

SUBSTANTIAL COPPER-GOLD PORPHYRY SYSTEM CONFIRMED FROM SURFACE AT COPPER DUKE

Titan Minerals Limited (**Titan** or the **Company**) (ASX:TTM) is pleased to provide an update on exploration activities at its El Huato and Lumapamba prospects, at the Copper Duke Project (**Copper Duke**) in southern Ecuador.

Key Highlights include:

- Extensive copper-gold porphyry mineralisation and well-developed stockwork veining revealed in trenches, highlighting priority target areas at Copper Duke
- Significant trench and channel results for the El Huato and Lumapamba prospects include:
 - **4m @ 2.36 g/t Au, 0.14% Cu,**
in broader zone of 20m @ 0.90 g/t Au, 0.21% Cu, in HTC22-050.
 - **10m @ 1.20 g/t Au, 0.13% Cu,**
in broader zone of 20m @ 0.72 g/t Au, 0.10% Cu, in HTC22-037.
 - **10m @ 0.48 g/t Au, 0.11% Cu,**
in broader zone of 50m @ 0.16 g/t Au, 0.09% Cu, in HTT23-003.
 - **8m @ 0.52 g/t Au, 0.03% Cu and 16m @ 0.30 g/t Au, 0.01% Cu,**
in broader zone of 76m @ 0.19 g/t Au, 0.02 % Cu, in HTC22-022.
 - **14m @ 0.45 g/t Au, 0.58 % Cu,**
in broader zone of 28m @ 0.28 g/t Au, 0.40% Cu, in HTC22-054.
 - **10m @ 0.35 g/t Au, 0.07% Cu,**
in broader zone of 38m @ 0.14 g/t Au, 0.06% Cu, in HTC22-028.
- All necessary permits in place for drill testing El Huato and Lumapamba prospects.
- Age dating confirms Copper Duke mineralisation as Palaeocene (61 Ma) – the same age as giant Cerro Verde-Santa Rosa copper-molybdenum porphyry deposits in Peru,

Titan's CEO Melanie Leighton commented:

"These excellent channel and trench results are a testament to the efforts of our Copper Duke geology team, who have continued to improve the Company's geological understanding through systematic boots on ground exploration.

"The potential for substantial copper and gold mineralisation at the El Huato and Lumapamba prospects is now confirmed, with detailed mapping and trench results vectoring us to the best part of the mineral system, and the optimal location to commence drill testing.

"We are now well positioned to test these exciting targets, and are in the final stages of drill design and organising all necessary logistics, including the construction of an onsite office, core logging and camp facilities at the project.

"The icing on the cake is confirmation of the mineralisation age at Copper Duke, indicating that we could be on top of a giant system, similar in age to the mega porphyries of southern Peru."

Extensive Copper-Gold Porphyry Confirmed from Surface

The Company is pleased to provide an update on exploration activities at the Company's 100% held Copper Duke Project (**Copper Duke**) in southern Ecuador.

Considerable progress has been made on work programs over the high priority El Huato and Lumapamba prospects, where surface geochemistry, and mapped porphyry stocks exhibiting widespread hydrothermal alteration, quartz veinlets and mineralisation have highlighted the potential for a large-scale copper-gold porphyry system extending from surface.

Channel and trench sampling recently completed at Copper Duke has returned impressive results from the El Huato and Lumapamba prospects, with copper and gold mineralisation now confirmed over extensive areas.

Significant trench and channel results are detailed below.

El Huato prospect:

- 20m @ 0.90 g/t Au, 0.21 % Cu in HTC22-050,
including 4m @ 2.36 g/t Au, 0.14 % Cu,
- 50m @ 0.16 g/t Au, 0.09 % Cu in HTT23-003,
including 10m @ 0.48 g/t Au, 0.11 % Cu,
- 64m @ 0.07 g/t Au, 0.07 % Cu in HTT23-004,
including 22m @ 0.11 g/t Au, 0.12 % Cu,
- 50m @ 0.10 g/t Au, 0.08 % Cu in HTT23-005,
including 18m @ 0.12 g/t Au, 0.10 % Cu,
- 100m @ 0.06 g/t Au, 0.09 % Cu in HTC22-042,
including 12m @ 0.10 g/t Au, 0.13 % Cu,
- 124m @ 0.04 g/t Au, 0.07 % Cu in HTC22-044,
including 34m @ 0.06 g/t Au, 0.10 % Cu.

Lumapamba prospect:

- 20m @ 0.72 g/t Au, 0.10 % Cu in HTC22-037,
including 10m @ 1.20 g/t Au, 0.13 % Cu,
- 76m @ 0.19 g/t Au, 0.02 % Cu in HTC22-022,
including 8m @ 0.52 g/t Au, 0.03 % Cu, &
including 16m @ 0.30 g/t Au, 0.01 % Cu,
- 28m @ 0.28 g/t Au, 0.40 % Cu in HTC22-054,
including 14m @ 0.45 g/t Au, 0.58 % Cu.
- 38m @ 0.14 g/t Au, 0.06 % Cu HTC22-028,
including 10m @ 0.35 g/t Au, 0.07 % Cu,
- 6m @ 0.36 g/t Au, 0.60 % Cu in HTC22-034,
- 62m @ 0.10 g/t Au, 0.09 % Cu in HTC23-077.
including 30m @ 0.15 g/t Au, 0.12 % Cu

****NB. HTT prefix = trench. HTC prefix = channel.**

These channel and trench results provide valuable insight into the porphyry mineral system, effectively exposing and mapping the stronger copper and gold mineralisation within the large-scale porphyry system.

Channel and trench locations and lengths were based on the results of lithology, alteration and mineralisation obtained from geological mapping, and were routinely sampled over two metre intervals, with geological observations associated with mineralised intervals detailed in table 1.

