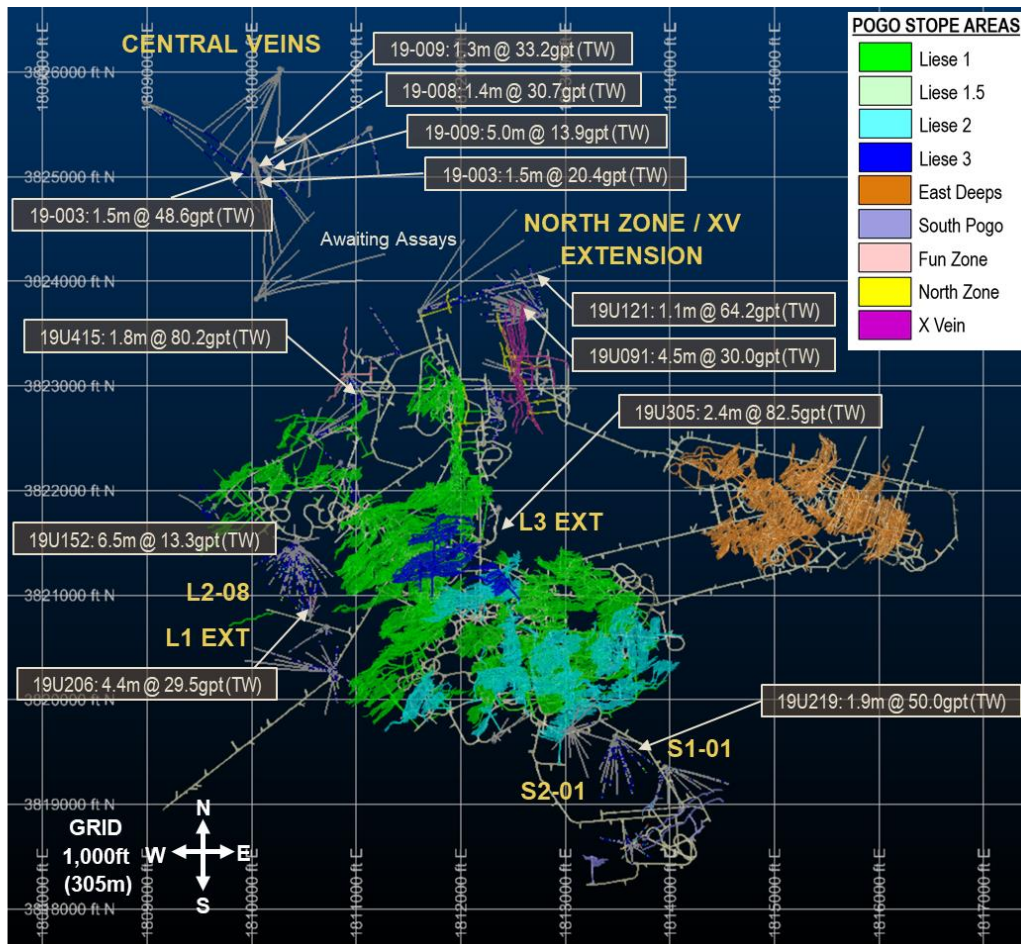


Figure 1 – Plan view of Pogo site with selected significant drill hole intersections.

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Surface diamond drilling continued throughout the quarter at Pogo with all four surface rigs focussed on the infill and extensional programs at the Central Vein Project. In summary, the drilling results to date have outlined a zone of flatter dipping Liese-type veins (C1-C6) which has expanded to include several new surfaces (C0, C2.5, C5) within a broader vein swarm (unassigned veins). Recent intersections also indicate a component of steeper NE trending veins (North Zone trend) that cross cut the flatter surfaces.

REGIONAL EXPLORATION

Regional exploration activity continued across all sites despite the northern “wet” season and storm events across the Eastern Goldfields. Pogo regional exploration ceased for the winter break with all activities relocated to the mine lease area.

Jundee

Regional exploration focussed on the Deep Well region, surrounding the new Ramone open pit and located 35 kilometres south east of the Jundee mill.

Surface diamond drilling to confirm the underground potential of the Ramone system is nearing completion. Assay results continue to highlight clear underground development potential with discrete high-grade zones within broader stockwork envelopes at depth.

Further across the Deep Well region, RC drilling programs were completed at Marley-Ziggy, Mosely and Redding prospects targeting extensions to the previously defined mineralisation. At Mosely have confirmed a steeply plunging mineralised shoot on strike from the Ramone deposit with a higher-grade mineralised shoot identified at Ziggy with best result of 17m @ 4.1gpt gold from 24m including 3m @ 21.2gpt gold in NSRJRC167. Preliminary resource estimation, optimisation and scoping studies to assess potential satellite open pit mining scenarios are in progress.

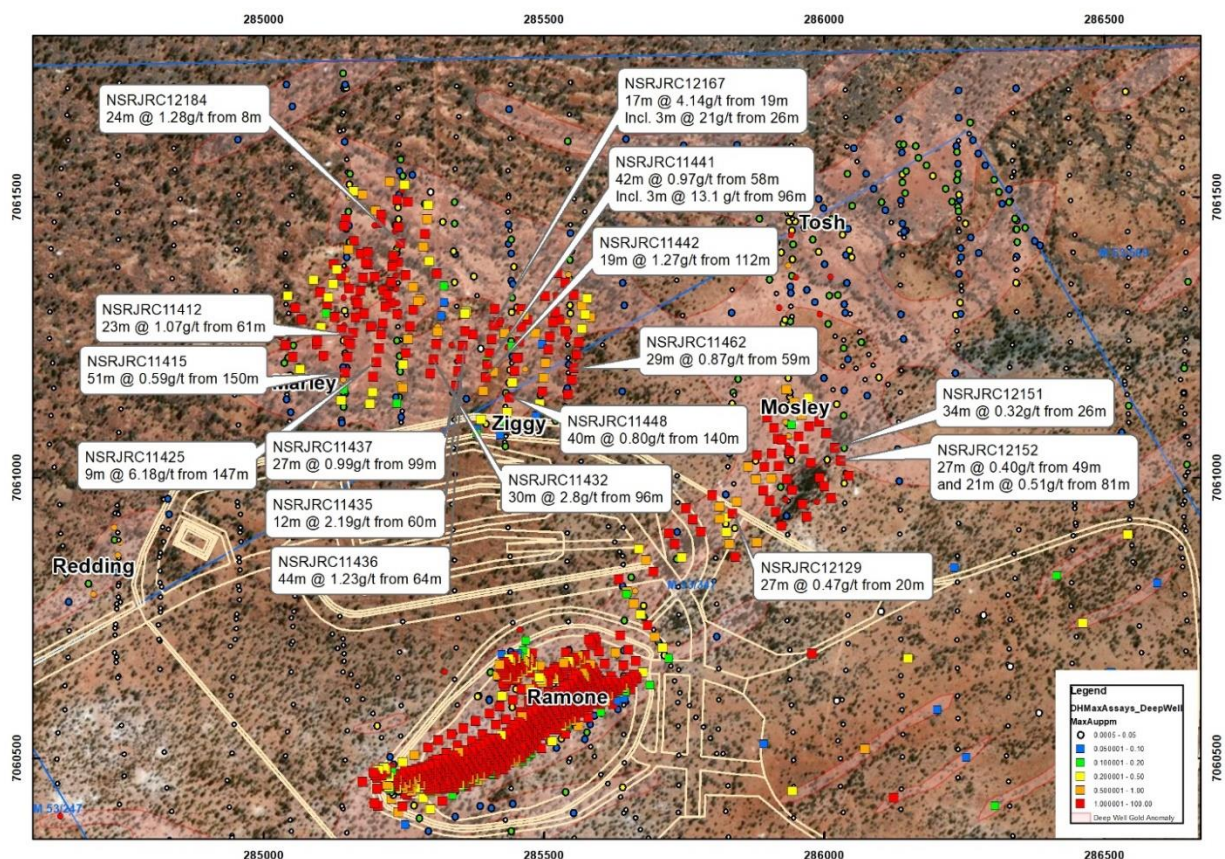


Figure 2 – Significant RC drilling results received this month for the Mosely and Marley-Ziggy prospects.

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Elsewhere, infill aircore and RC drilling programs defined distinct mineralised trends at Plover Bore South (south of the Jundee TSF) and a series of linear, strike-extensive gold anomalies within the Desert Dragon domain north of Jundee.

Kundana (NST 100%)

With the Millennium Mine in production, the focus of growth and development drilling has moved further southwards to the Xmas-Moonbeam deposits.

Moonbeam is the southern continuation of the Millennium-Centenary-Pope John K2 mineralisation across the major Lucifer Fault while the adjacent Xmas deposit is the extension of the Strzelecki mineralisation south to the Lucifer Fault. Although the two ore systems are different in character, spatially they straddle the Lucifer Fault and will combine into a single mining operation.

The infill surface diamond drilling program at Moonbeam beneath the current resource model outline has been completed. All drill holes have successfully intersected the host K2 structure with K2 vein thickness decreasing from north to south. Resource model revisions and economic analysis are pending.

Underground resource definition drilling is underway from the new Xmas Decline targeting the northern limits of the Strzelecki mineralisation in the Xmas area. Initial results have returned narrow zones of Strzelecki style high grade mineralisation below the existing decline platform.

Carbine

Additional RC drilling tested a two-kilometre southern strike extent of the Ol'Rowley Thrust located in the hanging wall of the historic Carbine open pit defining further gold anomalism on the trend. Further drilling is planned on the Carbine-Phantom pit gap area.

Further north, additional RC drilling at the Comic Court prospect continued to expand the mineralised zone identified in initial drilling in the hanging wall of the Carbine Thrust. Assay results are pending.

South Kalgoorlie

Regional exploration across the extensive South Kalgoorlie tenements accelerated with continued success in several areas.

Several diamond drilling programs were completed on the Boulder-Lefroy Fault Corridor with holes at De Rosa, Jubilee South, Merrick, Dawns Hope and Mutooroo West.

At De Rosa, diamond drilling in a similar structural setting to HBJ returned several mineralised zones with a best result of 3m @ 6.4gpt in BLDD18001 from 267m. Diamond drilling at Mutooroo West testing quartz vein system hosted in gabbro intersected disseminated pyrite mineralisation in the selvages of Charlotte-style quartz veins with significant assay results of 2m @ 50.5gpt from 152m in MWDD19001 and 1m @ 13.6gpt from 184.8m in MWDD19002.

Further east at the new Glasswing prospect, two subsequent diamond drill holes both intersected intervals of quartz veining with visible gold and arsenopyrite mineralisation. Assay results are pending for both holes.

Following exploration success at Samphire last quarter, ongoing generative RC drilling programs generated further new targets. At Colnago, generative RC drilling recorded a significant intersection of 21m @ 2.7gpt Au from 93m (including 1m @ 28.6gpt Au from 109m) in RC hole XGRC19024. Further RC drilling is in progress with visible gold mineralisation logged in several holes including 1m @ 246 gpt from 122m in NGRC19003. All other assays are pending.

Nasi Lemak (adjacent to Glasswing prospect) also emerged as a priority exploration target with an intersection of 2m @ 18gpt Au from 40m in XGRC19029. A further four RC holes were drilled to confirm the orientation of a mineralised structure with all assay results pending.

Similarly, in the Tindals area, early RC drilling at Phinisi and Caravel returned assay highlights of 18m @ 2.4gpt Au from 42m (including 3m @ 5.4gpt Au from 49m and 2m @ 7.8gpt Au from 57m) and 7m @ 3.0gpt Au from 95m (including 1m @ 15.9gpt Au from 95m) in XGRC19045. Further exploration is required to determine the geometry and extent of mineralisation.

MARCH 2019 QUARTERLY ACTIVITIES REPORT

At Location 41, RC extensional drilling on the November and Echo mineralised trends achieved good results with significant results for the Echo trend including 5m @ 3.14gpt Au from 75m in ECRC19005 and 14m @ 1.26gpt Au from 121m in ECRC19004. A best result of 4m @ 8.11gpt Au from 138m in NVRC19006 was returned for the November trend.

Central Tanami Project (NST 40%)

Regional aircore drilling recommenced late in the quarter following cessation of the wet season with programs completed at Solarius and Ground West.

Tanami Regional Project (100% NST)

Ground access is being established into the remote Stubbins prospect prior to an initial reconnaissance air core drilling program next quarter.

Western Tanami

Drilling of targets at the Fremlin South area is awaiting the completion of heritage surveys.

Pilbara

The five-hole diamond drilling program to validate the updated geological model and exploration targets generated from interpretation of the 3D seismic dataset was completed. All holes completed confirmed the revised geology model successfully intersecting the Paulsens Mine Gabbro and a new 'Lower Gabbro' unit approximately one kilometre south of Paulsens mine area.

CORPORATE

- A fully-franked dividend of 6 cents per share was announced on 13 February 2019 and paid on 4 April 2019.
- On 21 March 2019, Northern Star converted to equity, the final A\$1 million of the A\$2 million loan advanced to Venturex Resources Limited on 12 September 2018, by subscribing for 4,545,455 fully paid ordinary shares at a deemed issue price of A\$0.22 each. Northern Star now has a 19.88% shareholding in Venturex Resources Limited.
- During the quarter, Northern Star marketed the 1H 2019 financial results in Sydney and Melbourne, attended the annual BMO conference in Miami, conducted an inaugural ESG roadshow in Sydney and Melbourne, attended the Deutsche Bank New Zealand Investor Day in Auckland and hosted a site tour for institutional investors at its Kalgoorlie Operations. The Company maintains a proactive presentation calendar to stockbroking firms, institutional and retail investors to promote the Company and its activities.
- During the quarter, 16,865 ordinary fully paid shares were released from voluntary escrow in accordance with the Company's 2011 and 2017 Employee Share Plans.

