

Papua New Guinea

Mineral resources and mineral reserves

Geology

PNG lies at the northern end of the Australian Plate and has three major components: a continental cratonic platform, an arc of volcanic islands and a central collisional fold belt, consisting of Mesozoic sediments, ophiolite sequences, tertiary sediments and diorite intrusions. During collision, the Wau Graben, the host of major gold and silver deposits, was formed in the fold belt. It coincided with a phase of volcanic activity, resulting in precious and base metals deposits being formed. These include epithermal gold deposits at Hidden Valley, Hamata, Kerimenge and Wafi and porphyry-style copper deposits such as Golpu. Numerous other gold and copper-gold prospects, which are at various stages of exploration and evaluation, occur on Harmony's lease areas.



Note: The mineral resources and mineral reserves detailed in the following tables represent Harmony's 50% equity portion of the Morobe Mining Joint Ventures.

Gold – Mineral resources

Operations	Measured				Indicated				Inferred				Total			
	Tonnes		Gold	Gold	Tonnes		Gold	Gold	Tonnes		Gold	Gold	Tonnes		Gold	Gold
	(Mt)	g/t	(000 kg)	(000 oz)	(Mt)	g/t	(000 kg)	(000 oz)	(Mt)	g/t	(000 kg)	(000 oz)	(Mt)	g/t	(000 kg)	(000 oz)
Hidden Valley	4.2	2.08	9	282	33.1	1.71	57	1 819	10.9	1.28	14	449	48.2	1.64	80	2 550
Hamata	0.1	1.71	–	5	2.9	2.34	7	221	0.4	2.82	1	37	3.3	2.38	8	263
Wafi	–	–	–	–	31.9	1.97	63	2 017	19.8	1.73	34	1 099	51.7	1.88	97	3 116
Golpu	–	–	–	–	44.9	0.65	29	935	205.4	0.52	107	3 440	250.3	0.54	136	4 375
Nambonga	–	–	–	–	–	–	–	–	19.9	0.79	16	505	19.9	0.79	16	505
Grand total	4.3	2.07	9	287	112.8	1.38	156	4 992	256.4	0.67	172	5 530	373.4	0.90	337	10 809

Mineral resources and mineral reserves cont.

Papua New Guinea – Mineral resources and mineral reserves cont.

Modifying factors

Operations	MCF (%)	PRF (%)
Hidden Valley	95	91
Hamata	95	92
Golpu	100	56

MCF = Mine call factor PRF = Plant recovery factor

Gold – Mineral reserves

Operations	Proved				Probable				Total			
	Tonnes		Gold (000 kg)	Gold (000 oz)	Tonnes		Gold (000 kg)	Gold (000 oz)	Tonnes		Gold (000 kg)	Gold (000 oz)
Hidden Valley	3.8	2.14	8	260	24.3	1.99	43	1 382	28.1	1.82	51	1 642
Hamata	–	–	–	–	2.9	2.00	6	196	2.9	2.10	6	196
Golpu	–	–	–	–	35.4	0.61	22	694	35.4	0.61	22	694
Grand total	3.8	2.14	8	260	62.6	1.13	71	2 272	66.4	1.19	79	2 532

Silver – Mineral resources

Operations	Measured				Indicated				Inferred				Total			
	Tonnes		Silver (000 kg)	Silver (000 oz)	Tonnes		Silver (000 kg)	Silver (000 oz)	Tonnes		Silver (000 kg)	Silver (000 oz)	Tonnes		Silver (000 kg)	Silver (000 oz)
Hidden Valley	4.2	35.00	147	4 739	33.1	33.40	1 105	35 537	10.9	31.10	340	10 920	48.2	33.02	1 592	51 196
Grand total	4.2	35.00	147	4 739	33.1	33.40	1 105	35 537	10.9	31.10	340	10 920	48.2	33.02	1,592	51 196

Modifying factors

Operations	MCF (%)	PRF (%)
Hidden Valley	100	77

MCF = Mine call factor PRF = Plant recovery factor

Silver – Mineral reserves

Operations	Proved				Probable				Total			
	Tonnes (Mt)	g/t	Silver (000 kg)	Silver (000 oz)	Tonnes (Mt)	g/t	Silver (000 kg)	Silver (000 oz)	Tonnes (Mt)	g/t	Silver (000 kg)	Silver (000 oz)
Hidden Valley	3.8	35.58	134	4 320	24.3	35.52	862	27 726	28.1	35.53	997	32,046
Grand total	3.8	35.58	134	4 320	24.3	35.52	862	27 726	28.1	35.53	997	32 046