The El Huato prospect is composed of Diorite and Quartz Diorite porphyry intrusions, which are affected by selective propylitic and potassic alteration, with superimposed chlorite-sericite alteration in specific areas. Potassic alteration comprises magnetite replacing mafics (15-20%), traces of secondary biotite (1-5 %).

The Lumapamba prospect is dominated by potassic alteration exhibiting secondary biotite, green-grey sericite and magnetite (25-75% intensity) which is observed to overprint both porphyry "Lumapamba" and intrusive breccia units. The Lumapamba prospect also hosts a Hornblende Diorite Porphyry which exhibits propylitic alteration.

Table 1. Geological observations taken from trenches with better tenor copper and gold mineralisation.

Prospect	El Huato	Lumapamba
Lithology	Diorite porphyry, phaneritic, comprised of plagioclase, hornblende, magnetite, biotite, quartz.	Diorite porphyry, coarse grained, comprised of plagioclase, hornblende and quartz phenocrysts and 20-25% groundmass.
Alteration	Weak propylitic alteration- epidote and selective replacement in mafics by chlorite. Potassic alteration- magnetite replacing mafics and traces of secondary biotite. Weak phyllic alteration in halos of type D veinlets with sericite	Selective potassic alteration- biotite overprinting hornblende, observed in partial replacement. Disseminated magnetite. Patches of transitional green sericite. Actinolite in veinlets.
Veining	B type veinlets: dominated by 95% quartz and 5% iron oxides. D type veinlets: iron oxide suture with sericite halo. Sulphide veinlets: composed of iron oxides. Epithermal veins	Carbonate veinlets B type veinlets Sulphide veinlets
Oxides & Mineralisation	Iron oxides in veinlets (hematite 70-80%, and goethite 20-30%), and in fracture manganese oxide Secondary chalcocite mineralisation in fractures and faults.	Secondary mineralisation in fractures and faults (chalcocite and malachite). Hypogene mineralisation in veinlets and disseminated (pyrite and chalcopyrite).

ASX ANNOUNCEMENT

18 July 2023



Plate 1: El Huato Trench HTT23-001: 22-24m- Diorite Porphyry with Stockwork B and D type veinlets.



Plate 2. Left: El Huato Trench HTT23-004: 50-52m – Diorite Porphyry with stockwork B and D type veinlets. Right: Chalcocite observed in fractures and faults.

Systematic Exploration for Large-scale Porphyry System

Titan's team of dedicated geologists have been focussed on exploring the Copper Duke Project, where over the past two years they have conducted systematic exploration, and collected key layers of geological information, giving the Company a significantly improved geological understanding.

Geological datasets now assembled across the project include:

- **Soil and rock geochemistry**
 - Regional soil sampling on 200 x 100m spaced grid, and infill on 100 x 50m spaced grid
- **Surface trenching and channel sampling over priority areas**
- **Remote sensing:**
 - Aeromagnetic and radiometric geophysical surveys
 - SWIR/ VNIR multi-spectral data
- **Detailed surface mapping**
 - Geological mapping at a 1: 1,000 scale at the El Huato and Lumapamba prospects.
 - Mapping and channel sampling programs have been established in roads, streams, and rivers which provide good exposure for gathering geological information.
 - Detailed surface mapping has highlighted:
 - extensive hydrothermal alteration
 - abundant veining –stockwork and sheeted porphyry and epithermal vein styles
 - structural complexity indicating favourable environment for multiple mineralising events
- **Age dating:**
 - Recent molybdenite (Re-Os) age dating indicates an age of 61.8 Ma for Copper Duke mineralisation ie. Palaeocene
 - Similar age deposits include the giant porphyry Cu-Mo systems of southern Peru, eg. The Cerro Verde-Santa Rosa copper-molybdenum porphyry deposit, which contains 17Mt copper.

Previous exploration conducted at the Copper Duke Project had indicated the large-scale porphyry potential, however, the datasets were disparate and incomplete.

Over the past two years Titan has conducted systematic exploration, collecting, and integrating robust layers of data, giving confidence to commence drill testing the high priority El Huato and Lumapamba prospects.

The Company looks forward to providing further updates as results from exploration work programs are received.