The issued capital of the Company at the date of this report is:

Class of Securities	Issued Capital
Fully Paid Ordinary Shares	639,454,848
Unlisted Performance Rights	10,214,990

Yours faithfully



BILL BEAMENT
Executive Chairman
Northern Star Resources Limited

Investor Relations Enquiries:

Luke Gleeson
Northern Star Resources Limited
T: +61 8 6188 2103
E: lgleeson@nsrltd.com

Media Enquiries:

Paul Armstrong
Read Corporate
T: +61 8 9388 1474
E: paul@readcorporate.com.au

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Competent Person Statement

The information in this announcement that relates to exploration results, data quality and geological interpretations for the Company's Australian and US Project areas is based on information compiled by Michael Mulrone, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of Northern Star Resources Limited. Mr Mulrone has sufficient experience that is relevant to the styles of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" for the Company's Australian and US Project areas. Mr Mulrone consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

Forward Looking Statements

Northern Star Resources Limited has prepared this announcement based on information available to it. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions and conclusions contained in this announcement. To the maximum extent permitted by law, none of Northern Star Resources Limited, its directors, employees or agents, advisers, nor any other person accepts any liability, including, without limitation, any liability arising from fault or negligence on the part of any of them or any other person, for any loss arising from the use of this announcement or its contents or otherwise arising in connection with it.

This announcement is not an offer, invitation, solicitation or other recommendation with respect to the subscription for, purchase or sale of any security, and neither this announcement nor anything in it shall form the basis of any contract or commitment whatsoever. This announcement may contain forward looking statements that are subject to risk factors associated with gold exploration, mining and production businesses. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including but not limited to price fluctuations, actual demand, currency fluctuations, drilling and production results, Reserve estimations, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory changes, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals and cost estimates.

Currency Conversion Rate

**All currency conversions in this announcement have been converted at a currency of A\$/US\$ conversion rate of A\$0.7121.*

MARCH 2019 QUARTERLY ACTIVITIES REPORT

APPENDIX 1 – ADDITIONAL INFORMATION - OPERATIONS

Kalgoorlie Gold Operations

► Introduction

Kalgoorlie Gold Operations consist of the Millennium, EKJV (East Kundana Joint Venture), Kanowna Belle and HBJ (South Kalgoorlie) operations.

► Safety

There were two (2) Lost Time Injuries during the quarter.

► Underground Production

Mine Development:

	Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr
Decline	711m	855m	750m	296m
Level	2,975m	4,841m	4,477m	2,649m
Strike driving ⁽¹⁾	4,061m	3,554m	3,988m	3,514m
Total (metres)	7,753m	9,250m	9,215m	6,459m

Note (1) includes development through paste-fill

Table 1: Underground Production – Mine Development (physicals represent 100% share of EKJV development metres)

Access and strike development focus was the priority across all Kalgoorlie mines. The advance of the Velvet ore drives at Kanowna Belle continued and the NOZ strike drives at HBJ was a priority to access higher grade mining areas. At Millennium, the Pope John ore drives continue to add access to additional stoping fronts and the EKJV development continues strongly enabling the continuation of multi lift stoping fronts to be established.

	Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr
Development ore (t)	202,804	174,517	246,865	167,610
Development grade (gpt)	3.6	3.2	3.0	3.0
Stope ore (t)	449,376	537,606	510,833	532,139
Stope grade (gpt)	5.5	4.4	3.6	4.0
Total ore (t)	652,180	712,122	766,710	699,750
Total grade (gpt)	4.9	4.1	3.4	3.8
Contained gold (oz)	101,996	94,190	82,500	84,492

t=tonnes, gpt=grams per tonne, oz=ounces

Table 2: Underground Production – Ore Production (physicals represent Northern Star's 51% share of JV ore)

Stoping continues strong performance across the operations with HBJ transitioning to higher stope output for the March quarter.

► Gold Production

A total of 772,960 tonnes of ore was milled in the March quarter at 3.7gpt and 91% recovery for 82,720oz produced utilising the Northern Star owned Kanowna Belle and Jubilee processing plants, and additional contracted third-party facilities.

Ore stocks at the end of the quarter totalled 50,691oz of gold.

► Gold Sales

81,649oz were sold.

Jundee Gold Operations

► Safety

There were zero Lost Time Injuries during the quarter.

► Underground Production

Mine Development:

	Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr
Decline	350m	401m	683m	394m
Level	1,363m	1,514m	1,294m	670m
Operating	3,055m	3,575m	3,421m	3,175m
Total (metres)	4,769m	5,491m	5,398m	4,239m

Table 3: Underground Production – Mine Development

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Capital development focus for the March quarter was on Drill Drives at Zodiac (lower WSN), Revelation (Lowers) and Upper Wilson. Declines were continued in the Hamptons and Deakin mining areas, while fresh air intake for Nexus was also completed. A total of 3,175 operating metres were completed, yielding 120,531 development ore tonnes at an average grade of 1.5gpt.

	Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr
Development ore (t)	117,821	167,950	138,978	120,531
Development grade (gpt)	3.7	3.7	2.2	1.5
Stope ore (t)	354,858	360,678	341,410	387,830
Stope grade (gpt)	6.8	5.6	5.2	6.0
Total ore (t)	472,679	528,628	480,388	508,361
Total grade (gpt)	6.1	5.0	4.4	5.0
Contained gold (oz)	91,923	84,399	67,211	81,089

t=tonnes, gpt=grams per tonne, oz=ounces

Table 4: Underground Production – Ore production

Stoping activities for the quarter focussed on Upper Gringotts, Partridge, Westside South, Barton South and Wilson areas. Jundee record stope tonnes for a single month was achieved in March, with 141,693t mined from narrow vein panels. This was coupled with record production drill metres of 46,794m for the month.

Open pit mining commenced in March at Ramone, south of the Jundee mine. All approvals, permitting, site set up and mobilisation of contractor was completed on budget and ahead of schedule with first ore tonnes scheduled in early April.

► Gold Production

Jundee ore milled in the March quarter was 490,934 tonnes at 4.9gpt and 90% recovery for 70,154oz ounces produced.

Ore stocks at the end of the quarter totalled 28,030oz of gold.

► Gold Sales

67,420oz were sold.

Pogo Operations

► Safety

There were zero Lost Time Injuries during the quarter.

► Underground Production

Mine Development:

	Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr
Decline		586m	367m	41m
Level		429m	415m	78m
Operating		3,429m	3,942m	2,637m
Total (metres)		4,444m	4,724m	2,756m

Table 5: Underground Production – Mine Development

	Jun-18 Qtr	Sep-18 Qtr	Dec-18 Qtr	Mar-19 Qtr
Development ore (t)		184,256	219,093	152,360
Development grade (gpt)		11.2	8.3	6.9
Stope ore (t)		0	5,422	19,460
Stope grade (gpt)		0	3.9	9.9
Total ore (t)		184,256	224,516	171,820
Total grade (gpt)		11.2	8.2	7.2
Contained gold (oz)		66,364	59,219	39,750

t=tonnes, gpt=grams per tonne, oz=ounces

Table 6: Underground Production – Ore production

Ore during the March quarter was sourced from the Liese, East Deep, North and Fun zones.

The operation continues to be mine constrained and access to new areas of the mine continued, increasing the number of headings and allowing more efficient use of capital infrastructure. Demobilisation of the incumbent mining contractor was completed in the quarter and replacement mining equipment commenced arriving to site.

► Gold Production

Pogo ore milled in the March quarter was 190,868 tonnes at 6.15gpt and 89% recovery for 33,381oz.

► Gold Sales

36,227 oz were sold.

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APPENDIX 2 – DRILLING RESULTS

POGO SIGNIFICANT INTERSECTIONS (>20gt/m)											
Drill Hole #	Easting (AKSP3)	Northing (AKSP3)	Collar RL (AKSP3)	Dip (Degrees)	Azimuth (Degrees, Grid)	Hole Depth (m)	Downhole From (m)	Downhole To (m)	Downhole Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
March Quarter 2019 Drilling Results as at 15 April 2019											
CENTRAL VEIN INTERSECTIONS											
19-003	1808987	3825709	1348	-52	114	602.6	464.2	465.7	1.5	48.6	1.5
19-003	1808987	3825709	1348	-52	114	602.6	559.9	561.5	1.6	20.4	1.5
19-005	1810288	3826025	1358	-57	180	569.7	530.3	537.8	7.5	8.7	2.8
19-008	1810017	3825159	1369	-81	112	516.9	320.5	322.3	1.8	30.7	1.4
19-009	1810017	3825159	1369	-67	112	459.9	417.6	419.1	1.5	33.2	1.3
19-009	1810017	3825159	1369	-67	112	459.9	270.8	276.0	5.2	13.9	5.0
LIESE 1 VEIN INTERSECTIONS											
19U319	1810792	3820269.3	1259.7	65	323	141.1	66.1	67.7	1.6	49.8	1.6
19U201	1810566	3820809	1252	-2	347	84.4	44.2	48.8	4.6	18.2	3.5
19U202	1810566	3820809	1252	0	0	98.1	41.1	45.7	4.6	17.6	3.2
19U203	1810566	3820809	1252	-3	11	84.4	42.7	45.7	3.0	18.7	2.2
19U206	1810566	3820809	1252	9	12	104.5	25.9	27.4	1.5	20.1	1.2
19U206	1810566	3820809	1252	9	12	104.5	36.6	42.4	5.8	29.5	4.4
19U215	1809545	3821804	622	-49	334	32.0	0.0	13.7	13.7	3.1	7.0
19U415	1810936	3823104	913	-9	157	106.7	77.3	82.7	5.4	80.2	1.8
LIESE 2 VEIN INTERSECTIONS											
19U128	1810429	3821509	761	9	132	151.8	117.0	118.4	1.5	14.8	1.4
19U130	1810429	3821509	761	3	137	118.3	76.7	77.1	0.4	159.6	0.4
19U132	1810429	3821509	761	-8	140	100.0	57.3	63.5	6.2	12.3	4.4
19U135	1810429	3821509	761	1	150	108.8	68.0	69.5	1.5	39.8	1.1
19U137	1810429	3821509	761	8	156	145.7	122.5	129.4	6.9	5.4	5.3
19U137	1810429	3821509	761	8	156	145.7	134.6	137.9	3.4	9.7	2.4
19U142	1810429	3821509	761	6	168	123.7	107.8	108.9	1.1	51.2	0.8
19U148	1810429	3821509	761	8	186	191.5	140.1	140.4	0.3	106.8	0.3
19U152	1810429	3821509	761	-20	189	133.2	70.8	79.9	9.1	13.3	6.5
19U153	1810429	3821509	761	-35	189	90.8	47.8	58.0	10.2	4.0	9.6
LIESE 3 VEIN INTERSECTIONS											
18U810	1812368	3821835	1312	-73	206	366.4	215.0	224.0	9.0	31.2	8.5
19U305	1812368	3821828	1304	-73	193	246.0	205.7	210.5	4.7	82.5	2.4
NORTH ZONE / X-VEIN INTERSECTIONS											
19U091	1812788	3823675	611	-54	270	201.8	120.3	124.8	4.5	30.0	4.5
19U099	1812801	3823679	619	-53	285	208.8	129.0	133.9	4.9	10.4	3.8
19U121	1812801	3823679	619	-74	343	553.5	457.2	459.5	2.3	64.2	1.1
19U177	1812378	3822699	1373	-56	283	84.1	63.7	70.3	6.6	8.7	4.6
19U181	1812381	3822706	1375	-31	329	135.6	88.5	94.5	5.9	6.2	5.1
19U352	1811611	3823709	1294.8	-28	72.2	486.8	282.0	283.4	1.4	21.3	1.3
SOUTH POGO 1 VEIN INTERSECTIONS											
19U219	1813950	3819359	1985	-85	233	256.3	50.1	55.2	5.0	8.0	5.0
19U220	1813954	3819357	1993	-81	204	228.9	46.1	54.2	8.0	6.0	6.3
19U232	1813961	3819351	1985	-52	136	200.3	36.1	41.3	5.2	7.2	5.2
SOUTH POGO 2 VEIN INTERSECTIONS											
19U219	1813954	3819357	1993	-84	238	256.3	225.9	227.9	2.0	50.0	1.4
19U220	1813954	3819357	1993	-81	204	228.9	205.7	210.6	4.8	15.9	3.4
19U232	1813954	3819357	1993	-50	133	200.3	155.9	158.1	2.2	16.5	1.5
19U241	1813954	3819357	1993	-42	104	230.7	187.5	191.4	4.0	5.3	3.8
19U253	1813615	3818617	1806	-50	288	57.9	41.4	43.1	1.7	19.4	1.2
19U382	1813483	3819650	2058	-62	135	145.4	120.5	124.0	3.5	13.9	3.0
19U383	1813482	3819649	2061	-34	140	170.1	146.5	158.9	12.3	3.7	10.7
UNASSIGNED VEIN INTERSECTIONS											
19U025	1812814	3823048	535	-45	208	206.0	70.4	75.5	5.1	11.8	4.4
19U177	1812378	3822699	1373	-56	283	84.1	33.5	38.8	5.3	6.2	3.4
19U223	1813953	3819353	1984	-58	197	251.5	43.7	51.2	7.5	4.5	5.7
19U305	1812368	3821828	1304	-73	193	246.0	137.2	160.2	23.0	6.6	7.9
19U344	1810559.4	3822501	625.1	-74	20.5	346.3	17.6	18.6	1.0	28.7	0.7
19U345	1810558	3822501	625	-76	345	355.7	17.8	19.8	2.0	14.9	1.5
19U345	1810558	3822501	625	-76	345	355.7	172.2	173.7	1.5	40.4	0.8

