

Reserves and Resources

In line with best industry practices, Petropavlovsk reports its Mineral Resources and Ore Reserves in accordance with the JORC Code. These Group Mineral Resource and Ore Reserve estimates are an update on the estimates prepared in April 2017 by Wardell Armstrong International (WAI), a UK based independent technical consultancy firm. The updated estimates incorporate all material exploration completed during 2017 and take into account 2017 mining.

Total Mineral Resource ounces (including Reserves) as of 31 December 2017 amounted to 20.86Moz, compared to 20.16Moz in 2016, with a total Reserve of 8.15Moz

compared to 7.95Moz in the previous year. The increase in Mineral Resources is attributable to discoveries at Pioneer and Albyn, including Resource expansions at the NE Bakhmut 2 and Nikolaevskaya Zones (Pioneer) and at Unglichikan (Albyn), and also the discovery of the non-refractory satellite deposit Katrin (Pioneer).

The increase in Ore Reserves is attributable to open pit Reserve expansion at Elginskoye and Unglichikan, to an increase in underground Reserves at Pioneer, and to new open pit Reserves discovered via exploration at North East Bakhmut, Katrin as well as at the Otvalnaya Zone.

Taking into account the 0.47Moz depletion from mining operations during 2017, the Group achieved a 1.17Moz gross increase in Mineral Resources and a 0.67Moz gross increase in Ore Reserves, compared to the 2017 WAI statement.

Total Reserves for underground mining increased 16% from 0.37Moz to 0.43Moz, whilst underlying Mineral Resources for potential underground mining increased 26% from 0.72Moz to 0.93Moz. This increase is entirely at Pioneer, where new Mineral Resources and Ore Reserves have been estimated at the North East Bakhmut, Andreevskaya and Nikolaevskaya Zones.

The tables below provide a summary and an asset-by-asset breakdown of Group Mineral Resources and Ore Reserves.

Total Ore Reserves for open pit and underground extraction (as at 31 December 2017)

(in accordance with JORC Code)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Proven</i>	38,767	0.87	1.09
	<i>Probable</i>	213,125	1.03	7.06
	<i>Proven+Probable</i>	251,892	1.01	8.15
Non-Refractory	<i>Proven</i>	19,587	0.69	0.43
	<i>Probable</i>	103,383	1.09	3.62
	<i>Proven+Probable</i>	122,970	1.02	4.05
Refractory	<i>Proven</i>	19,180	1.06	0.65
	<i>Probable</i>	109,742	0.98	3.45
	<i>Proven+Probable</i>	128,922	0.99	4.10

Note: Figures may not add up due to rounding.

Total Ore Reserves for open pit extraction (as at 31 December 2017)

(in accordance with JORC Code)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Proven</i>	38,577	0.84	1.04
	<i>Probable</i>	210,790	0.99	6.68
	<i>Proven+Probable</i>	249,367	0.96	7.72
Non-Refractory	<i>Proven</i>	19,397	0.62	0.39
	<i>Probable</i>	101,597	1.02	3.33
	<i>Proven+Probable</i>	120,995	0.96	3.72
Refractory	<i>Proven</i>	19,180	1.06	0.65
	<i>Probable</i>	109,192	0.96	3.35
	<i>Proven+Probable</i>	128,372	0.97	4.01

Note: Figures may not add up due to rounding.

Reserves and Resources continued

Total Ore Reserves for underground extraction (as at 31 December 2017)

(in accordance with JORC Code 2012)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Proven</i>	190	7.87	0.05
	<i>Probable</i>	2,335	5.12	0.38
	<i>Proven+Probable</i>	2,525	5.32	0.43
Non-Refractory	<i>Proven</i>	190	7.87	0.05
	<i>Probable</i>	1,785	5.02	0.29
	<i>Proven+Probable</i>	1,975	5.30	0.34
Refractory	<i>Proven</i>	–	–	–
	<i>Probable</i>	550	5.43	0.10
	<i>Proven+Probable</i>	550	5.43	0.10

Note: Figures may not add up due to rounding.