ASX ANNOUNCEMENT

18 July 2023

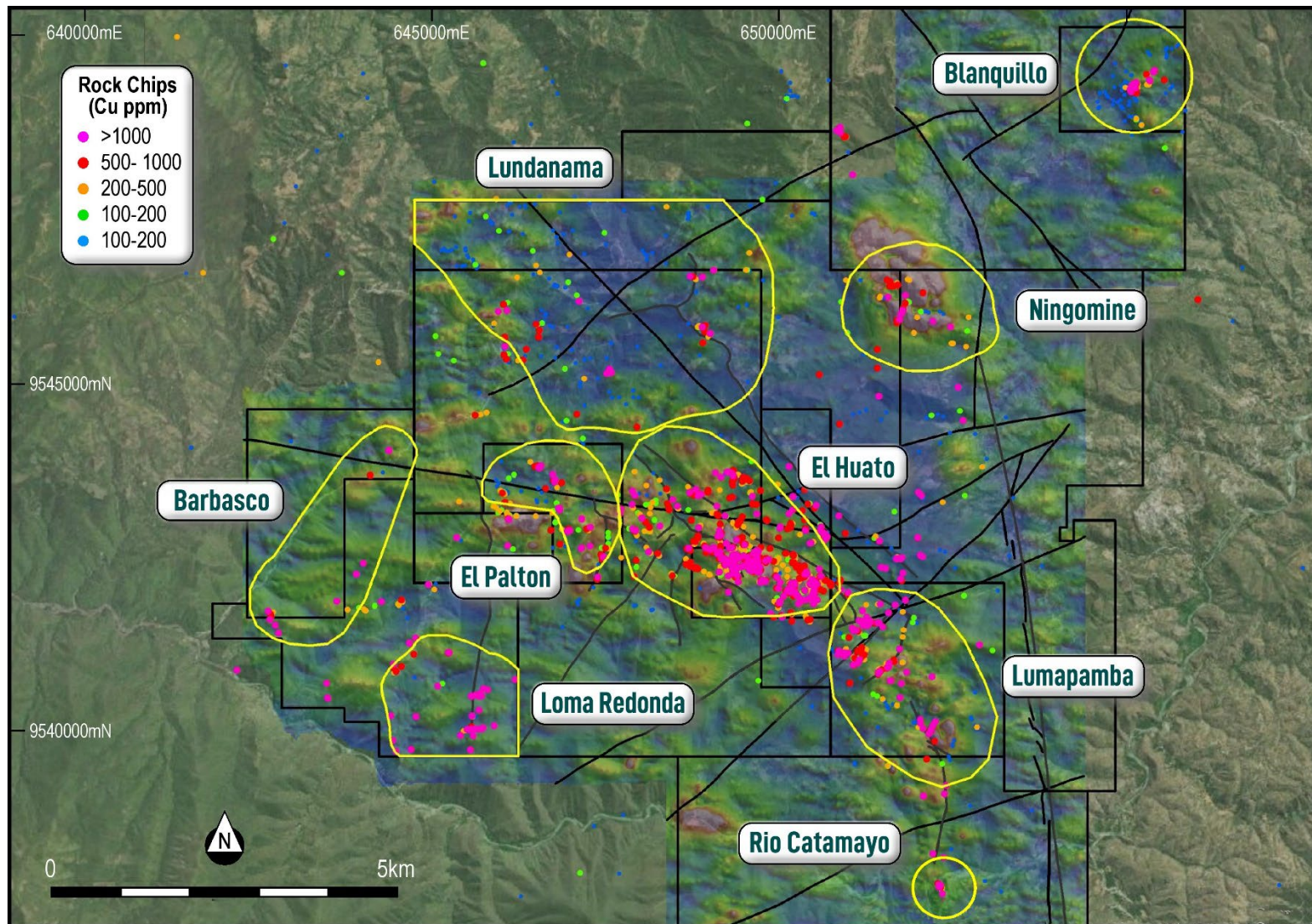


Figure 1: Copper Duke Location map showing aeromagnetic image (analytic signal), regional structures, rock chips (Cu ppm), Titan concessions and prospects.

ASX ANNOUNCEMENT

18 July 2023

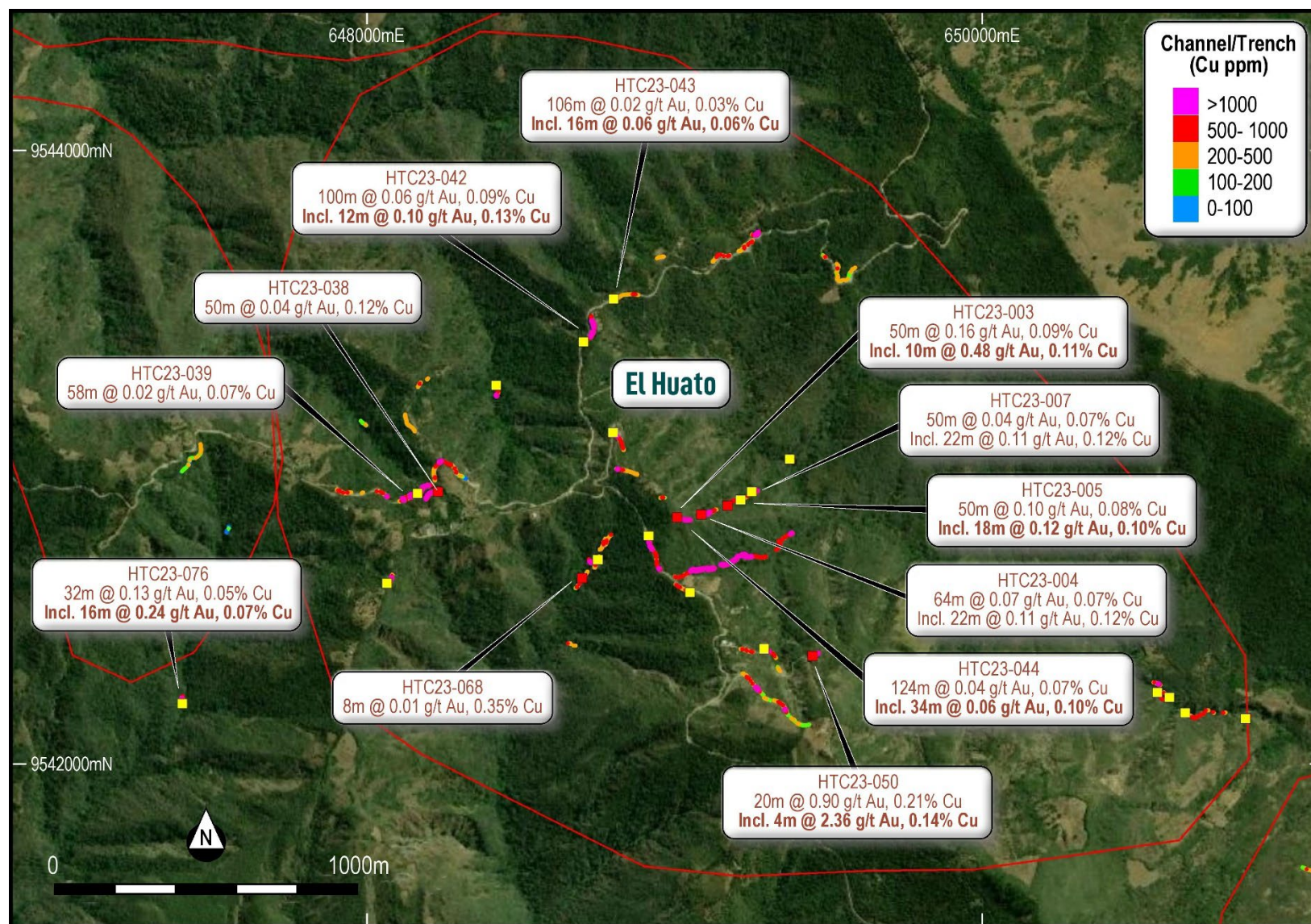


Figure 2. Significant trench and channel gold and copper results for the El Huato prospect