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SOUTH KALGOORLIE SIGNIFICANT INTERSECTIONS											
Drill Hole #	Easting MGA	Northing MGA	Collar RL MGA	Dip (Degrees)	Azimuth (Degrees, MGA)	Hole Depth (m)	Downhole From (m)	Downhole To (m)	Downhole Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
MUTOOROO WEST INTERSECTIONS											
MWDD19001	366039	6567430	374	-50	170	204.0	152.0	154.0	2.0	50.5	NA
MWDD19002	366005	6567460	371	-65	150	360.2	184.8	1854.8	1.0	13.6	NA
CLONAGO INTERSECTIONS											
STRC002	350917	6570449	360	-60	60	125.0	38.0	39.0	1.0	17.5	NA
						and	76.0	79.0	3.0	7.4	NA
STRC011	351006	6570296	360	-60	62	86.0	41.0	44.0	3.0	2.2	NA
STRC023	350984	6570491	360	-60	240	150.0	73.0	75.0	2.0	9.8	NA
STRC026	350864	6570506	360	-60	60	120.0	87.0	88.0	1.0	7.6	NA
						and	98.0	99.0	1.0	3.2	NA
STRC029	350940	6570375	360	-60	60	155.0	126.0	128.0	2.0	1.7	NA
						and	144.0	146.0	2.0	1.9	NA
NGRC19001	350907	6570584	360	-60	240	120.0	40.0	41.0	1.0	2.5	NA
						and	70.0	71.0	1.0	2.5	NA
NGRC19002	350954	6570611	359	-60	240	192.0	167.0	168.0	1.0	1.9	NA
						and	172.0	173.0	1.0	3.6	NA
						and	176.0	177.0	1.0	3.6	NA
NGRC19003	351021.938	6570465.96	359.8687171	-60	240	160.0	96.0	97.0	1.0	5.7	NA
						and	122.0	123.0	1.0	245	NA
XGRC19023	350960	6570510	359	-60	240	110.0	55.0	56.0	1.0	6.1	NA
XGRC19024	350984	6570531	360	-60	240	180.0	93.0	114.0	21.0	2.7	NA
						Incl.	109.0	110.0	1.0	28.6	NA
NASI LEMAK INTERSECTIONS											
XGRC19028	362531	6569588	381	-60	240	100.0	59.0	66.0	7.0	0.50	NA
XGRC19029	362818	6569725	385	-70	240	126.0	40.0	42.0	2.0	17.9	NA
						Incl.	41.0	42.0	1.0	33.6	NA
						And	44.0	48.0	4.0	1.1	NA
XGRX19032	370870	6562584	316	-60	55	84.0	20.0	21.0	1.0	2.5	NA
						and	56.0	73.0	17.0	0.5	NA
XGRC19033	370903	6562544	316	-60	55	96.0	19.0	40.0	21.0	0.2	NA
XGRC19034	369590	6561928	323	-60	65	168.0	129.0	150.0	21.0	0.3	NA
XGRC19035	369795	6561780	325	-60	65	140.0	80.0	82.0	2.0	1.5	NA
						and	102.0	125.0	23.0	0.5	NA
PHINISI INTERSECTIONS											
XGRC19042	335834	6571939	350	-60	90	120.0	44.0	48.0	4.0	1.5	NA
XGRC19044	334728	6571919	358	-60	130	132.0	67.0	70.0	3.0	1.3	NA
						and	96.0	105.0	9.0	1.7	NA
XGRC19045	334814	6571844	357	-60	310	102	42.0	60.0	18.0	2.4	NA
						Incl.	49.0	52.0	3.0	5.4	NA
						Incl.	57.0	59.0	2.0	7.8	NA
						and	95.0	102.0	7.0	3.0	NA
						Incl.	95.0	96.0	1.0	15.9	NA
LOCATION 41 INTERSECTIONS											
ECRC19004	408737	6582302	371	-60	120	174.0	121.0	35.0	14.0	1.26	NA
						Incl.	129.0	132.0	3.0	2.18	NA
						and	145.0	151.0	6.0	1.0	NA
						and	155.0	156.0	1.0	2.09	NA
ECRC19005	408807	6582357	370	-62	119	144.0	44.0	47.0	3.0	1.71	NA
						and	75.0	80.0	5.0	3.14	NA
						and	94.0	101.0	7.0	1.19	NA
NVRC19006	408765	6582676	366	-61	133	156.0	138.0	142.0	4.0	8.11	NA
NVRC19008	408881	6582581	368	-62	130	162.0	66.0	87.0	21.0	0.71	NA
NVRC19008	408881	6582581	368	-62	130	162.0	102.0	104.0	2.0	1.19	NA

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JUNDEE REGIONAL SIGNIFICANT INTERSECTIONS											
Drill Hole #	Easting MGA	Northing MGA	Collar RL MGA	Dip (Degrees)	Azimuth (Degrees, MGA)	Hole Depth (m)	Downhole From (m)	Downhole To (m)	Downhole Intersection (m)	Au (gpt) uncut	Est True Thickness (m)
MOSLEY INTERSECTIONS (+10gm-m)											
NSRJRC12129	285836	7060936	550	-60	330	100.0	20.0	47.0	27.0	0.47	18.7
						Incl.	21.0	22.0	1.0	3.17	NA
NSRJRC12151	286019	7061053	550	-60	330	90.0	26.0	60.0	34.0	0.32	23.8
						Incl.	44.0	45.0	1.0	1.10	NA
NSRJRC12152	286030	7061030	550	-60	330	120.0	49.0	76.0	27.0	0.40	18.9
NSRJRC12153	286044	7061004	550	-60	330	Incl.	71.0	76.0	5.0	1.35	NA
NSRJRC12159	285095	7061244	550	-60	010	100.0	39.0	40.0	1.0	1.25	NA
						and	75.0	81.0	6.0	2.81	4.2
MARLEY-ZIGGY INTERSECTIONS											
NSRJRC11412	285158	7061258	553	-60	10	150.0	61.0	84.0	23.0	1.07	16.1
						and	93.0	109.0	16.0	0.78	11.2
NSRJRC11413	285154	7061238	553	-60	10	200.0	111.0	134.0	23.0	0.77	16.1
NSRJRC11414	285149	7061215	553	-60	10	210.0	126.0	151.0	25.0	0.66	17.5
NSRJRC11415	285145	7061188	553	-60	10	220.0	150.0	201.0	51.0	0.59	35.7
NSRJRC11416	285231	7061395	551	-60	10	120.0	85.0	110.0	25.0	0.55	17.5
NSRJRC11418	285227	7061349	552	-60	10	200.0	129.0	138.0	9.0	1.51	6.3
NSRJRC11423	285205	7061230	552	-60	10	200.0	93.0	119.0	26.0	0.55	18.2
						And	130.0	151.0	21.0	0.90	14.7
NSRJRC11424	285201	7061206	552	-60	10	210.0	167.0	175.0	8.0	2.30	5.6
NSRJRC11425	285195	7061180	552	-60	10	210.0	147.0	156.0	9.0	6.18	6.3
						Incl.	155.0	156.0	1.0	48.79	0.7
						And	190.0	210.0	20.0	0.67	14.0
NSRJRC11426	285261	7061269	552	-60	10	120.0	49.0	63.0	14.0	0.79	9.8
NSRJRC11432	285302	7061210	552	-60	10	210.0	96.0	126.0	30.0	2.80	21.0
						Incl.	96.0	99.0	3.0	13.06	2.1
NSRJRC11433	285297	7061186	552	-60	10	220.0	129.0	141.0	12.0	1.10	8.4
NSRJRC11434	285359	7061260	551	-60	10	120.0	37.0	53.0	16.0	0.98	11.2
NSRJRC11435	285355	7061235	552	-60	10	150.0	60.0	72.0	12.0	2.19	8.4
NSRJRC11436	285352	7061211	551	-60	10	200	64.0	108.0	44.0	1.23	30.8
NSRJRC11437	285347	7061190	551	-60	10	220	99.0	126.0	27.0	0.99	18.9
NSRJRC11438	285342	7061164	552	-60	10	220	136.0	157.0	21.0	0.88	14.7
NSRJRC11439	285406	7061247	551	-60	10	120	23.0	41.0	18.0	0.95	12.6
NSRJRC11440	285402	7061221	551	-60	10	150	31.0	62.0	31.0	0.84	21.7
						and	74.0	90.0	16.0	1.16	11.2
NSRJRC11441	285399	7061201	552	-60	10	200	58.0	100.0	42.0	0.97	29.4
NSRJRC11442	285396	7061179	552	-60	10	220	112.0	131.0	19.0	1.27	13.3
						and	81.0	102.0	21.0	0.51	14.7
NSRJRC11444	285456	7061242	551	-60	10	120	42.0	50.0	8.0	1.27	5.6
NSRJRC11445	285452	7061214	551	-60	10	150	52.0	72.0	20.0	0.80	14.0
NSRJRC11448	285438	7061142	551	-60	10	220	140.0	180.0	40.0	0.80	28.0
NSRJRC11462	285553	7061195	551	-60	10	150	59.0	88.0	29.0	0.87	20.3
NSRJRC11463	285549	7061174	551	-60	10	200	89.0	113.0	24.0	0.67	16.8
NSRJRC11464	285543	7061148	551	-60	10	220	111.0	137.0	26.0	0.45	18.2
NSRJRC12167	285410	7061271	550	-60	010	80.0	19.0	36.0	17.0	4.14	11.9
						Incl.	26.0	29.0	3.0	21.16	2.1
NSRJRC12178	285209	7061468	550	-60	010	140.0	23.0	48.0	25.0	0.59	17.5
						Incl.	42.0	44.0	2.0	2.17	1.7
NSRJRC12179	285208	7061454	550	-60	010		64.0	70.0	6.0	4.09	4.2
NSRJRC12182	285257	7061491	550	-60	010		32.0	38.0	6.0	1.56	4.2
NSRJRC12184	285244	7061417	550	-60	010		8.0	32.0	24.0	1.28	16.8
						Incl.	17.0	20.0	3.0	6.13	2.1

APPENDIX 3 – TABLE 1

JORC Code, 2012 Edition – Table 1 Report

Pogo Gold Mine – April 2019

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (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.	The Pogo deposits (Liese, North Zone, East Deeps, South Pogo and Fun Zone) were sampled using diamond drill holes (DD) completed from both surface and underground campaigns drilled between 1994 and 2018. A total of 4,481 DD holes for 2,321,327 feet (707,549 m) were drilled to inform the Mineral Resource estimate reported as at 30 June 2018. This methodology continued to be employed in 2018 holes drilled after the Mineral Resource estimate. Other sampling methods employed in sampling the Pogo vein systems include production drilling chip sampling (sludge sampling), muck (stockpile) sampling and sporadic underground face chip sampling. These samples were excluded from the dataset used to generate the reported Mineral Resource estimate. Only diamond drill core results have been reported in this release.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Diamond drilling is sampled based on geological and mineralisation boundaries identified by the geologists during logging. Geological or mineralisation boundaries identified by geologists are, where possible, not crossed for sampling purposes. Sampling intervals are set at a minimum sample size of 0.5ft (0.15m) and a maximum sampled interval of 5ft (1.52m).
	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 30g 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.	Diamond drilling was used to collect the samples used in the resource estimation dataset and the exploration data set that forms the basis of this announcement. All drill core is comprehensively logged and intervals for sampling selected based on geological and mineralogical observations by the geologist. Where practicable, samples are not collected across lithological or mineralisation boundaries. Sampling protocols at Pogo vary dependent on the purpose of the drill hole: <ul style="list-style-type: none"> • Exploration Drilling: Wide-spaced drilling or holes drilled for non-resource conversion purposes are cut using an Almonte core saw and half core submitted for analysis. The non-assayed portion of the core is stored on-site for a period of five years; • Resource Definition Drilling: Infill drilling for defining or converting resources to a higher confidence category are whole-core sampled, with the non-assayed portion of the core periodically disposed. For NQ core samples, minimum sample size of 0.5ft (0.15m) and a maximum sampled interval of 5ft (1.52m). For HQ drill core that is whole core sampled, samples are collected at a minimum interval of 4 inches (0.1m) and a maximum of 2.5ft (0.76m). When the HQ samples are half-core cut, the maximum sample is extended to 5ft (1.52m). Quartz vein, fault zones, silica flooding and quartz stockwork zones are sampled plus the adjacent five feet (1.52m) above and below the quartz or fault zone. Samples are crushed to 70% passing 2 mm prior to selection of a 250-gram split which is then pulverised. A 30-gram sub-sample is then selected for fire assay with a gravimetric finish (underground holes) or atomic absorption spectroscopy (AAS) finish (surface holes).
	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.).	Drilling has been carried out from both surface and underground. Underground drilling is completed predominantly using NQ2 (50.6mm core diameter) or BQ (36.4mm core diameter) holes, however larger HQ (63.5mm diameter core) and PQ (85.0mm core diameter) holes are completed for long exploration drill holes or when poor ground conditions are encountered or expected. Surface drill holes are typically collared using PQ / HQ diameter tools and reduced to NQ2/NQ2 where necessary. Core drilled between 2009 and 2017 was generally not oriented. Since 2018, orienting of exploration drill holes using the Reflex Act III tool was introduced. The following table provide details on the quantity and types of drill core drilled by year at the Pogo deposit as at 30 June 2018:

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Criteria	JORC Code explanation	Commentary														
		Feet Drilled by hole Type														
		Year	15U	BQ	BQTK	HQ	HQ/NQ	MCR	NQ	NQ/BQ	NQ2	PHB	PHD	PHJL	PQ	Unknown
		Unknown				34002					4385	215				82708
		1994							1374							1985
		1995							2011							11090
		1996														19143
		1997							2000							46219
		1998		1175												90095
		1999		3333			1519		45646.3							2113
		2000			25926.5		1104		30772.5		11455					2112
		2002							31594							
		2005							16889.5		22622					
		2006							46274	4016	12					1056
		2007							34772.6		35885					
		2008				6826			38341.4		99857	80				269
		2009									105277					
		2010								240	101434					999
		2011							855		162367					3267
		2012	220			28887.6			3620		154904	470	680		1503	13908
		2013				96202.3			19655	409	147351	1272	5621.5			9470
		2014				81471.4		274.5	96723.2	681	103888	393	6362			12130
		2015	296			153492			76270.5		114327	156	2876			8844
		2016				109920			1189		135385	371	540	50		
		2017				67916.5			1318		162143	371	42			
		2018									110510	90	220			
		Feet Drilled Total	516	4508	25,926.5	578,717	2623	274.5	449,306	5346	1,471,802	3418	16,341.5	50	1503	305,407
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	<p>Core recovery is recorded for DD holes.</p> <p>Recovery is measured to the tenth of a foot (~3cm) and is recorded in the Recovery tab using Rockware Logplot 7 software.</p> <p>In general, recoveries are excellent and no significant issues with core loss are recognised.</p>														

APPENDIX 3 – TABLE 1

Criteria	JORC Code explanation	Commentary
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Core is processed at the Pogo core processing facility. For DD the contractors adjust their rate of drilling and method if recovery issues arise. All recovery is recorded by the drillers on core blocks. This is checked and compared to the measurements of the core by the geological team. Any issues are communicated back to the drilling contractor.
	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.	There is no known relationship between sample recovery and grade. Overall recoveries are excellent and no significant issues with core loss are recognised.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Core logging is carried out in accordance with Pogo Mines core logging procedures manual, which is an extensive and comprehensive document. Data recorded includes, but is not limited to, lithology, structure, alteration assemblages, sulphide mineralogy, geotechnical parameters (recovery and RQD), and the presence of visible gold. Drill core is logged electronically using Rockware Logplot 7 software. Logging and sampling are carried out according to Pogo Mines protocols and are consistent with industry standards. Lithology is measured to the tenth of a foot (~3cm) scale marked from the closest core block. Rock codes have been set up specifically for the project. Logging is to a sufficient level of detail to support appropriate Mineral Resource estimation and mining studies.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Drill logging is both qualitative (geological features) and quantitative (geotechnical parameters) in nature. Every core tray is photographed wet.
	The total length and percentage of the relevant intersections logged.	All drill holes are logged in full, from start to finish of the hole. All intersections are logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Diamond core drilled for Resource Definition is whole core sampled. Core drilled for exploration purposes is cut in half onsite using an industry standard Almonte core saw.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	No non-core samples have been used in the Mineral Resource estimate nor have been reported in this release.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	All sample preparation and assaying of Pogo drill core is currently being performed by Bureau Veritas (BV). Pogo sends drill core to BV in Fairbanks where the core is prepared, and a pulp is sent to the BV laboratory in Reno, Nevada or Vancouver, British Columbia for assay. Typically, the gold assays are completed in Reno and the multi-element assays are completed in Vancouver. Sample preparation includes drying, crushing to 70% passing 2 mm, splitting of a 250 g subsample, and pulverising to 85% passing 75 µm. The sample preparation techniques are considered appropriate for the style of mineralisation.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Pogo Mine uses an industry standard QAQC programme involving standards, blanks and field duplicates which are introduced in the assay batches at an approximate rate of one control sample per eight normal samples. QC results are analysed immediately upon return of a sample batch and reported to management monthly. Overall results demonstrate no significant QAQC issues with the analytical laboratory and no systematic bias observed. Protocols are in place to deal with QAQC results that fail. In addition to Pogo QAQC, the analytical laboratory is ISO certified and conducts rigorous internal QAQC checks. Internal QAQC reports provided to Pogo personnel do not indicate any issues with the quality of the analysis provided.

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Criteria	JORC Code explanation	Commentary
	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.	Field duplicates are submitted when half core is taken to ensure that the sampling is representative of the in-situ material being collected.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Duplicate sample results correlate well, hence sample sizes are considered to be acceptable to accurately represent the gold mineralisation at Pogo Mine. Sample sizes are considered to be appropriate and correctly represent the style and type of mineralisation.
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.	The Pogo drill core is analysed using industry standard analytical techniques. For the underground holes, gold is determined by 30 g fire assay with a gravimetric finish. In holes drilled for exploration purposes, gold content is determined by 30 g fire assay with atomic absorption finish (AAS). Exploration results analysed by fire assay with the AAS finish returning > 10 ppm (0.292 oz/ton) gold are re-assayed by fire assay with gravimetric finish Select samples are assayed for forty-five elements multi-acid digestion and ICP-MS/ES finish. The technique is considered total and appropriate for the style of mineralisation under consideration.
	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 were used in this Resource estimate as at 30 June 2018 nor are presented in this release.
	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.	Quality control samples are inserted into the sample stream. Non-certified standards, blanks and duplicates are inserted randomly, however aim to achieve an insertion rate of approximately one in every eight samples. The Pogo Mine generates its own in-house standards from ore grade material from the mine. In-house standards are prepared at the Pogo assay laboratory, with a round-robin approach to determine the recommended value and acceptable limits. Blanks are also produced in-house and are generated from a local source of barren basalt and crushed to nominal one-inch size and inserted into sample bags prior to including into the laboratory submittal. Sand is also used as a blank. Monitoring of QA/QC results is performed by the resource geologists upon importing the individual assay certificates into the drill hole database. When failures occur, the resource geologists notify the geologist responsible for the drill hole or the core processing facility supervisor.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections are routinely inspected by alternative company personnel. Core photographs of significant intersections reviewed to ensure mineralised zones are consistent with known Pogo mineralisation styles.
	The use of twinned holes.	No twinned holes have been complete at Pogo.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All diamond core is carefully logged. Logging takes place at the core processing facility. Core logging (geological and geotechnical) is completed using Logplot 7 software. Logplot 7 software was designed to decrease logging and data entry time and standardise logs through the use of specific logging codes. The core logging procedures manual provides guidance to the user. Logplot 7 files are imported directly using GeoLogger.

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Criteria	JORC Code explanation	Commentary
		GeoLogger, a Microsoft® Access application developed by GEMS for use by Pogo, imports samples, geologic logs and down-hole surveys into the main drill hole database. All Pogo data is stored as SQL Server databases. Validation protocols are built into the importation process ensure data integrity.
	Discuss any adjustment to assay data.	No adjustments were made to the assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Drill rigs are aligned using the Reflex TN14 Gyrocompass. Underground collar locations underground are surveyed after completion of the drill hole using a Leica 1200 series survey station. On surface, collar locations are surveyed using a Leica RTK-GPS survey station. Downhole surveys for underground drill holes are collected at 50 ft downhole from the collar and every 100 ft thereafter using a Reflex® EZ-Trac multi-shot survey instrument. Surface drill holes are survey every 200 ft. A final survey is taken at the end of all drill holes. Deviation at the initial survey is checked against plan and the hole is redrilled if there is excessive deviation (>5%).
	Specification of the grid system used.	The grid system used is the North American Datum of NAD83 (NAD83) AKSP-3.
	Quality and adequacy of topographic control.	High quality LiDAR topographic mapping is utilised at Pogo.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill hole spacing is highly variable. Well-drilled areas are tested by drilling on approximately 20 by 20 feet patterns, extending out to 200 feet at the peripheries of the deposits.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The drill hole spacing, combined with estimation quality parameters such as slope of regression and average distance to sample, were used to classify the Mineral Resource estimate. The data spacing, and distribution is considered sufficient to support the reporting of Indicated and Inferred Mineral Resources.
	Whether sample compositing has been applied.	No compositing was applied prior to submission of samples for analysis.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Where practicable, the drilling was designed to intersect the mineralisation as perpendicular as possible to the dominant vein geometries. In some circumstances, the lack of drill positions resulted in holes that were oblique to the mineralisation.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	The Competent Persons believe that no bias has been introduced to the data, as no single potentially bias inducing orientation dominates in any given area.
Sample security	The measures taken to ensure sample security.	Chain of custody is managed by Pogo Mine personnel. All core samples are received intact and in their entirety in their core trays at the Company's secure core processing facility. All sampling and work on the samples is carried out within the confines of this secure facility. Pogo uses pre-numbered sample ticket books for sample numbers. The drill hole number, sample interval, and date are recorded on each ticket and the tear-off ticket is labelled with the sample interval and stapled onto the core box. Core is placed in bags with the sample number marked in permanent marker and the bar code stapled to the bag.

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Criteria	JORC Code explanation	Commentary
		<p>After sampling is complete, the sample bags are scanned and placed in rice bags labelled with the drill hole number and the sample sequence, ready for submission to the laboratory. Bags are sealed with a zip-tie.</p> <p>Samples are transported via road to the sample preparation facility in Fairbanks, Alaska. Upon receipt, any issues with sample condition is reported to Pogo personnel.</p>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<p>In March 2018, Sumitomo Metal Mining Pogo LLC (SMM Pogo) commissioned Mine Technical Services Ltd. (MTS) to complete a review audit of standard procedures currently in use at the Pogo Mine in Central Alaska. Drilling, logging, sampling, analytical, QA/QC, database, modelling, density, ore control, resource estimation, mine planning, metallurgy and reconciliation procedures were audited.</p> <p>While minor recommendations for improvement were made, sampling techniques and data were generally found to be well-considered and consistent with industry good practise.</p> <p>CSA Global and Northern Star Resources personnel completed validation of the database for internal consistency and any obvious errors prior to preparation of the Mineral Resource estimate, which incorporates results acquired prior to 2018. Northern Star have completed validation checks of all data reported in this release. Checks were completed for overlapping intervals, sample intervals extending beyond the hole depth, from > to intervals, and missing from or to values. Some issues were rectified. Various other potential issues such as missing surveys, missing sample data, and missing interval etc. were also identified for further review.</p>

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The total tenement area comprising the Pogo project consists of 1,259 state mining claims (17,079 ha) in addition to the mine lease claim (641 ha) and the mill site lease (1,385 ha). The Pogo operation is 100% owned by Northern Star Resources. There are no known royalties on the area subject the resource reported in this release.
	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.	Detailed legal due diligence completed as part of the Pogo acquisition demonstrates that the tenure is in good standing and secure. Pogo is a fully permitted and operational mine, and there are no foreseen permitting issues that will prevent development of the resource or any future exploration activities.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<p>The first modern-day exploration was conducted in the Pogo area by WGM Inc, in 1981, where strong gold-arsenic-tungsten anomalies were identified in stream sediment samples collected from the Pogo and Liese Creeks during regional reconnaissance surveys. WGM staked mining claims over the area.</p> <p>In 1991, the area was incorporated into the Stone Boy Joint Venture, which consisted of large claim groups focussed on the Chena, Salcha and Goodpaster River basins. As part of the Stone Boy JV, exploration was conducted by WGM and financed by Sumitomo Mining Metal Corporation Ltd. and others (that later withdrew) as part of an earn-in agreement. Regional grid-based soil sampling was completed between 1991 and 1994, with three diamond drill holes funded by the Japan Oil Gas and Metals National Corporation drilled in 1994 to test a prominent gold-in soil anomaly. Based on successful anomalism returned in the initial three holes, a further 13 were drilled in the Liese Creek area in 1995, one of which was the discovery hole for the Liese vein system and graded 22.7ft at 1.838opt (6.92m @ 63.0gpt). In 1997, Sumitomo signed an agreement with Teck Resources Ltd. to acquire a 40% interest in the Pogo claims and assumed operatorship of the project in 1998.</p> <p>Further surface definition drilling was completed between 1998 and 2004, with the mining operation commencing in 2006.</p>

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Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	<p>The Project is located in the Tintina Mineral Belt, which is a 200 km-wide, 1,200 km-long arc, broadly bounded by the Tintina-Kaltag fault systems to the north and the Denali-Fairwell fault systems to the south. The region contains numerous economic deposits of gold in addition to copper, lead, zinc, silver and tungsten deposits.</p> <p>The lithological units in the Pogo deposit area are dominantly high grade metamorphics and later felsic to intermediate intrusive units. Key metamorphic rocks include biotite feldspar gneiss, augen gneiss and mafic schist derived from both sedimentary and igneous protoliths. Metamorphic mineral assemblages observed consist of quartz, feldspar, biotite, chlorite, muscovite, sillimanite, andalusite and garnet. The 50km long Goodpaster batholith (granite-tonalite-diorite) is the dominant intrusive complex in the district. Locally small felsic to intermediate stocks and dykes are present.</p> <p>The principal mineralisation is hosted in biotite-quartz-feldspar paragneiss and orthogneiss, although all other lithologies are cut. Where the veins cross intrusives, they tend to split and become stockwork zones.</p> <p>Gold at Pogo is predominantly hosted within laminated quartz veins ranging in thickness from <0.5m to >10m. Mineralised veins contain around 3% sulphides (arsenopyrite, pyrite, pyrrhotite, loellingite, chalcopyrite, bismuthinite, sphalerite, galena, molybdenite, tetradymite, maldonite) and, a variety of Bi-Pb-Ag sulphosalts.</p> <p>The Pogo gold deposit is considered to be an example of a Reduced Intrusive Related Gold Deposit (RIRGD), characterised by a low sulphide content, (typically <5%) and a reduced ore mineral assemblage, that typically comprises pyrite and lacks primary magnetite or hematite. In brief, these deposits typically have the following characteristics:</p> <ul style="list-style-type: none"> o Mineralisation occurs as sheeted vein deposits or stockwork assemblages and often combines gold with variably elevated Bi, W, As, Mo, Te, and/or Sb but, low concentrations of base metals o Restricted and commonly weak proximal hydrothermal alteration o Spatially and temporally related to reduced intrusions of intermediate to felsic composition.
Drill hole information	<p>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:</p> <ul style="list-style-type: none"> o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length. <p>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.</p>	<p>Tables with the drill hole information accompany this release.</p> <p>Material information for the finalised drilling completed in 2018 has been provided with this report. Select drill holes outside of the Mineral Resource reported as at the 30 of June 2018 have been reported. The results excluded are not material to the project.</p>
Data aggregation methods	<p>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.</p> <p>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</p>	<p>All reported assays have been length weighted to provide an intersection width. Where lower grade stockwork veining and/or barren material is present between sheeted veins, length weighted calculations may include these mineralised material intervals.</p> <p>No assay results have been top cut for the purpose of this report. A lower cut-off of 5 Gram Metres per Tonne has been used to identify significant results for this report, although results below 5 Gram Metres per Tonne have been intersected.</p>