Copper – Mineral resources

Operations	Measured				Indicated				Inferred				Total			
	Tonnes (Mt)	%	Cu (Mkg)	Cu (Mlb)	Tonnes (Mt)	%	Cu (Mkg)	Cu (Mlb)	Tonnes (Mt)	%	Cu (Mkg)	Cu (Mlb)	Tonnes (Mt)	%	Cu (Mkg)	Cu (Mlb)
Golpu	–	–	–	–	44.9	1.38	621	1 369	205.4	0.86	1 763	3 886	250.3	0.95	2 384	5 255
Nambonga	–	–	–	–	–	–	–	–	19.9	0.22	44	97	19.9	0.22	44	97
Grand total	–	–	–	–	44.9	1.38	621	1 369	225.3	0.80	1 807	3 983	270.2	0.90	2 428	5 352

Modifying factors

Operations	MCF (%)	PRF (%)
Golpu	100	88

MCF = Mine call factor PRF = Plant recovery factor

Copper – Mineral reserves

Operations	Proved				Probable				Total			
	Tonnes (Mt)	%	Cu (Mkg)	Cu (Mlb)	Tonnes (Mt)	%	Cu (Mkg)	Cu (Mlb)	Tonnes (Mt)	%	Cu (Mkg)	Cu (Mlb)
Golpu	–	–	–	–	35.4	1.13	400	882	35.4	1.13	400	882
Grand total	–	–	–	–	35.4	1.13	400	882	35.4	1.13	400	882

Molybdenum – Mineral resources

Operations	Measured				Indicated				Inferred				Total			
	Tonnes (Mt)	ppm	Mo (Mkg)	Mo (Mlb)	Tonnes (Mt)	ppm	Mo (Mkg)	Mo (Mlb)	Tonnes (Mt)	ppm	Mo (Mkg)	Mo (Mlb)	Tonnes (Mt)	ppm	Mo (Mkg)	Mo (Mlb)
Golpu	–	–	–	–	44.9	107.72	5	11	205.4	111.33	23	50	250.3	110.68	28	61
Grand total	–	–	–	–	44.9	107.72	5	11	205.4	111.33	23	50	250.3	110.68	28	61

Mineral resources and mineral reserves cont.

Papua New Guinea – Mineral resources and mineral reserves cont.

Modifying factors

Operations	MCF (%)	PRF (%)
Golpu	100	36

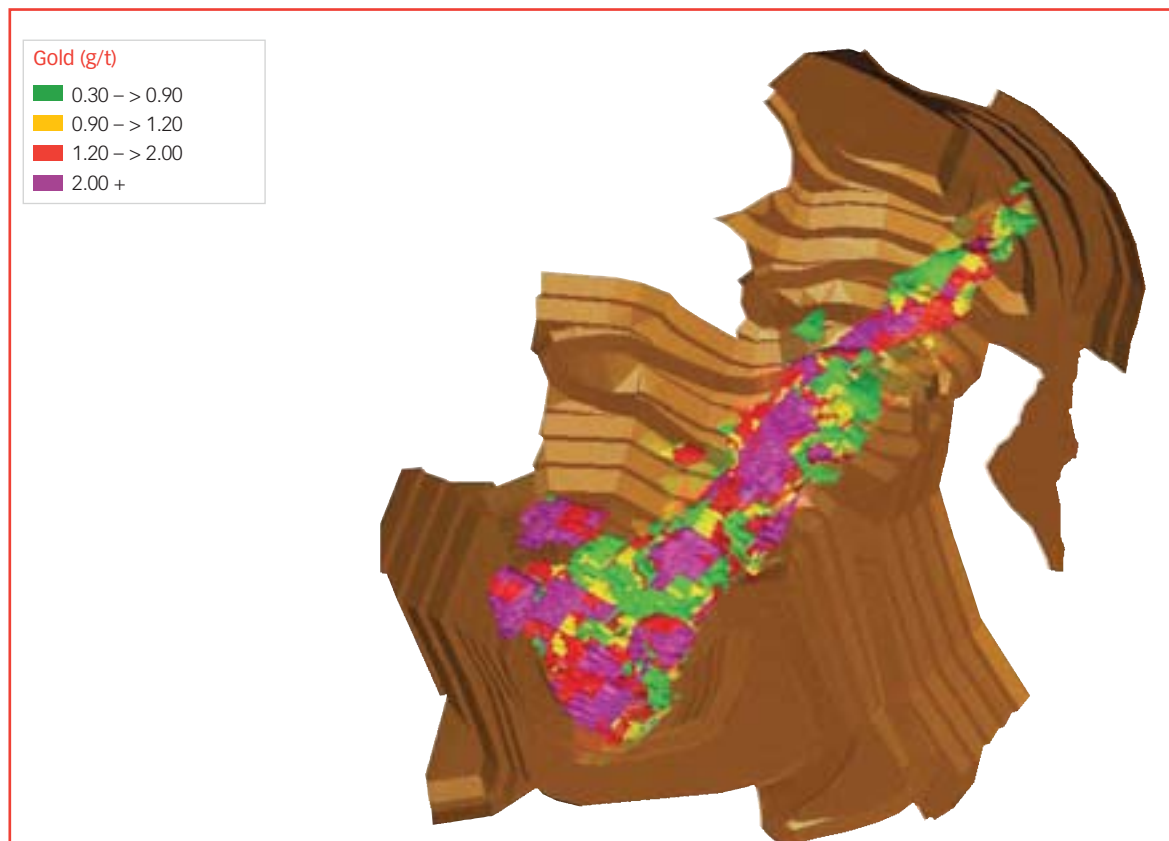
MCF = Mine call factor PRF = Plant recovery factor