ASX ANNOUNCEMENT

18 July 2023

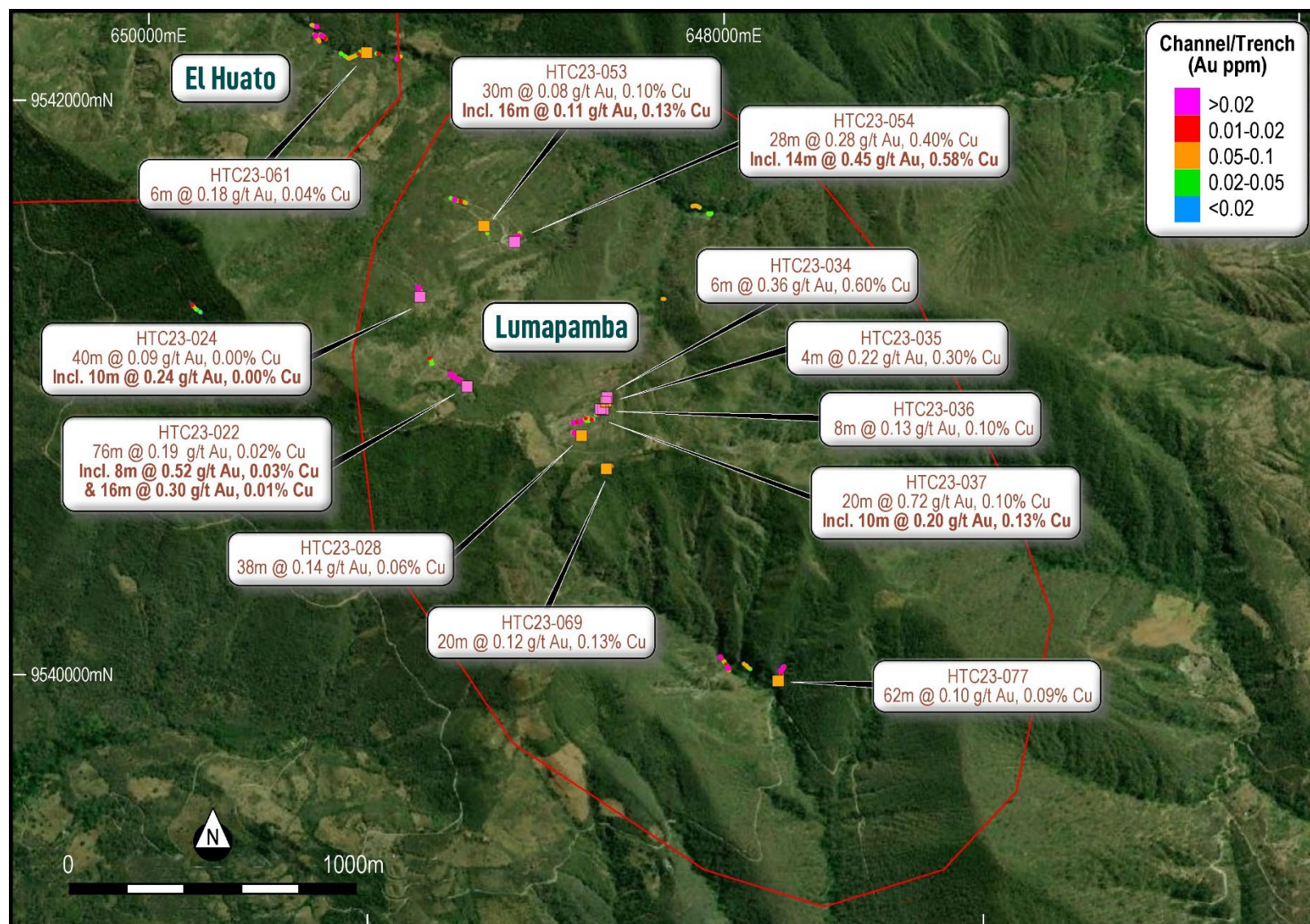


Figure 3. Significant trench and channel gold and copper results for the Lumapamba prospect

About the Copper Duke Project

The Copper Duke Project (**Copper Duke** or **The Project**) is 100% held by Titan Minerals and is an early-stage exploration project located 24km east of the Dynasty Gold Project. The Project comprises 13 contiguous concessions for a total area of 130km², with all 13 concessions fully permitted for exploration and small-scale mining.

Regionally, the Copper Duke Project lies at the northern contact of the Tangua batholith, situated adjacent to Cretaceous volcano-sediments. Local geology comprises outcropping diorite and quartz-diorite rocks with small alteration zones. Outcropping copper and gold mineralisation is hosted in veins and tectonic breccias and outcropping copper-gold bearing skarns are located at the contact with the Tangua Batholith and Celica Formation. Exploration deposit models being targeted are porphyry copper gold systems, intrusion related gold and copper-gold bearing skarns.

Work to date has confirmed the project to host multiple porphyritic textured dioritic intrusions associated with extensive copper-gold anomalism and quartz hosted gold veining outcropping at surface.

The scale, geometry and extent of geophysical anomalism identified at Copper Duke shows resemblance to many major porphyry districts around the world, with magnetic geophysical surveys revealing clusters of intrusion related anomalism over an area greater than 12km².

A large-scale 7km porphyry alteration footprint has been highlighted by magnetics, soil geochemistry (coincident gold-copper-molybdenum and associated pathfinder elements), trenching and surface mapping.