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Criteria	JORC Code explanation	Commentary
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not applicable given metal equivalent values are not being reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	Prior to September 2018, estimated true width intersections of mineralised material were calculated fusing GEMS GEOVIA software based on interpreted vein orientations. From October 2018 to present, true width intersections are estimated using trigonometry calculations of the vein angle to the core axis (Estimated true thickness = intercept length X sin (vein angle to core axis)).
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Both the downhole width and estimated true widths have been clearly stated when used.
	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').	Where mineralisation orientations are unknown, true width intersections are estimated using trigonometry calculations of the vein angle to the core axis (see above). Where this parameter has not been recorded, the drill results in the table accompanying this report is noted as 'Unknown'
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.	Diagrams have been included in the body of the announcement.
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.	Both high and low grades have been reported accurately, clearly identified with the drill hole attribute and 'From' and 'To' depths.
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.	Nil
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	In-fill drilling on the Central lode system has commenced on 30m x 30m centres from multiple surface drill pads. At the time of this announcement, 8 drill rigs were in operation at Pogo underground focusing on Resource conversion, definition and extension of in-mine mineralisation.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Diagrams have been included in this announcement.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Geologic logs saved in Logplot 7 format are imported directly using GeoLogger. GeoLogger, a Microsoft® Access application developed by GEMS for use by Pogo, imports samples, geologic logs and down-hole surveys into the drill hole database. Collar surveys are entered directly into the database in the header table by the geologist responsible for the drill hole. Down-hole surveys are recorded on slips of paper into GeoLogger and a geologist marks the survey as acceptable. The data entry procedures for samples, geologic logs, and down-hole surveys are well documented in the Pogo logging manual.

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Criteria	JORC Code explanation	Commentary
		All Pogo data is stored as SQL Server databases, including the drill hole database, the ore control database, and the RFID database. The data entry procedures and use of templates minimise the chance of the data being corrupted.
	Data validation procedures used.	All exploration drill intersection information used in the preparation of this release has been validation by the Competent Person. Validation included, but was not limited to, review of the database, core photographs and review of the assay certificates. Intervals were manually checked to ensure they truly reflect the mineralised zones. In addition, all data was validated prior to preparation of this Mineral Resource estimate as at 30 June 2018. Drill hole data relating to the 30 June 2018 Mineral Resource was provided to CSA Global as an Access Database and imported into MICROMINE by a Senior Data Specialist to perform a series of validation exercises. Overlapping intervals, intervals that extend beyond the hole depth, intervals where from > to and missing from or to values were rectified.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	A site visit was completed by the CSA Competent Person from 25 June through 1 July 2018. The NST competent person has spent 3 weeks on site at Pogo between June and September 2018. Detailed review of systems and practices were undertaken. Underground workings, drill rigs and core yard facilities were inspected. Several areas for improvement in the current systems were noted, however no issues were identified that would preclude the reporting of Mineral Resource estimate in accordance with the JORC Code.
	If no site visits have been undertaken indicate why this is the case.	Not applicable.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Five major zones were modelled, Liese, Eastern Deeps, North Zone, South Zone and Fun Zone to support the Mineral Resource estimate. There is a reasonable confidence in the interpretation, which divides the deposit into numerous lenses of mineralisation for each deposit area. It is expected that the interpretation is likely to materially change on a local basis, given the structural complexity, however a higher level of confidence exists in the broader mineralisation interpretations. Liese – Quartz veins were modelled based on lithological logging; however, 4 g/t Au intervals were selected in the absence of logged quartz veins. Eastern Deeps – Quartz veins were modelled based on lithological logging; however, 4 g/t Au intervals were selected in the absence of logged quartz veins. 36 lodes were modelled, two very significant in terms of volume. North Zone – Quartz veins were modelled based on logging; however, 4 g/t Au intervals were selected in the absence of logged quartz veins. 37 lodes were modelled, two very significant in terms of volume. South Pogo – Quartz veins were modelled based on lithological logging; however nominal 2 g/t Au intervals were selected in the absence of logged quartz veins. 17 lodes were modelled. Fun Zone – Quartz veins were modelled based on lithological logging; however, 4 g/t Au intervals were selected in the absence of logged quartz veins.
	Nature of the data used and of any assumptions made.	Drill hole logging and Au grades have been used to assist in the interpretation of the mineralisation. It is assumed that the logging data is accurate.

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Criteria	JORC Code explanation	Commentary
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Alternative interpretations are probable for the less continuous lenses at each deposit. A higher confidence exists in the more significant continuous lenses, which are often supported by mining. Alternative interpretations for these lenses are generally not plausible.
	The use of geology in guiding and controlling Mineral Resource estimation.	The structural framework, which is relatively well-known after many years of mining, has guided interpretation.
	The factors affecting continuity both of grade and geology.	Mineralisation is hosted in quartz veins – which have filled dilational zones within the brittle host rock sequence. Mineralisation also occurs as a stockwork system. Continuity of the veins (geological continuity) and stockwork is governed by structural deformation porosity. The mineralisation displays a moderate nugget component with significant short-range grade variability.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	Liese – The generally shallowly north-westerly dipping Mineral Resource extends approximately 720 m in a north-easterly direction along strike and 1,300 m down dip. Eastern Deeps – The shallow to moderately north-westerly dipping Mineral Resource extends approximately 530 m in a north-easterly direction along strike, and 600 m down dip. North Zone – The steeply east dipping Mineral Resource extends approximately 760 m in a northerly direction along strike, 300 m in a westerly direction across strike, and 610 m down dip. South Pogo – The moderately north-westerly dipping Mineral Resource extends approximately 720 m in a north easterly direction along strike, and 660 m down dip. The Central lodes are not included in the Mineral Resource as at 30 June 2018.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Vein wireframes were used to select drill hole samples, and the database table minzon was assigned the domain code in the field minzon. Based on the drill hole coding, samples from within the mineralisation wireframes were used to conduct a sample length analysis. Based on the review, a 4 ft composite length was selected for all deposits. Semivariograms were modelled in Supervisor™ for the domain groups. The semivariogram models predominantly display low nuggets, a short-range spherical structure that generally accounts for a high proportion of the total variance for all variables and a long-range spherical structure. Kriging Neighbourhood Analysis (KNA) was used for all deposits to optimise search parameters. Search parameters for each deposit are summarised below. <ul style="list-style-type: none"> ○ Liese – Min 4 Max 28 samples. SE 2/3 of maximum range in all directions first pass. Second pass used 1.5 times range, third pass used 2 times range. Fourth pass used 3 times range. Sichel mean applied to all blocks not estimated after passes. ○ Eastern Deeps – Min 4 Max 30 samples. SE 2/3 of maximum range in all directions first pass. Second pass used the full range. Third pass 1.5 range. Maximum drill hole constraint not removed for third. Just Au estimated. As, Bi, Hg exist but not estimated. Ordinary kriging. Hard boundaries between all the different lodes. Sichel mean applied to blocks not informed by the third pass ○ North Zone – Min 4 Max 28 samples. SE 2/3 of maximum range in all directions first pass. Second pass used the full range. Max 3 samples per drill hole. Third pass double range and maximum drill hole constraint removed. Just Au estimated. As, Bi, Hg exist but not estimated. Sichel mean applied to blocks not informed by the third pass.

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Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> o South Pogo – first and second passes min 6 and max 12 samples, max 3 samples per hole; third pass min 2 and max 12 samples, max 6 samples per hole. First pass 1 times maximum range in all anisotropic directions, second pass 2 times range, third pass 875 ft. Discretisation 2 by 4 by 2 (X by Y by Z). Just Au estimated. As Bi, Hg exist but not estimated. Sichel mean applied to blocks not informed by third pass. Liese 2 extension, which was updated internal to the South Pogo model, used first and second passes min 6 and max 14 samples, max 3 samples per hole; third pass min 2 and max 16 samples, max 2 samples per hole. First pass 1 times maximum range in all anisotropic directions, second pass 2 times range, third pass 1,000 ft. Discretisation 2 by 4 by 2 (X by Y by Z). Just Au estimated. As Bi, Hg exist but not estimated. Sichel mean applied to blocks not informed by third pass o Fun Zone – first and second passes min 6 and max 16 samples, max 3 samples per hole; third pass min 2 and max 16 samples, max 2 samples per hole. First pass 1 times maximum range in all anisotropic directions, second pass 2 times range, third pass 1,500 ft. Discretisation 2 by 4 by 2 (X by Y by Z). Just Au estimated. As Bi, Hg exist but not estimated. Sichel mean applied to blocks not informed by third <p>Block models were constructed using Surpac software and coded by the object number from the vein wireframes to form individual mineralisation domains for each object.</p> <p>Gold in oz per short ton was estimated into the au_cut field.</p> <p>Estimation of grades for the vein domain was undertaken by Ordinary Kriging using top-capped composites restricted to the corresponding mineralisation domain in the block model minzon field.</p>
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The current Mineral Resource estimate is the first to be reported in accordance with the JORC Code. A previous foreign estimate dated December 2017 was produced based on a fundamentally different mineralisation modelling paradigm; using implicitly generated vein models. While the current and previous estimates were based on different modelling methods, the previous estimate reports grades and tonnages that broadly correspond to those of the current estimate which provides general validation for the current model.
	The assumptions made regarding recovery of by-products.	No assumptions have been made regarding the recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Deleterious elements are not modelled, nor do they require modelling at present.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	<p>The block sizes in relation to the average sample spacing are summarised below.</p> <ul style="list-style-type: none"> o Liese – 40 Y by 10 X by 10 Z (feet) block. Drill spacing 15 to 200 feet. Mean approx. 40 feet. o Eastern Deeps – 40 Y by 10 X by 10 Z (feet) block. Drill spacing 15 to 200 feet. Mean approx. 40 feet. o North Zone – 40 Y by 10 X by 10 Z (feet) block size. Drill spacing highly variable from 60 to 200 feet. Mean approx. 80 feet. o South Pogo – 40 Y by 10 X by 10 Z (feet) block size. Drill spacing highly variable from 60 to 200 feet. Mean approx. 80 feet. o Fun Zone – 40 Y by 10 X by 10 Z (feet) block. Drill spacing 30 to 200 feet. Mean approx. 80 feet.
	Any assumptions behind modelling of selective mining units.	No assumptions have been made regarding selective mining units.
	Any assumptions about correlation between variables.	No assumptions have been made regarding correlation between variables.
	Description of how the geological interpretation was used to control the Resource estimates.	Drill hole sample data was flagged using domain codes generated from the mineralisation interpretations, which were completed with due consideration of the structural framework at Pogo.