Total Mineral Resource for potential open pit and underground extraction (as at 31 December 2017)

(in accordance with JORC Code)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Measured</i>	55,522	0.96	1.71
	<i>Indicated</i>	426,170	0.90	12.39
	<i>Measured+Indicated</i>	481,693	0.91	14.10
	<i>Inferred</i>	256,913	0.82	6.76
Non-Refractory	<i>Measured</i>	33,430	0.96	1.04
	<i>Indicated</i>	218,702	0.96	6.78
	<i>Measured+Indicated</i>	252,133	0.96	7.82
	<i>Inferred</i>	105,818	1.00	3.41
Refractory	<i>Measured</i>	22,092	0.95	0.67
	<i>Indicated</i>	207,468	0.84	5.61
	<i>Measured+Indicated</i>	229,560	0.85	6.29
	<i>Inferred</i>	151,095	0.69	3.35

Note: Figures may not add up due to rounding.

Total Mineral Resource for potential open pit extraction (as at 31 December 2017)

(in accordance with JORC Code)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Measured</i>	55,380	0.95	1.68
	<i>Indicated</i>	422,904	0.86	11.74
	<i>Measured+Indicated</i>	478,283	0.87	13.43
	<i>Inferred</i>	254,733	0.79	6.50
Non-Refractory	<i>Measured</i>	33,287	0.94	1.01
	<i>Indicated</i>	216,179	0.91	6.30
	<i>Measured+Indicated</i>	249,467	0.91	7.31
	<i>Inferred</i>	104,337	0.96	3.21
Refractory	<i>Measured</i>	22,092	0.95	0.67
	<i>Indicated</i>	206,724	0.82	5.44
	<i>Measured+Indicated</i>	228,816	0.83	6.11
	<i>Inferred</i>	150,396	0.68	3.29

Note: Mineral Resources are reported inclusive of Ore Reserves. Figures may not add up due to rounding.

Total Mineral Resource for potential underground extraction (as at 31 December 2017)

(in accordance with JORC Code 2012)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Measured</i>	143	5.87	0.03
	<i>Indicated</i>	3,267	6.19	0.65
	<i>Measured+Indicated</i>	3,409	6.18	0.68
	<i>Inferred</i>	2,181	3.67	0.26
Non-Refractory	<i>Measured</i>	143	5.87	0.03
	<i>Indicated</i>	2,523	5.88	0.48
	<i>Measured+Indicated</i>	2,666	5.88	0.50
	<i>Inferred</i>	1,481	4.17	0.20
Refractory	<i>Measured</i>	–	–	–
	<i>Indicated</i>	743	7.27	0.17
	<i>Measured+Indicated</i>	743	7.27	0.17
	<i>Inferred</i>	699	2.62	0.06

Note: Mineral Resources are reported inclusive of Ore Reserves. Figures may not add up due to rounding.

Summary of Ore Reserves by asset (as at 31 December 2017)

Pioneer

(in accordance with JORC Code 2012)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Proven</i>	19,962	0.68	0.44
	<i>Probable</i>	88,472	0.88	2.50
	<i>Proven+Probable</i>	108,434	0.84	2.94
Non-Refractory Open Pit	<i>Proven</i>	10,479	0.52	0.17
	<i>Probable</i>	40,441	0.73	0.95
	<i>Proven+Probable</i>	50,920	0.69	1.12
Non-Refractory Underground	<i>Proven</i>	74	4.03	0.01
	<i>Probable</i>	876	5.60	0.16
	<i>Proven+Probable</i>	950	5.48	0.17
Subtotal Non-Refractory (Open Pit and Underground)	<i>Proven</i>	10,553	0.54	0.18
	<i>Probable</i>	41,318	0.83	1.11
	<i>Proven+Probable</i>	51,870	0.77	1.29
Refractory Open Pit	<i>Proven</i>	9,409	0.85	0.26
	<i>Probable</i>	46,605	0.87	1.30
	<i>Proven+Probable</i>	56,014	0.86	1.55
Refractory Underground	<i>Proven</i>	–	–	–
	<i>Probable</i>	550	5.43	0.10
	<i>Proven+Probable</i>	550	5.43	0.10
Subtotal Refractory (Open Pit and Underground)	<i>Proven</i>	9,409	0.85	0.26
	<i>Probable</i>	47,154	0.92	1.39
	<i>Proven+Probable</i>	56,564	0.91	1.65
Subtotal Open Pit (Non-Refractory and Refractory)	<i>Proven</i>	19,888	0.67	0.43
	<i>Probable</i>	87,046	0.80	2.25
	<i>Proven+Probable</i>	106,934	0.78	2.68
Subtotal Underground (Non-Refractory and Refractory)	<i>Proven</i>	74	4.03	0.01
	<i>Probable</i>	1,426	5.53	0.25
	<i>Proven+Probable</i>	1,500	5.46	0.26