Multi-phase outcropping targets including epithermal gold, breccia copper, and porphyry copper-gold mineral systems have been identified at Copper Duke, with Titan's mapping and trenching uncovering diorite porphyry units with abundant A+B+D stockwork and sheeted porphyry veins and strong copper oxide and iron oxide mineralisation from surface.

The Copper Duke Project exhibits structural complexity, particularly in the centre of the project (El Huato and Lumapamba prospects) where multiple intersecting structures and multiple phases of intrusion related mineralisation indicate the potential for a fertile, long-lived mineral system.

Three main areas of interest have been identified from technical work completed by Titan:

1. **El Huato:** El Palton, Barbasco North, Barbasco
2. **Lumapamba:** Malachite, Barbasco Guayacan, Huato Camp, Lumapamba Breccia and
3. **Lumapamba South**

These prospects will be subject to a ranking and prioritisation exercise, with the highest priority targets to feature in drilling programs.

ASX ANNOUNCEMENT

18 July 2023



Figure 4: Titan Minerals southern Ecuador Projects, peer deposits and surrounding infrastructure

ENDS-

Released with the authority of the Board.

For further information on the company and our projects, please visit: www.titanminerals.com.au

Contact details:

Investor Relations: Australia

Melanie Leighton – Chief Executive Officer

E: melanie@titanminerals.com.au

Ph: +61 8 6375 2700

Competent Person's Statements

The information in this report that relates to Exploration Results is based on and fairly represents information compiled by Ms Melanie Leighton, who is an experienced geologist and a Member of The Australian Institute of Geoscientists. Ms Leighton is a full-time employee at Titan Minerals and has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the JORC 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves'. Ms Leighton consents to their inclusion in the report of the matters based on this information in the form and context in which it appears.

Forward-looking Statements

This announcement may contain "forward-looking statements" and "forward-looking information", including statements and forecasts. Often, but not always, forward-looking information can be identified by the use of words such as "plans", "expects", "is expected", "is expecting", "budget", "outlook", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "believes", or variations (including negative variations) of such words and phrases, or state that certain actions, events or results "may", "could", "would", "might", or "will" be taken, occur or be achieved. Such information is based on assumptions and judgments of Titan's directors and management regarding future events and results.

The purpose of forward-looking information is to provide the audience with information about Titan's expectations and plans. Readers are cautioned that forward-looking information involves known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Titan and/or its subsidiaries to be materially different from any future results, performance or achievements expressed or implied by the forward-looking information. Forward-looking information and statements are based on the reasonable assumptions, estimates, analysis and opinions of Titan directors and management made in light of their experience and their perception of trends, current conditions and expected developments, as well as other factors that Titan directors and management believe to be relevant and reasonable in the circumstances at the date such statements are made, but which may prove to be incorrect. Titan believes that the assumptions and expectations reflected in such forward-looking statements and information are reasonable.

Readers are cautioned that the foregoing list is not exhaustive of all factors and assumptions which may have been used. Titan does not undertake to update any forward-looking information or statements, except in accordance with applicable securities laws.

APPENDIX A: Copper Duke Significant Channel & Trench Intersections

Table 1. El Huato Prospect

Hole ID	Easting	Northing	Elevation	Length	Azimuth	Inclination		From	To	Interval	Au g/t	Cu %	Ag ppm	Mo ppm
HTC22-025	650617	9542214	1691	26	326	4		0	26	26	0.08	0.07	0.48	12.30
HTC22-026	650588	9542255	1703	26	304	10		0	26	26	0.06	0.04	0.33	4.79
HTC22-027	650865	9542144	1701	20	0	2		0	20	20	0.09	0.05	0.66	27.52
HTC22-038	648233	9542884	1865	50	256	2		0	50	50	0.04	0.12	0.68	6.69
							<i>including</i>	24	44	20	0.05	0.15	0.77	10.83
HTC22-039	648167	9542879	1884	58	280	-3		0	58	58	0.02	0.07	0.82	14.81
HTC22-040	648972	9542865	1880	16	264	2		0	16	16	0.03	0.04	0.80	14.98
HTC22-041	647950	9542882	1904	54	278	1		0	54	54	0.03	0.04	0.65	46.17
HTC22-042	648708	9543372	1894	100	56	4		0	100	100	0.06	0.09	0.65	15.62
							<i>including</i>	58	70	12	0.10	0.13	0.72	16.57
HTC22-043	648805.9	9543512	1890	106	80	-68		0	106	106	0.02	0.03	0.17	4.45
							<i>including</i>	78	94	16	0.06	0.06	0.25	4.77
HTC22-044	648919	9542741	1914	124	175	-1		0	124	124	0.04	0.07	0.39	9.80
							<i>including</i>	4	38	34	0.06	0.10	0.45	6.75
HTC22-045	649055	9542556	1924	56	296	-6		0	56	56	0.03	0.05	0.23	13.36
HTC22-047	649219	9542373	1951	44	106	-12		0	44	44	0.03	0.05	0.22	5.48
HTC22-048	649296	9542372	1947	52	118	-4		0	52	52	0.04	0.05	0.30	3.99
HTC22-049	649339	9542314	1940	18	153	-1		0	18	18	0.02	0.02	0.23	1.20
HTC22-050	649455	9542349	1926	20	60	17		0	20	20	0.90	0.21	2.30	12.10
							<i>including</i>	0	4	4	2.36	0.14	4.80	23.55
HTC22-057	650577	9542230	1710	30	143	-2		0	30	30	0.08	0.07	0.50	14.10
HTC22-058	649379	9542990	1802	14	128	0		0	14	14	0.04	0.05	0.19	5.97
HTC22-059	650668	9542164	1714	72	118	3		26	72	46	0.04	0.06	0.29	6.27
HTC22-060	650734	9542171	1693	10	83	0		0	10	10	0.02	0.03	0.14	10.02
HTC22-061	650758	9542167	1719	6	135	0		0	6	6	0.18	0.04	0.34	27.63
HTC22-062	650790	9542163	1716	10	82	0		0	10	10	0.06	0.05	0.23	17.47