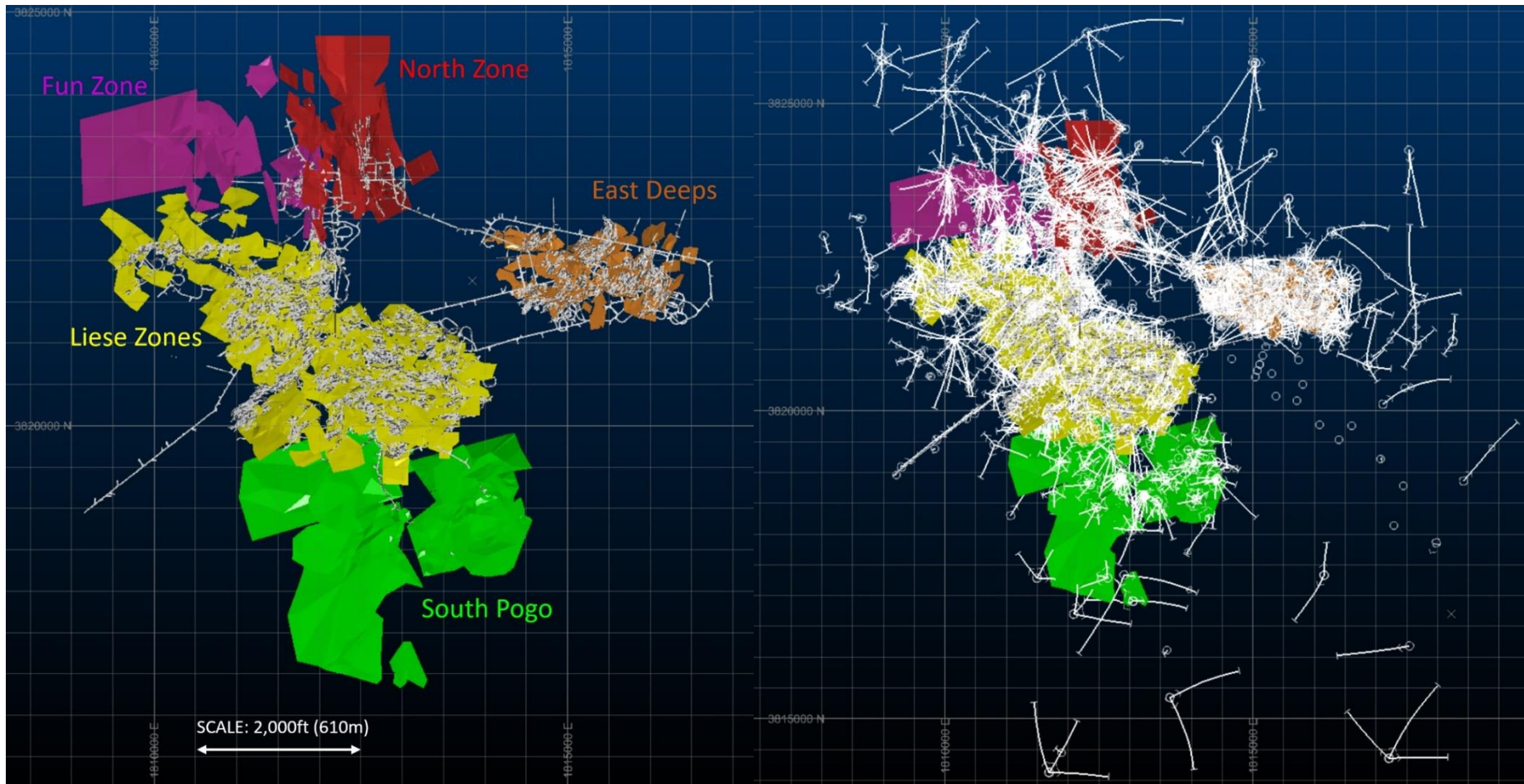
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Criteria	JORC Code explanation	Commentary
		Mineralisation boundaries were treated as hard boundaries for grade estimation.
	Discussion of basis for using or not using grade cutting or capping.	<p>A review of grade outliers was undertaken for each deposit to ensure that extreme grades are treated appropriately during grade interpolation. Although extreme grade outliers within the grade populations of variables are real, they are potentially not representative of the volume they inform during estimation. If these values are not cut, they have the potential to result in significant grade over-estimation on a local basis.</p> <p>The cutting strategy was considered and applied as follows:</p> <ul style="list-style-type: none"> ○ Review histograms and log-probability plots for values beyond a lognormal distribution ○ Review mean-variance plots to ensure that potential top-cuts did not have significant impact on the mean and variance ○ Cut the values from the populations for the domain for statistical assessment ○ Reset the data exceeding the maximum value, which were cut from the statistical assessment, to that maximum. <p>Cutting was applied on a lode by lode basis.</p>
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Block model validation was completed using visual methods in section and 3D with comparisons made between the input raw drill hole data, composites and blocks, and numerical validation methods, such as histogram, log-probability and swath plots. The validation showed the strong conditional bias predicted from the estimation approach, but the block model estimates appropriately reflect the composites, showing a reasonable local estimate.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	The Mineral Resources have been reported at a cutoff of 6.17 g/t Au, or 0.18 oz/short ton, which, in the opinion of the Competent Person, is a suitable lower cutoff as required by the reasonable prospects hurdle.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	<p>Pogo is an underground gold mine producing 900 ktpa to produce approximately 300 koz of gold per annum.</p> <p>After significant time validating underground workings, including stopes and development, the block model was coded with 'mined = 1' where sub-block centroids were inside any of the solid wireframes. These wireframes are not a true reflection of the workings received, as the validation removed many triangles to allow the objects to become valid for coding the block model. However, CSA Global estimates from visual review the valid object are likely to be within 95% of the volume of the original wireframes.</p> <p>Grades and densities with 'mined = 1' were not reset, which allows the model to be reconciled against previous MREs.</p> <p>Mined areas were not reported.</p>
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Pogo is an underground gold mine and CIL processing plant. Gold recovery is currently ~90%. There are no indications in the available data that metallurgical factors change in the material estimated in this Resource model.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing	Pogo is an operating mine that is fully permitted in accordance with United States federal laws and regulations in addition to Alaskan state laws and regulations. Waste and residual process material is used as either components in rockfill, paste fill or stored on the

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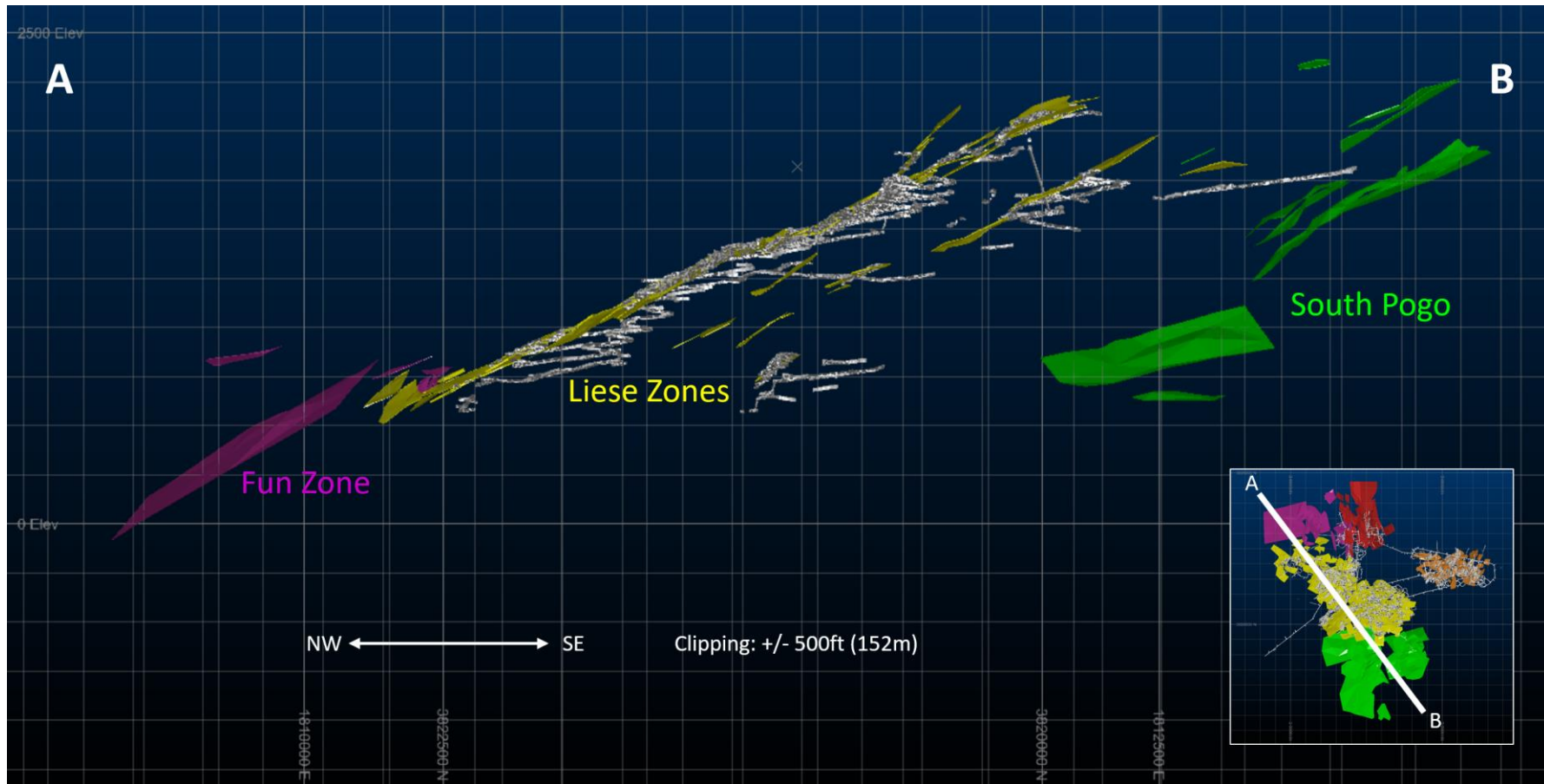
Criteria	JORC Code explanation	Commentary
	operation. While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	dry stack tailings facility. There is currently adequate storage capacity at site that would enable waste disposal of the material that potentially may be generated by extraction of future economic material in the Resource estimate.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	A density of 2.68 g/cm ³ , or 0.0835 short ton/ft ³ was used for the mineralisation.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	The density value has been based on testwork conducted on 121 samples taken from the operating mine, across each of the main mineralised zones. The weighted average of these samples was determined and has been chosen as the applied density.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	The lithologies which host the gold mineralisation contain a significant abundance of quartz. There is no major lithological variation which would justify the assignment of different densities for different materials.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Mineral Resource has been classified as both Indicated and Inferred on a semi qualitative basis, following due consideration of all criteria contained in Section 1 a d section 2 of JORC Table 1, and statistical parameters pertaining to the estimate quality; including estimate slope of regression, minimum and average distances to informing samples, number of informing samples and search pass number.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	Appropriate account has been taken of all relevant criteria including data integrity, data quantity, geological continuity, and grade continuity.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource estimate appropriately reflects the Competent Person's views of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The current model has not been audited by an independent third party but has been subject to CSA Global's internal peer review processes.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the Resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	The Mineral Resource accuracy is communicated through the classification assigned to this Mineral Resource. The Mineral Resource estimate has been classified in accordance with the JORC Code, 2012 Edition using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The statement relates to global estimates of tonnes and grade.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Global reconciliation between historic mine production and the Resource estimate indicated the model is robust.

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(LEFT): Plan view of the Pogo Resource interpretation with development shown; (RIGHT): Plan view of drill hole data. Units are shown in feet.

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(ABOVE): Representative cross section through the Pogo deposit showing the Resource interpretation of the mineralised veins. Existing development is shown in white. Please see diagrams in the body of this release for the location of the Central lodes.

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JORC Code, 2012 Edition – Table 1 Report

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (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.	Samples have been collected from RC drilling face-sampling hammer, and surface/underground diamond drilling.
	Include reference to measures taken to ensure sample retrospectivity and the appropriate calibration of any measurement tools or systems used.	Diamond drill-core is geologically logged and then sampled according to geology (minimum sample length of 0.4 m to maximum sample length of 1.5 m) – where consistent geology is sampled, a 1m length is used for sampling the core. The core is sawn half-core with one half sent off for analysis.
	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 30g 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.	RC Drilling: Sampling from a standard 5½" RC, three tier riffle splitter (approximately 5kg sample), split to a 12.5% fraction (approximately 3kg) or to a 12% fraction via a rig-mounted cone splitter. All residual material is retained on the ground in rows of 10 or 20 samples. Four-meter composites are obtained via representative scoop / spear sampling of the one-meter residual piles, until required for re-split analysis (samples returning Au >0.2ppm) or eventual disposal. Historical RC drilling is assumed to employ similar practices. An assumed 90% chip recovery (losses to fines) from RC drilling.
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.).	Diamond drilling is used for either testing / targeting deeper mineralised systems or to define the orientation of the host geology. Most of these holes have been drilled at NQ2 size with minor HQ sized core. All diamond holes were surveyed during drilling with downhole cameras, and then at end of hole using a Gyro Inclinator at 5 or 10 m intervals. Drill hole collars were surveyed by onsite mine surveyors. RC drilling is used predominantly for defining and testing for near-surface mineralisation and utilises a face sampling hammer with the sample being collected on the inside of the drill-tube. RC drill holes utilise downhole single or multi shot cameras. Drill hole collars were surveyed by onsite mine surveyors.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC drilling contractors adjust their drilling approach to specific conditions to maximize sample recovery. Moisture content and sample recovery is recorded for each RC sample. No recovery issues were identified during RC drilling programs. Recovery was poor at the very beginning of each hole, as is normal for this type of drilling in overburden.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Representation is assured through qualified geologists identifying intervals for sampling which are related directly to observed geology.
	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.	No defined relationship exists between sample recovery and grade. Nor has sample bias due to preferential loss or gain of fine or coarse material been noted.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Northern Star surface diamond drill-holes are all orientated and have been logged in detail for geology, veining, alteration, mineralisation and orientated structure. Northern Star underground drill-holes are logged in detail for geology, veining, alteration, mineralisation and structure. Core has been logged in enough detail to allow for the relevant mineral resource estimation techniques to be employed.

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Criteria	JORC Code explanation	Commentary
		Surface core is photographed both wet and dry and underground core is photographed wet. All photos are stored on the companies' servers, with the photographs from each hole contained within separate folders. RC chips are geologically logged. All holes are logged completely.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All logging is quantitative where possible and qualitative elsewhere. A photograph is taken of every core tray.
	The total length and percentage of the relevant intersections logged.	Chip samples have been logged by qualified geologists to a level of detail to support a Mineral Resource estimate.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	NQ2 and HQ diameter core is sawn half core using a diamond-blade saw, with one half of the core consistently taken for analysis. Smaller sized core (LTK48 and BQ) are whole core sampled. The un-sampled half of diamond core is retained for check sampling if required. SKO staff collect the sample in pre-numbered calico sample bags which are then submitted to the laboratory for analysis. Delivery of the sample is by a SKO staff member.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC samples are collected at 1m intervals with the samples being riffle split through a three-tier splitter. The samples are collected by the RC drill crews in pre-numbered calico sample bags which are then collected by SKO staff for submission. Delivery of the sample to the laboratory is by a SKO staff member.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Upon delivery to the laboratory, the sample numbers are checked against the sample submission sheet. Sample numbers are recorded and tracked by the laboratory using electronic coding. Sample preparation techniques are considered appropriate for the style of mineralisation being tested for – this technique is industry standard across the Eastern Goldfields.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Procedures are available to guide the selection of sample material in the field. Standard procedures are used for all process within the laboratory.
	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.	Field duplicates are taken for diamond drill core samples at a rate of 1 in 30.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes are considered appropriate for the material being sampled.
	Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to determine any element concentrations.