Reserves and Resources continued

Albyn

(in accordance with JORC Code 2012)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Proven</i>	6,624	0.53	0.11
	<i>Probable</i>	57,310	1.19	2.20
	<i>Proven+Probable</i>	63,933	1.12	2.31
Non-Refractory Open Pit	<i>Proven</i>	6,624	0.53	0.11
	<i>Probable</i>	57,310	1.19	2.20
	<i>Proven+Probable</i>	63,933	1.12	2.31
Refractory Open Pit	<i>Proven</i>	–	–	–
	<i>Probable</i>	–	–	–
	<i>Proven+Probable</i>	–	–	–

Note: Figures may not add up due to rounding.

Malomir

(in accordance with JORC Code 2012)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Proven</i>	9,910	1.37	0.44
	<i>Probable</i>	65,148	1.08	2.27
	<i>Proven+Probable</i>	75,058	1.12	2.70
Non-Refractory Open Pit	<i>Proven</i>	23	0.83	0.001
	<i>Probable</i>	1,651	1.54	0.08
	<i>Proven+Probable</i>	1,674	1.53	0.08
Non-Refractory Underground	<i>Proven</i>	116	10.32	0.04
	<i>Probable</i>	909	4.46	0.13
	<i>Proven+Probable</i>	1,025	5.13	0.17
Subtotal Non-Refractory (Open Pit and Underground)	<i>Proven</i>	139	8.75	0.04
	<i>Probable</i>	2,560	2.58	0.21
	<i>Proven+Probable</i>	2,699	2.90	0.25
Refractory Open Pit	<i>Proven</i>	9,771	1.26	0.40
	<i>Probable</i>	62,588	1.02	2.05
	<i>Proven+Probable</i>	72,358	1.05	2.45
Subtotal Open Pit (Non-Refractory and Refractory)	<i>Proven</i>	9,794	1.26	0.40
	<i>Probable</i>	64,239	1.03	2.14
	<i>Proven+Probable</i>	74,033	1.06	2.53

Pokrovskiy*(in accordance with JORC Code 2012)*

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Proven</i>	244	0.59	0.005
	<i>Probable</i>	–	–	–
	<i>Proven+Probable</i>	244	0.59	0.005
Non-Refractory Open Pit	<i>Proven</i>	244	0.59	0.005
	<i>Probable</i>	–	–	–
	<i>Proven+Probable</i>	244	0.59	0.005
Refractory Open Pit	<i>Proven</i>	–	–	–
	<i>Probable</i>	–	–	–
	<i>Proven+Probable</i>	–	–	–

Note: All Pokrovskiy Ore Reserve is for open pit extraction.

Tokur*(WAI, 2010, in accordance with JORC Code 2004)*

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Proven</i>	2,028	1.47	0.10
	<i>Probable</i>	2,195	1.44	0.10
	<i>Proven+Probable</i>	4,223	1.45	0.20
Non-Refractory Open Pit	<i>Proven</i>	2,028	1.47	0.10
	<i>Probable</i>	2,195	1.44	0.10
	<i>Proven+Probable</i>	4,223	1.45	0.20
Refractory Open Pit	<i>Proven</i>	–	–	–
	<i>Probable</i>	–	–	–
	<i>Proven+Probable</i>	–	–	–

Note: All Tokur Ore Reserve is for open pit extraction

Notes on Ore Reserve statement:

- (1) Group Ore Reserves statements are prepared internally as an update of the April 2017 WAI estimate; Pioneer, Malomir and Albyn Reserves are prepared in February 2018 in accordance with JORC Code 2012; Tokur Reserves are prepared in 2010 in accordance with JORC Code 2004 and there have been no changes to the Tokur estimates since that date; All Pokrovskiy Ore Reserves are expected to be depleted by the end of Q1 2018, Pokrovskiy Reserve figures in this statement are based on January 2018 actual production and the February-March 2018 Group internal production plan
- (2) Pioneer, Malomir and Albyn Ore Reserves for open pit extraction are estimated within economical pit shells using a \$1,200/oz gold price assumption and applying other modifying factors based on the projected performance of these operating mines. Tokur Reserves have been based on a \$1,000/oz gold price assumption, together with operating costs assumptions relevant at the time of the estimate
- (3) The Open Pit Reserve cut-off grade for reporting varies from 0.3 to 0.5g/t Au, depending on the asset and processing method
- (4) Underground Ore Reserve estimates use a mine design with decline access, trackless mining equipment and a sublevel open stope mining method with or without back fill
- (5) Reserve figures have been adjusted for anticipated dilution and mine recovery
- (6) The Underground Reserve cut-off grade for reporting is 1.5g/t Au for Pioneer and 1.7g/t Au for Malomir
- (7) In accordance with JORC Code, all open pit and underground designs has been based on Measured and Indicated Resources; in addition to the Proven and Probable Reserve quoted above the design captures the following Inferred Resource:
 - Pioneer: 5,009kt@0.68g/t (0.11Moz) of non-refractory and 4,417kt @ 0.68g/t (0.10Moz) of refractory
 - Malomir: 484kt @ 2.59g/t of non-refractory and 2,013kt@0.86g/t (0.06Moz) of refractory
 - Albyn 2,345@1.27g/t (0.1Moz) of non-refractory
- (8) Figures may not add up due to rounding

Reserves and Resources continued

Summary of Mineral Resources by asset (as at 31 December 2017)

Pioneer

(in accordance with JORC Code 2012)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Measured</i>	24,621	0.69	0.55
	<i>Indicated</i>	165,820	0.77	4.12
	<i>Measured+Indicated</i>	190,441	0.76	4.66
	<i>Inferred</i>	66,396	0.67	1.44
Non-Refractory Open Pit	<i>Measured</i>	10,923	0.53	0.20
	<i>Indicated</i>	73,636	0.66	1.56
	<i>Measured+Indicated</i>	84,559	0.64	1.75
	<i>Inferred</i>	22,188	0.62	0.44
Non-Refractory Underground	<i>Measured</i>	105	4.36	0.01
	<i>Indicated</i>	1,389	6.82	0.30
	<i>Measured+Indicated</i>	1,494	6.65	0.32
	<i>Inferred</i>	584	4.18	0.08
Subtotal Non-Refractory (Open Pit and Underground)	<i>Measured</i>	11,028	0.57	0.20
	<i>Indicated</i>	75,026	0.77	1.87
	<i>Measured+Indicated</i>	86,053	0.75	2.07
	<i>Inferred</i>	22,773	0.71	0.52
Refractory Open Pit	<i>Measured</i>	13,593	0.79	0.34
	<i>Indicated</i>	90,051	0.72	2.07
	<i>Measured+Indicated</i>	103,644	0.73	2.42
	<i>Inferred</i>	42,925	0.62	0.85
Refractory Underground	<i>Measured</i>	–	–	–
	<i>Indicated</i>	743	7.27	0.17
	<i>Measured+Indicated</i>	743	7.27	0.17
	<i>Inferred</i>	699	2.62	0.06
Subtotal Open Pit (Non-Refractory and Refractory)	<i>Measured</i>	24,516	0.67	0.53
	<i>Indicated</i>	163,687	0.69	3.64
	<i>Measured+Indicated</i>	188,204	0.69	4.17
	<i>Inferred</i>	65,113	0.62	1.30
Subtotal Underground (Non-Refractory and Refractory)	<i>Measured</i>	105	4.36	0.01
	<i>Indicated</i>	2,133	6.98	0.48
	<i>Measured+Indicated</i>	2,238	6.86	0.49
	<i>Inferred</i>	1,283	3.33	0.14

Albyn*(in accordance with JORC Code 2012)*

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Measured</i>	6,785	0.54	0.12
	<i>Indicated</i>	79,944	1.19	3.06
	<i>Measured+Indicated</i>	86,728	1.14	3.17
	<i>Inferred</i>	48,732	1.14	1.78
Non-Refractory Open Pit	<i>Measured</i>	6,785	0.54	0.12
	<i>Indicated</i>	79,944	1.19	3.06
	<i>Measured+Indicated</i>	86,728	1.14	3.17
	<i>Inferred</i>	48,732	1.14	1.78
Refractory Open Pit	<i>Measured</i>	–	–	–
	<i>Indicated</i>	–	–	–
	<i>Measured+Indicated</i>	–	–	–
	<i>Inferred</i>	–	–	–