ASX ANNOUNCEMENT

18 July 2023



HTC22-063	648067	9542586	1930	34	45	4		0	34	34	0.02	0.07	0.64	3.99
HTC23-064	648158	9543080	1861	70	329	-8		0	70	70	0.01	0.03	0.14	4.43
HTC23-067	648423	9543231	1717	40	166	4		0	40	40	0.03	0.06	0.23	8.53
HTC23-068	648703	9542603	1774	30	65	14		0	30	30	0.01	0.14	0.18	19.01
							<i>including</i>	0	8	8	0.01	0.35	0.14	33.70
HTC23-070	647981	9543115	1729	26	133	24		0	26	26	0.01	0.02	0.59	5.82
HTC23-074	648970	9543651	1942	26	262	9		0	26	26	0.02	0.03	0.14	2.87
HTC23-075	648674	9542382	1698	10	80	30		0	10	10	0.02	0.03	0.18	105.96
HTC23-079	648695	9542585	1655	22	227	-24		0	22	22	0.02	0.04	0.20	16.41
HTC23-080	648656	9542390	1704	12	88	20		0	12	12	0.02	0.05	0.19	6.91
HTT23-001	648804	9543078	1945	70	138	3		0	70	70	0.03	0.06	0.38	2.07
HTT23-002	648814	9542959	1954	72	100	5		0	72	72	0.02	0.04	0.27	2.75
HTT23-003	649013	9542800	1967	50	104	-21		0	50	50	0.16	0.09	0.44	3.08
							<i>including</i>	24	34	10	0.48	0.11	0.59	3.16
HTT23-004	649092	9542810	1946	64	73	-35		0	64	64	0.07	0.07	0.32	4.41
							<i>including</i>	12	34	22	0.11	0.12	0.50	6.67
HTT23-005	649178	9542839	1891	50	40	-21		0	50	50	0.10	0.08	0.56	3.90
							<i>including</i>	0	18	18	0.12	0.10	0.49	3.38
HTT23-006	648798	9542745	1839	50	225	-30		0	50	50	0.03	0.04	0.40	18.25
HTT23-007	649220	9542858	1892	70	68	-44		0	50	50	0.04	0.05	0.34	5.20
							<i>including</i>	30	50	20	0.08	0.09	0.47	7.01
HTT23-008	648780	9542732	1809	50	213	-21		0	50	50	0.02	0.04	0.31	11.96
HTT23-009	648759	9542674	1798	50	180	-18		0	50	50	0.01	0.04	0.21	8.47
HTT23-010	648754	9542663	1745	44	255	-30		0	44	44	0.02	0.09	0.25	18.85
HTT23-012	649256	9542884	1868	20	83	-9		0	20	20	0.06	0.08	0.59	4.96
HTC22-046	647459	9543040	1878	130	174	-19		0	130	130	0.01	0.02	0.41	2.56
HTC23-076	647400	9542194	1573	32	5	-2		0	32	32	0.13	0.05	0.96	2.57
							<i>including</i>	16	32	16	0.24	0.07	1.65	2.78
HTC23-078	647545	9542750	1722	26	350	8		0	26	26	0.01	0.01	0.75	2.68

NB. HTC= Channel samples, HTT= Trench samples. Collar locations are given in WGS84 Datum, UTM 17 South

ASX ANNOUNCEMENT

18 July 2023



Table 2. Lumapumba prospect

Hole ID	Easting	Northing	Elevation	Length	Azimuth	Inclination		From	To	Interval	Au g/t	Cu %	Ag ppm	Mo ppm
HTC22-022	651107	9541004	1950	76	318	-6		0	76	76	0.19	0.02	0.26	0.86
							<i>Including</i>	12	20	8	0.52	0.03	0.31	0.38
							<i>& Including</i>	60	76	16	0.30	0.01	0.27	0.46
HTC22-023	650987	9541083	1940	24	343	-8		0	24	24	0.03	0.01	0.20	0.27
HTC22-024	650945	9541317	1921	40	18	-2		0	40	40	0.09	0.00	0.10	0.57
							<i>including</i>	30	40	10	0.24	0.00	0.13	0.61
HTC22-028	651507	9540833	1863	38	306	-18		0	38	38	0.14	0.06	0.48	1.55
HTC22-029	651492	9540881	1869	26	276	52		0	26	26	0.09	0.04	0.36	6.11
HTC22-030	651507	9540884	1859	12	233	16		0	12	12	0.09	0.04	0.52	3.06
HTC22-031	651515	9540891	1888	14	63	-18		0	14	14	0.05	0.04	0.46	2.69
HTC22-032	651522	9540885	1872	34	79	-10		0	34	34	0.03	0.03	0.27	1.07
HTC22-033	651556	9540905	1844	42	28	-14		0	42	42	0.07	0.06	0.38	2.69
HTC22-034	651573	9540926	1843	6	72	-10		0	6	6	0.36	0.60	1.54	8.19
HTC22-035	651581	9540925	1812	4	39	-8		0	4	4	0.22	0.30	1.37	5.03
HTC22-036	651591	9540952	1812	8	9	-11		0	8	8	0.13	0.10	0.42	3.99
HTC22-037	651595	9540965	1806	20	298	-26		0	20	20	0.72	0.10	1.37	3.74
							<i>including</i>	10	20	10	1.20	0.13	2.35	2.56
HTC22-051	651049	9541660	1796	40	119.05	-3		0	40	40	0.06	0.03	0.38	0.67
HTC22-052	651097	9541646	1784	8	114.01	0		0	8	8	0.04	0.03	0.16	0.53
HTC22-053	651166	9541565	1784	30	150.33	0		0	30	30	0.08	0.10	0.34	3.94
							<i>including</i>	2	18	16	0.11	0.13	0.42	4.71
HTC22-054	651273	9541507	1726	28	0.88	-14		0	28	28	0.28	0.40	1.07	3.77
							<i>including</i>	4	18	14	0.45	0.58	1.42	4.57
HTC22-055	652092	9540020	1345	30	314	8		0	30	30	0.04	0.03	0.14	2.16
HTC22-056	651288.1	9541524	1721	18	7.78	-14		0	18	18	0.09	0.13	0.29	1.71
HTC23-065	650184	9541261	2045	46	304.57	-3		0	46	46	0.02	0.01	3.98	0.57
HTC23-066	652019	9540016	1360	60	321	3		0	60	60	0.07	0.04	0.16	4.65
HTC23-069	651593	9540719	1906	20	63	3		0	20	20	0.12	0.13	0.76	4.33
HTC23-071	651793	9541310	1621	6	262	-28		0	6	6	0.06	0.02	0.12	2.11