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Criteria	JORC Code explanation	Commentary
	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.	<p>Quality Assurance and Quality Control (QA/QC) samples are routinely submitted by SKO staff and comprise standards, blanks, assay pills, field duplicates, lab duplicates and repeat analyses. The results for these QA/QC samples are routinely analysed by Senior Geologists with any discrepancies dealt with in conjunction with the laboratory prior to the analytical data being imported into the database.</p> <p>There is limited information available on historic QA/QC procedures. SKO has generally accepted the available data at face value and carry out data validation procedures as each deposit is re-evaluated.</p> <p>The analytical techniques used are considered appropriate for the style of mineralisation being tested for – this technique is industry standard across the Eastern Goldfields.</p> <p>Ongoing production data generally confirms the validity of prior sampling and assaying of the mined deposits to within acceptable limits of accuracy.</p>
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections are validated by senior geologists.
	The use of twinned holes.	Virtual twinned holes have been drilled in several instances across all sites with no significant issues highlighted. Drill hole data is also routinely confirmed by development assay data in the operating environment.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data is collected utilising LogChief. The information is imported into a SQL database server and verified.
	Discuss any adjustment to assay data.	All data is compiled in databases (underground and open pit) which are overseen and validated by senior geologists. No adjustments have been made to any assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	<p>Collar coordinates for surface RC and diamond drill-holes were generally determined by either RTK-GPS or a total station survey instrument. Underground drill-hole locations (Mount Marion and HBJ) were all surveyed using a Leica reflectorless total station.</p> <p>Recent surface diamond holes were surveyed during drilling with down-hole single shot cameras and then at the end of the hole by Gyro-Inclinometer at 5 or 10mm intervals. Holes not gyro-surveyed were surveyed using Eastman single shot cameras at 20m intervals. RC drill-holes utilised down-hole single shot camera surveys spaced every 15 to 30m down-hole.</p> <p>Down-hole surveys for underground diamond drill-holes were taken at 15 – 30m intervals by Reflex single-shot cameras.</p>
	Specification of the grid system used.	MGA grid is used for HBJ and the regional exploration results.
	Quality and adequacy of topographic control.	Topographic control is generated from RTK GPS.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill spacing ranges from 10m x 5m grade control drilling to 100m x 100m at deeper levels of the resource.
	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.	No resources or reserves are reported in the release.
	Whether sample compositing has been applied.	Compositing is not applied to these results.

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Criteria	JORC Code explanation	Commentary
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.	Drilling intersections are nominally designed to be as perpendicular to the orebody as far as underground infrastructure constraints / topography allows.
	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.	It is not considered that drilling orientation has introduced an appreciable sampling bias.
Sample security	The measures taken to ensure sample security.	For samples assayed at the on-site laboratory facilities, samples are delivered to the facility by Company staff. Upon delivery the responsibility for sample security and storage falls to the independent third-party operators of these facilities. For samples assayed off-site, samples are delivered to a third-party transport service, who in turn relay them to the independent laboratory contractor. Samples are stored securely until they leave site.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Site generated exploration results are routinely reviewed by the Northern Star Corporate technical team.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	State Royalty of 2.5% of revenue applies to all tenements, although does not apply to the 16 freehold titles (which host the majority of SKO's Resource inventory). There are several minor agreements attached to a select number of tenements and locations with many of these royalty agreements associated with tenements with no current Resources and/or Reserves. Private royalty agreements are in place that relate to production from HBJ open-pit at \$10/ oz. In addition, a royalty is payable in the form of 1.75% of the total gold ounces produced from the following resources: Shirl Underground, Golden Hope, Bellevue, HBJ Open-pit, Mount Martin open-pit, Mount Martin Stockpiles and any reclaimed tailings. The South Kalgoorlie Operations consists of 35 Mining Leases and 19 Exploration and Prospecting Licences. The Project also includes 9 Miscellaneous Licences, 2 groundwater Licences and 16 Freehold Lots known as the Hampton "Exempted East Locations". The Area of the leases covers approximately 35,638 Hectares with a further 71,861 Hectares of Freehold Land.
	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.	All leases and licences to operate are granted and in the order of 2 and 21 years. There are no known impediments to continued operation.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The HBJ 'line of lode' is a 6 km zone of mineralisation that extends from Golden Hope in the south to Celebration in the north. The existing HBJ pit was mined for over 25 years producing approximately 1.6 Moz Au and was owned by separate companies across the Location 48 and Location 50 tenement boundary. Gold was first discovered in the New Celebration area in 1919 and a short-lived gold rush ensued. Intermittent exploration for gold and nickel was undertaken by a variety of companies in the 1960s and 1970s. The rising gold price further rekindled interest in the area in the 1980s, and open-pit mining at New Celebration started in 1986 by a joint venture comprising Newmont Holdings Limited (subsequently Newcrest; 60%), Hampton Areas Australia Ltd., (25%) and Mt Martin Gold Mines (15%), which merged with Titan Resources in 1993. The New Celebration project includes the Hampton Boulder deposit. In June 2001 Hill 50 Gold

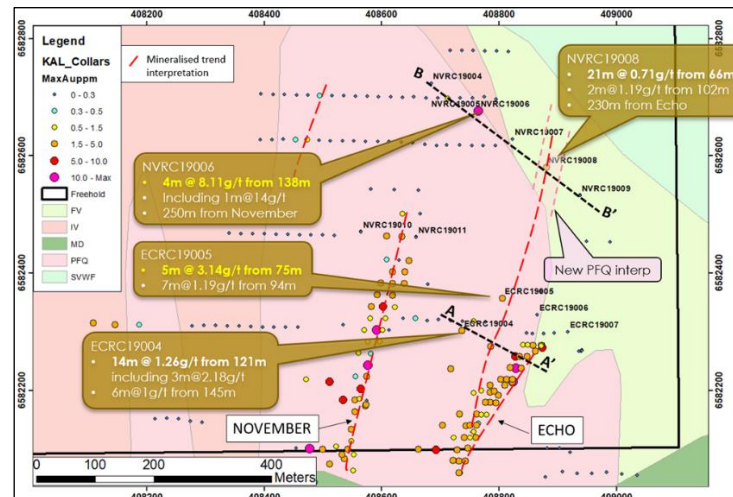
APPENDIX 3 – TABLE 1

Criteria	JORC Code explanation	Commentary
		<p>agreed to purchase the New Celebration project from Newcrest Mining. In December 2001 Harmony Gold Mining acquired Hill 50 Gold, the transaction giving Harmony Gold Mining a 100% interest in the New Celebration project.</p> <p>The Jubilee deposit located south of the Hampton Boulder deposit was evaluated and mined by Hampton Areas Australia Ltd from 1984 to 1996 with open pit mining starting in 1987. New Hampton Goldfields (New Hampton) acquired the Jubilee deposit in 1996. In May 2001, Harmony Gold Mining acquired New Hampton, and combined the operations of New Hampton's Jubilee operations and associated small open pits with the New Celebration project into the South Kalgoorlie Operations (SKO).</p> <p>In 2007, Dioro Exploration NL (Dioro) acquired the SKO from Harmony Gold (Australia) Pty Ltd (Harmony) via its wholly-owned subsidiaries, South Kal Mines Pty Ltd, New Hampton Goldfields Ltd and Aurora Gold (WA) Pty Ltd.</p> <p>The tenement package at SKO was then purchased by Avoca Resources in April 2010, which was subsequently acquired by Alacer Gold Corp. Pty Ltd in early 2011.</p> <p>Westgold Resources Limited acquired the SKO tenement holdings in October 2013 via the acquisition of Alacer Gold's Australian assets.</p> <p>In April 2018 Northern Star Resources acquired the SKO tenement holdings with the purchase of HBJ Minerals Pty Ltd from Westgold.</p>
Geology	Deposit type, geological setting and style of mineralisation.	<p>Stratigraphy for the Ora Banda and Kalgoorlie Domains is relatively well-known and comprise (from stratigraphically lowest) a lower basalt unit, komatiitic to high-magnesian basaltic rocks, an upper basalt unit and overlying felsic volcanic-sedimentary units. Conglomeratic and sandstone units unconformably overlie the upper felsic units adjacent to major shear zones. Layered mafic sills occur within various stratigraphic units and cross-cutting Proterozoic dykes also occur throughout the region. Metamorphic grade ranges from upper greenschist to upper amphibolite facies.</p> <p>The deformation history of the area is generally divided into four main phases, comprising north-directed thrusting with recumbent folding and stratigraphic repetition in D1. The second deformation (D2) resulted in north-northwest trending folds which are reflected in the dominant north-northwest trending fabric of the greenstone belts. Shortening continued during D3 with strike slip movement along northwest to north northwest trending shear zones and D4 brittle faulting.</p> <p>The HBJ orebodies form part of a gold mineralised system along the Boulder-Lefroy shear zone that is over 4 km long and includes the Celebration, Mutooroo, HBJ and Golden Hope open pit and underground mines.</p> <p>The HBJ orebodies are hosted within a steeply-dipping, north-northwest-striking package of mafic, ultramafic and sedimentary rocks and schists that have been intruded by felsic to intermediate porphyries. The area is extensively deformed with numerous north-striking shear zones and dilation of the porphyry intrusions. The main host rock for the Jubilee deposit is the Jubilee Dolerite.</p>
Drill hole Information	<p>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:</p> <ul style="list-style-type: none"> o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth 	All data is presented in the accompanying tables.

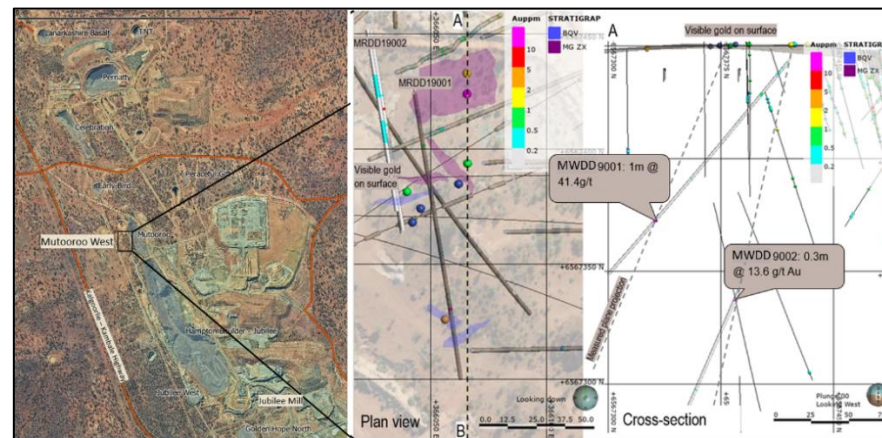
APPENDIX 3 – TABLE 1

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> o hole length. <p>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.</p>	No data is excluded.
Data aggregation methods	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.	Reported exploration results are uncut.
	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.	Short intervals are length weighted to create the final intersections.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents are reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results:	
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Due to complex mineralisation geometry and varying intercept angles the true thickness is manually estimated on a hole by hole basis.
	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').	Downhole length in addition to estimated true width is shown in the report tables if intersection structure is known. The drill hole intercept true thickness is notes as "Unknown" otherwise.
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.	Selected diagrams form part of this release.
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 holes for selected periods or areas are presented, including NSI (no significant intersection) Results are not high graded.
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.	There is no other substantive exploration data associated with this release.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Ongoing surface and underground exploration activities will be undertaken to support continuing mining activities at Northern Star Gold Operations.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Diagrams contained below

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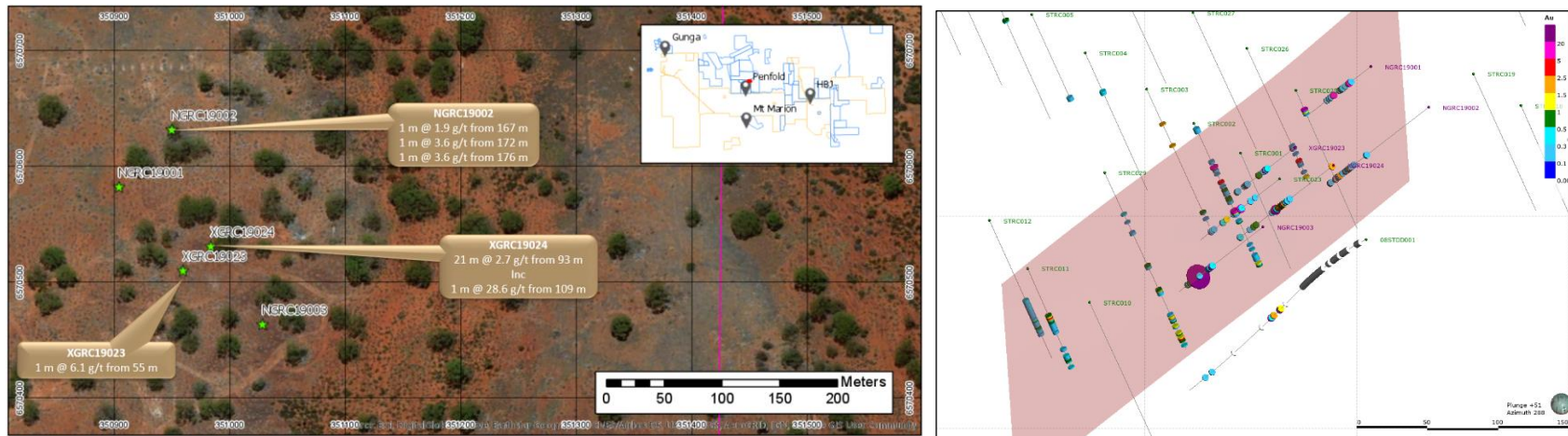