Molybdenum – Mineral reserves

Operations	Proved				Probable				Total			
	Tonnes (Mt)	Mo ppm	Mo (Mkg)	Mo (Mlb)	Tonnes (Mt)	Mo ppm	Mo (Mkg)	Mo (Mlb)	Tonnes (Mt)	Mo ppm	Mo (Mkg)	Mo (Mlb)
Golpu	–	–	–	–	35.4	121.00	4	9	35.4	121.00	4	9
Grand total	–	–	–	–	35.4	121.00	4	9	35.4	121.00	4	9

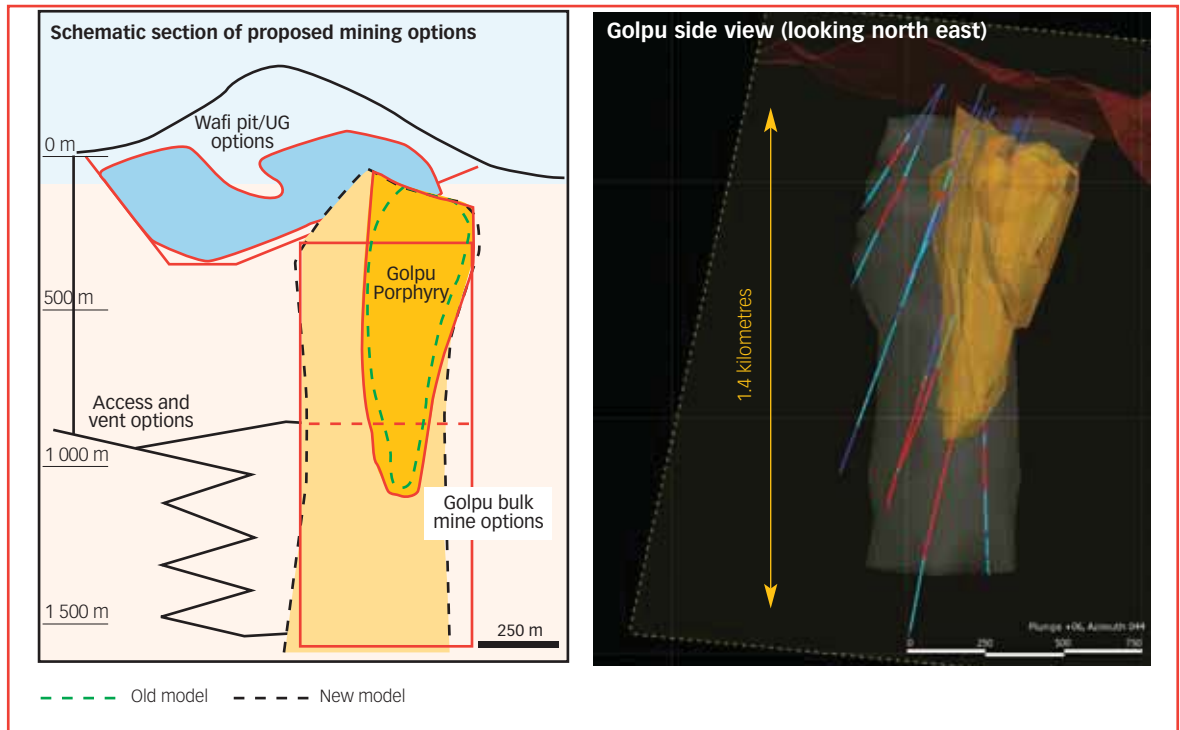
Hamata open pit

Hidden Valley



Wafi-Golpu project

Golpu block cave, Wafi Project



Hidden Valley, PNG