ASX ANNOUNCEMENT

18 July 2023



HTC23-072	651891	9541632	1463	28	85	10		0	28	28	0.06	0.02	0.22	5.35
HTC23-073	651945	9541606	1436	16	100	10		0	16	16	0.04	0.01	0.25	1.39
HTC23-077	652190	9539980	1334	62	24	8		0	62	62	0.10	0.09	0.39	3.12
							including	18	60	42	0.12	0.10	0.46	3.90

NB. HTC= Channel samples, HTT= Trench samples. Collar locations are given in WGS84 Datum, UTM 17 South

APPENDIX B: Copper Duke Project - 2012 JORC Table 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <i>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.</i> <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i> <p><i>In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.</i></p>	<ul style="list-style-type: none"> Reported channel sampling was done as continuous and equal sampling of an excavated exposure of in-situ material to provide a representative sample of material sampled Channel sampling is completed as representative cut samples across measured intervals cut with hammer or hammer and chisel techniques. Samples were crushed to better than 70% passing a 2mm mesh and split to produce a 250g charge pulverised to 200 mesh to form a pulp sample. 50g charges were split from each pulp for fire assay for Au with an atomic absorption (AA) finish and samples exceeding 10g/t Au (upper limit) have a separate 50g charge split and analysed by fire assay with a gravimetric finish. Samples returning >10ppm Au from the AA finish technique are re-analysed by 50g fire assay for Au with a gravimetric finish. An additional charge is split from sample for four acid digests with ICP-MS reporting a 48-element suite. Within the 48 elements suite, overlimit analyses of a 5-element suite are performed with an ore grade technique (ICP-AES) if any one element for Ag, Pb, Zn, Cu, Mo exceeds detection limits in the ICP-MS61 method. Reported rock chip samples are composite grab samples collected from in situ outcrops selected by the geologist Reported soil sample anomalies were generated from surface soil samples taken on a nominal 200 x 100 m spaced grid and a 100x50m infill grid in El Huato prospect. Samples were taken from an approximate depth of 40-50 cm below surface in the B horizon. Sieving is executed in the ALS laboratory following the preparation package PREP-41, which consists of drying at <60°C/140°F, sieve sample to -180 micron (80 mesh).
Drilling techniques	<ul style="list-style-type: none"> <i>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).</i> 	<ul style="list-style-type: none"> Channel and trench sampling was completed on road cuts and other exposures cleared by mechanized equipment and channels dug by hand including.
Drill sample recovery	<ul style="list-style-type: none"> <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> <i>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.</i> 	<ul style="list-style-type: none"> Channel sample recovery is considered good, with a representative sample taken from each 2 metre composite.

ASX ANNOUNCEMENT

18 July 2023



Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	<ul style="list-style-type: none"> Reported channel samples are logged geologically to a level of detail to support mineral resource estimation in accordance with principle of the JORC Code. No data acquisition has commenced at the current stage of the project in support of geotechnical or metallurgical studies. Logging is recorded for all sampled and mapped intervals with qualitative logging completed for lithological composition, texture, colour, structures, veining, alteration, and quantitative logging for observed mineralogy, and estimated mineral content of quartz sulphide minerals. All channels sampled are photographed at the time of sampling. All sampled intercepts in this report are logged for geology and alteration.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> If core, whether cut or sawn and whether quarter, half or all cores taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality, and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled. 	<ul style="list-style-type: none"> Channel samples collected on nominal 2m intervals, with localised variations based on exposure and geological contacts as defined by the geologist in the field. Samples are sent for analysis as collected in their entirety and no site prep is undertaken. Reported channel samples are deemed of sufficient size and representative in nature across measured widths to be appropriate. Rock samples however do not have appropriate sample prep or sample methodology to be considered a representative sample and are not intended for use in a mineral resource estimation. Field duplicates are taken regularly to assess the quality of field sampling procedures (and/or heterogeneity of the sample material). No studies have yet been completed to assess heterogeneity of the sample medium, however samples collected are of sufficient size to meet industry best practices for the style of mineralisation being assessed.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> 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. 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. 	<ul style="list-style-type: none"> All reported results are submitted to an accredited independent laboratory and are analysed by methods considered 'near total' assay techniques as outlined in previous sections of this table. No geophysical tools used in reported channel sampling. Quality control and quality assurance procedures ("QAQC") are defined in Titan sampling procedure documents and for the reported results QAQC for reported channel sampling work is comprised of 4.8% blanks, 4% field duplicates, and 3.4% certified reference material (standards) for an aggregate 12% of QAQC independent of the laboratories in-house QAQC. All results are checked before upload to the digital database to confirm they are performing as expected.
Verification of sampling and assaying	<ul style="list-style-type: none"> The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	<ul style="list-style-type: none"> The Company has duplicated several samples reported by previous explorers, where sampling work lacked adequate reporting of QAQC to validate previous work, and previous assay techniques were constrained to only gold-silver. Repeated sampling has confirmed gold, copper, and molybdenum anomalism at reported locations. No new drilling is included in the reported results, and no twinning has been undertaken. Field data is captured in both hard copy and digital formats and transmitted to the