(Above) - Plan view of Location 41 RC drill holes and significant intersections

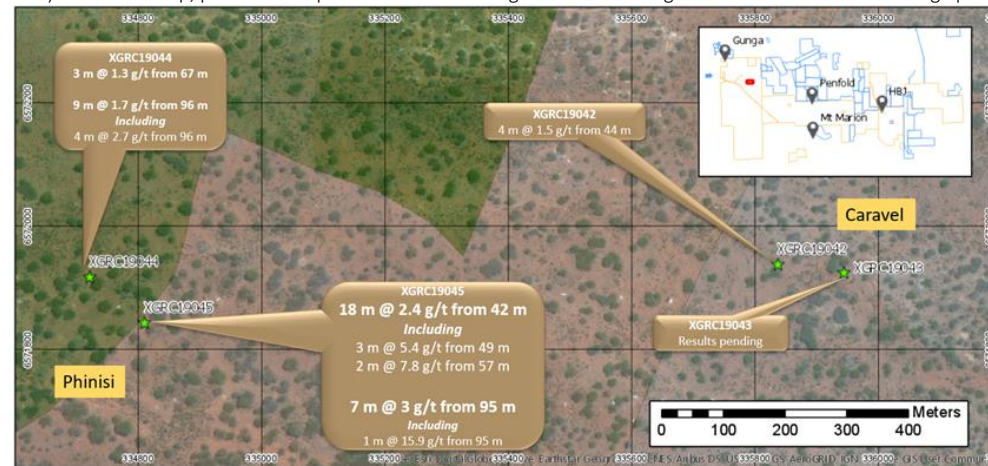


(Above) – Location map, plan and sectional view of West Mutooro drilling results

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(Above) – Location map, plan and oblique sectional view of significant RC drilling results received for the Colnago prospect



(Above) – Location map and plan view of significant RC drilling results received for the Phinisi prospect

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JORC Code, 2012 Edition – Table 1 Report
Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (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.	Sampling is by both diamond drilling (DD) and Reverse Circulation (RC) drilling completed by NSR. DD samples are HQ and NQ core with sample intervals defined by the geologist to honour geological boundaries ranging from 0.3 to 1.2m in length. RC samples are collected via rig-mounted static cone splitter with sample falling through inverted cone splitter, splitting the sample in 88%/9%/3% ratio. 9% split retained for 1m composites and 3% split retained for 4m composites. 1m samples are sent for further analysis if any 4m composites return a gold value > 0.1ppm or intervals containing alteration/mineralisation failed to return a significant composite assay result. NSR Resource definition drilling routinely collects 1m composites.
	Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.	DD core is aligned and measured by tape, comparing back to down hole core blocks consistent with industry practice. RC metre intervals are delineated with spray paint to determine metres drilled. Sample rejects are left on the sample pad to indicate metres drilled for the hole.
	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 30g 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.	Diamond drilling is completed to industry standard using varying sample lengths (0.3 to 1.2m) based on geological intervals, which are then crushed and pulverised to produce a ~200g pulp sub sample to use in the assay process. Diamond core samples are fire assayed (50g charge) and screen fire assayed for visible gold. Visible gold is occasionally encountered in core. RC sampling to industry standard at the time of drilling where ~3-4kg samples are pulverised to produce a ~200g pulp sample to utilise in the assay process. RC samples are fire assayed (50g charge).
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.).	RC drilling is carried out using a face sampling hammer and a 130mm diameter bit. Diamond drilling carried used HQ3 (triple tube) and NQ2 techniques. Core is routinely orientated using the ORI-shot device.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC – Approximate recoveries are sometimes recorded as percentage ranges based on a visual and weight estimate of the sample. DD – Recoveries are recorded as a percentage calculated from measured core versus drilled intervals.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Diamond drilling practice results in high core recovery due to the competent nature of the ground. RC drilling recovery is supervised on the rig and any recovery issues are recorded and rectified.
	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.	There is no known relationship between sample recovery and grade, diamond drill sample recovery is very high.

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Criteria	JORC Code explanation	Commentary
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	DD core and RC chip samples have been logged by qualified geologists to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Percussion holes logging were carried out on a metre by metre basis and at the time of drilling.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is Qualitative and Quantitative; all core is photographed wet. Visual estimates are made of sulphide, quartz and alteration as percentages.
	The total length and percentage of the relevant intersections logged.	100% of all DD and RC drilling is logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core is halved with an Almonté diamond core saw. The core is quarter cut when metallurgical samples are required. Sample intervals are defined by a qualified geologist to honour geological boundaries. The left half is archived. All mineralised zones are sampled plus associated visibly barren material in contact with mineralised zones. Core is sampled on the width of the geological/mineralised structure with a minimum sample length of 0.3m and a maximum sample length of 1.2m. Total weight of each sample generally does not exceed 5kg.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC drilling uses a cyclone mounted inverted cone splitter.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	DD core is dried at 100°C to constant mass, all samples below approximately 4kg are totally pulverised in LM5's to nominally 90% passing a 75µm screen. The few samples generated above 4kg are crushed to <6mm and riffle split first prior to pulverisation. RC samples are dried at 100°C to constant mass, all samples below approximately 3kg are totally pulverised in LM5's to nominally 85% passing a 75µm screen. Samples generated above 4kg are crushed to <6mm and cone split to nominal mass prior to pulverisation. For RC samples, no formal heterogeneity study has been carried out or monographed. An informal analysis suggests that the sampling protocol currently in use are appropriate to the mineralisation encountered and should provide representative results.
	Quality control procedures adopted for all sub-sampling stages to maximise representativity of samples.	Repeat analysis of pulp samples (all sample types) occurs at an incidence of 1 in 20 samples. Analysis of 2mm coarse crush and split has been completed for three RC bulk cone splitter rejects each of them divided into 32 equal splits.
	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.	Field duplicates, (i.e. other half of cut core) are routinely assayed. NSR routinely collects field duplicates during RC drilling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate. No formal nomograph study has been conducted on the RC primary sub sample split. Industry standard practice supports splitting of primary sub samples at particle sizes of <6mm and P ₈₀ 75µm.
	Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	Not applicable to this report.

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Criteria	JORC Code explanation	Commentary
	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.	<p>The QAQC protocols used include the following for all drill samples:</p> <ul style="list-style-type: none"> Field QAQC protocols used for all drill samples include commercially prepared certified reference materials (CRM) inserted at an incidence of 1 in 30 samples. The CRM used is not identifiable to the laboratory with QAQC data is assessed on import to the database and reported monthly, quarterly and yearly. NSR RC Resource definition drilling routinely inserts field blanks and monitor their performance. Laboratory QAQC protocols used for all drill samples include repeat analysis of pulp samples occurs at an incidence of 1 in 20 samples and screen tests (percentage of pulverised sample passing a 75µm mesh) are undertaken on 1 in 40 samples. The laboratories' own standards are loaded into the database and the laboratory reports its own QAQC data monthly. In addition to the above, about 3% of diamond drill samples are sent to a check laboratory. Samples for check -assay are selected automatically from holes based on the following criteria: grade above 1gpt or logged as a mineralised zone or is followed by feldspar flush or blank. Failed standards are generally followed up by re-assaying a second 50g pulp sample of all samples in the fire above 0.1ppm by the same method at the primary laboratory. <p>Both the accuracy component (CRM's and third-party checks) and the precision component (duplicates and repeats) of the QAQC protocols are thought to demonstrate acceptable levels of accuracy and precision.</p>
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections not verified.
	The use of twinned holes.	There is no purpose drilled twin holes.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Sampling and logging data are digitally entered into a tablet using Logchief software imported into SQL database using semi-automated or automated data entry. Digital assay files are loaded directly into the database. Visual checks are part of daily use of the data in Vulcan.
	Discuss any adjustment to assay data.	The first gold assay is almost always utilised for any Resource estimation except where evidence from re-assaying and/or check-assaying dictates. A systematic procedure utilizing several re-assays and/or check assays is in place to determine when the final assay is changed from the first gold assay.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	<p>Collar positions are recorded using conventional survey methods based on Leica TS15 3" total stations and Trimble R10 GNSS instruments. The location of each station is referenced to state-wide network of Standard Survey Marks (SSM) established and coordinated by the Department of Land Administration (WA Government). Where regional drill hole positions are distant from the SSM network, the world wide Global Navigational Satellite System (GNSS) network is used.</p> <p>Positional checks are carried out using a combination of existing known positions (usually based on prominent landmarks) and grid referenced information such as ortho-linear rectified photogrammetry based on the Map Gird of Australia MGA94.</p> <p>Collar coordinates are recorded in MGA94.</p> <p>Surface collar RL's have been validated utilizing an airborne elevation survey by Arvista in October 2017.</p> <p>Multi shot cameras and gyro units were used for down-hole survey.</p>

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Criteria	JORC Code explanation	Commentary
	Specification of the grid system used.	Collar coordinates are recorded in MGA94 Zone 51. The difference between magnetic north (MN) and true north (TN) is 1° 34' 30". The difference between true north (TN) and AMG84 Zone 51 (AMG GN) is 1° 02' 47". The difference between true north and GDA is zero.
	Quality and adequacy of topographic control.	Topographic control is from Digital Elevation Contours (DEM) 2017, 1m contour data and site surveyed pickups.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Tight spacing infill 5m by 10m.
	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.	Resources and Reserves are not being reported in this release.
	Whether sample compositing has been applied.	Core is sampled to geology; sample compositing is not applied until the estimation stage. RC samples are taken as 1 m samples and 4 m composites during first pass exploration, 1m samples are sent for further analysis if any 4m composites return a gold value > 0.1ppm or intervals containing alteration/mineralisation failed to return a significant composite assay result. For RC Resource definition drilling 1 m samples are routinely collected. No RC samples greater than 1m were used in estimation.
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 orientation of sampling is generally on a high angle to the main mineralisation trends as these are vertical to sub-vertical. Drill holes are drilled on 60 degrees angle perpendicular to the strike of the mineralisation.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	The drill orientation to mineralised structures biases the number of samples per drill hole. It is not thought to make a material difference in the Resource estimation.
Sample security	The measures taken to ensure sample security.	All samples are selected, cut and bagged in tied numbered calico bags, grouped in larger tied plastic bags, and placed in large sample cages with a sample submission sheet. The cages are either sent to the site laboratory or are transported via freight truck to Perth, with consignment note and receipted by external and independent laboratory All sample submissions are documented and all assays are returned via email and hard copy. Sample pulp splits from the site lab are stored at the Jundee mine site and those from the Newburn Lab in Perth are stored at the Newburn Lab. RC samples processed at SGS have had the bulk residue discarded and pulp packets sent to Jundee mine site for long term storage.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Historical audits of all Jundee data were carried out by previous operators. In 2012, Francois-Bongarcon (Agoratek International) conducted a heterogeneity studies, audit of site laboratory, and audit of plant samplers. Both audits found the sampling techniques and data to be adequate. All recent NSR sample data has been extensively QAQC reviewed both internally and externally.

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Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	<p>The Jundee Project consists of 7 Exploration Licences, 62 Mining Leases and 1 General Purpose Lease covering a total area of approximately 86,341 Ha. All are currently registered in the name of Newmont Yandal Operations Pty Ltd but Northern Star Resources Limited are the beneficial owners and transfers will be registered once the Office of State Revenue have completed their assessment to duty.</p> <p>The Project also includes 23 Miscellaneous Licenses, 3 Groundwater Licenses, a Pipeline License and the Jundee Pastoral Lease covering the bore fields, roads, airstrip, and gas pipeline. There are numerous access agreements in place including access rights over part of M53/193 which lies contiguous to, and beneath, the General Purpose Lease on which the Jundee processing plant is located.</p> <p>There are no heritage issues with the current operation. The majority of the Jundee leases are granted Mining Leases prior to 1994 (pre-Mabo) and as such Native Title negotiations are not required. During 2004, two agreements were struck between Ngaanyatjarra Council (now Central Desert Native Title Services (CDNTS)) and Newmont Yandal Operations, these agreements being the Wiluna Land Access Agreement 2004 and the Wiluna Claim Heritage Agreement 2004, both agreements were transferred to Northern Star on purchase of the Jundee Operations in 2014.</p>
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	All leases and licences to operate are granted and in the order for between 3 and 21 years.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Not Applicable, all the exploration work has been completed by NSR.
Geology	Deposit type, geological setting and style of mineralisation.	Ziggy-Marley and Mosley are Archean gold mineralised deposits that is part of the Northern Yandal Greenstone belt. Gold mineralisation is hosted by a granite and controlled by a brittle stockwork fracture-system within a north-easterly trending shear zone. The mineralisation formed by a stockwork of veins with smoky quartz, sulphides minor carbonate, chlorite and sericite hosted by a monzonitic granite. The mineralisation is intruded by an East-West striking (about 96 degrees) vertical dolerite dyke that cross cuts the mineralisation and is part of a suite of magnetic dolerite dykes that intrudes the Yandal belt in an East-West direction.
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: <ul style="list-style-type: none"> o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length. 	Summary drill data for all Ziggy-Marley and Mosley holes related to this release are presented.
	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.	No results excluded, both high and low grade intercepts are presented.

APPENDIX 3 – TABLE 1

Criteria	JORC Code explanation	Commentary
Data aggregation methods	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.	Reported intercepts are length weighted and uncut, generally > 1g/t and no more than 1m of internal waste included.
	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.	Reported intercepts are length weighted.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents are reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	Estimated true thickness is reported along with the downhole length.
	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').	Estimated true thickness is reported along with the downhole length.
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.	A plan view of collar locations from part of this release.
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 results are reported.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No other meaningful data to report.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Further extensional and resource definition drilling is continuing in FY2019.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Plans of the Ziggy-Marley and Mosley deposits are included in this report.