Note: All Albyn Mineral Resources is for open pit extraction

Malomir*(in accordance with JORC Code 2012)*

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	<i>Measured</i>	8,567	1.25	0.34
	<i>Indicated</i>	135,297	0.90	3.90
	<i>Measured+Indicated</i>	143,864	0.92	4.24
	<i>Inferred</i>	120,667	0.73	2.82
Non-Refractory Open Pit	<i>Measured</i>	30	1.12	0.001
	<i>Indicated</i>	17,490	0.64	0.36
	<i>Measured+Indicated</i>	17,520	0.65	0.36
	<i>Inferred</i>	12,299	0.67	0.27
Non-Refractory Underground	<i>Measured</i>	38	10.04	0.01
	<i>Indicated</i>	1,134	4.72	0.17
	<i>Measured+Indicated</i>	1,172	4.89	0.18
	<i>Inferred</i>	897	4.16	0.12
Subtotal Non-Refractory (Open Pit and Underground)	<i>Measured</i>	68	6.08	0.01
	<i>Indicated</i>	18,624	0.89	0.53
	<i>Measured+Indicated</i>	18,692	0.91	0.55
	<i>Inferred</i>	13,196	0.91	0.39
Refractory Open Pit	<i>Measured</i>	8,499	1.21	0.33
	<i>Indicated</i>	116,673	0.90	3.36
	<i>Measured+Indicated</i>	125,172	0.92	3.73
	<i>Inferred</i>	107,471	0.70	2.43
Subtotal Open Pit (Non-Refractory and Refractory)	<i>Measured</i>	8,529	1.21	0.33
	<i>Indicated</i>	134,163	0.86	3.73
	<i>Measured+Indicated</i>	142,692	0.88	4.06
	<i>Inferred</i>	119,770	0.70	2.70

Note: Figures may not add up due to rounding.

Reserves and Resources continued

Pokrovka&Burinda

(in accordance with JORC Code 2012)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	Measured	3,598	1.75	0.20
	Indicated	29,013	0.83	0.77
	Measured+Indicated	32,611	0.93	0.98
	Inferred	10,412	1.04	0.35
Non-Refractory	Measured	3,598	1.75	0.20
	Indicated	29,013	0.83	0.77
	Measured+Indicated	32,611	0.93	0.98
	Inferred	10,412	1.04	0.35
Refractory	Measured	–	–	–
	Indicated	–	–	–
	Measured+Indicated	–	–	–
	Inferred	–	–	–

Note: All Albyn Mineral Resources is for open pit extraction

Tokur

(WAI, 2010, in accordance with JORC Code 2004)

	Category	Tonnage (kt)	Grade (g/t Au)	Gold (Moz Au)
Total	Measured	11,952	1.30	0.50
	Indicated	16,096	1.06	0.55
	Measured+Indicated	28,048	1.16	1.05
	Inferred	10,706	1.09	0.38
Non-Refractory	Measured	11,952	1.30	0.50
	Indicated	16,096	1.06	0.55
	Measured+Indicated	28,048	1.16	1.05
	Inferred	10,706	1.09	0.38
Refractory	Measured	–	–	–
	Indicated	–	–	–
	Measured+Indicated	–	–	–
	Inferred	–	–	–

Note: All Tokur Mineral Resources is for open pit extraction

Notes to Mineral Resource Statement:

(1) Mineral Resources include Ore Reserves.

(2) Mineral Resource estimates for Pokrovskiy, Pioneer, Malomir and Albyn were prepared internally by the Group in accordance with JORC Code 2012 as an update of the April 2017 statement audited by WAI; Mineral Resources for Tokur were reviewed by WAI in 2010 in accordance with JORC Code 2004 and there have been no changes to the Tokur estimates since that date

(3) Open Pit Mineral Resources for Pokrovskiy, Pioneer, Malomir and Albyn are constrained by conceptual open-pit shells at a US\$1,500/oz long term gold price; Tokur Mineral Resources have no open pit constraints.

(4) The cut-off grade for the Mineral Resource for open pit mining varies from 0.30 to 0.4g/t depending on the type of mineralisation and proposed processing method.

(5) Cut-off grade is 1.5g/t is used to report Mineral Resource for potential underground mining.

(6) Mineral resources are not reserves until they have demonstrated economic viability based on a feasibility or pre-feasibility study.

(7) Grade represents estimated contained metal in the ground and has not been adjusted for metallurgical recovery.

(8) Figures may not add up due to rounding