ASX ANNOUNCEMENT

18 July 2023



Criteria	JORC Code explanation	Commentary
		<p>database management team for upload to a managed MX deposits database controlled by the database manager.</p> <ul style="list-style-type: none"> No adjustment to data is made in the reported results
Location of data points	<ul style="list-style-type: none"> <i>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.</i> <i>Specification of the grid system used</i> <i>Quality and adequacy of topographic control.</i> 	<ul style="list-style-type: none"> Soil, trench and channel samples are all located by a single point at the Channel's "Start point" surveyed by handheld GPS. Surveys are accurate to +/- 5m in horizontal precision. The sample locations are then measured by tape and azimuth from the Start Point or extrapolated from the start point based on dip and azimuth of the trench. All surveyed data is collected and stored in WGS84 datum Zone 17 south. Topographic control is ground survey quality and reconciled against Drone platform with 1m pixel resolution.
Data spacing and distribution	<ul style="list-style-type: none"> <i>Data spacing for reporting of Exploration Results.</i> <i>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.</i> <i>Whether sample compositing has been applied.</i> 	<ul style="list-style-type: none"> No systematic grid for mapping, rock chip sampling and channel sampling is defined, with early-stage exploration work constrained to existing outcrops, road cuts and areas of artisanal workings. Where continuous exposures have been cleared in road cuts or artisanal workings providing a surface for representative sampling, sampling is completed on nominal 2m intervals. Reported data to date for the project does not have adequate spacing or distribution sufficient to establish continuity of mineralisation or underpin a mineral resource estimation, and further systematic exploration including drilling is required. No Sample compositing has been applied in reported exploration results.
Orientation of data in relation to geological structure	<p><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></p> <ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> Geometry of the mineralisation identified has not been outlined with adequate sample density to comment on potential for bias in sampling. Relationship between trench and channel and orientation, and orientation of key mineralised structures is not yet defined and requires further assessment.
Sample security	<ul style="list-style-type: none"> <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> Samples were collected by Titan Minerals geologists and held in a secured yard prior to shipment for laboratory analysis. Samples are enclosed in polyweave sacks for delivery to the lab and weighed individually prior to shipment and upon arrival at the lab. Sample shipment is completed through a commercial transport company with closed stowage area for transport.
Audits or reviews	<ul style="list-style-type: none"> <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> No audits or reviews of reported data completed outside of standard checks on inserted QAQC sampling.

ASX ANNOUNCEMENT

18 July 2023



Section 2 - Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary														
Mineral tenement and land tenure status	<ul style="list-style-type: none">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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	<ul style="list-style-type: none">Titan Minerals Ltd, through its indirect wholly owned Ecuadorian subsidiaries, holds a portfolio of exploration properties in the Loja Province of Ecuador. Amongst these, Titan holds a 100% interest in:<table><tr><td>BARBASCO</td><td>BARBASCO 4</td></tr><tr><td>COLANGA</td><td>LUMAPAMBA</td></tr><tr><td>BARBASCO 1</td><td>LUMAPAMBA 1</td></tr><tr><td>BARBASCO 2</td><td>GONZA 1</td></tr><tr><td>GLORIA</td><td>CAROL</td></tr><tr><td>GLORIA 1</td><td>CATACocha</td></tr><tr><td>COLANGA 2</td><td></td></tr></table>Titan’s 100% owned Concessions total an area of 130km2.Mineral concessions in Ecuador are subject to government royalty, the amount of which varies from 3% to 4% depending on scale of operations and for large scale operations (>1,000tpd underground or >3,000tpd open pit) is subject to negotiation of a mineral/mining agreement.Mineral concessions require the holder to (i) pay an annual conservation fee per hectare, (ii) provide an annual environmental update report for the concessions including details of the environmental protection works program to be followed for the following year. These works do not need approval; and (iii) an annual report on the previous year’s exploration and production activity. Mineral Concessions are renewable by the Ecuadorian Ministry of Oil, Mining and Energy in accordance with the Mining Law on such terms and conditions as defined in the Mining Law.The Company is not aware of any social, cultural, or environmental impediments to obtaining a license to operate in the area at the time of this report beyond the scope of regular permitting requirements as required under Ecuadorian Law.	BARBASCO	BARBASCO 4	COLANGA	LUMAPAMBA	BARBASCO 1	LUMAPAMBA 1	BARBASCO 2	GONZA 1	GLORIA	CAROL	GLORIA 1	CATACocha	COLANGA 2	
	BARBASCO	BARBASCO 4														
COLANGA	LUMAPAMBA															
BARBASCO 1	LUMAPAMBA 1															
BARBASCO 2	GONZA 1															
GLORIA	CAROL															
GLORIA 1	CATACocha															
COLANGA 2																
Exploration done by other parties	<ul style="list-style-type: none">Acknowledgment and appraisal of exploration by other parties.	<ul style="list-style-type: none">Copper Duke Project Exploration done by other parties set out in further detail in the Titan ASX release dated 19 May 2020, and summarised below:<ul style="list-style-type: none">Early 1970’s a United Nations Survey was completed on the El Huato and Santa Rita Sectors with a systematic soil survey and additional rock sampling assayed for base metals. An base metal anomaly of approximately 14sq km in the El Huato area was defined.1975 to 1976 the Spanish Geological Mission completed a survey of south Ecuador, and in 1976 a geophysical study resulted with a coincident anomaly at El Huato (however geophysical results have not been located)1978, the Spanish government company Adaro drilled two diamond core holes at the El Huato anomaly each to 220m drill depth.2003 through 2019 Dynasty Mining and Metals (later Core Gold) completed mapping														

ASX ANNOUNCEMENT

18 July 2023



Criteria	JORC Code explanation	Commentary
		<p>limited ground geophysical surveys and exploration sampling activity including 201 drill holes totalling 26,733.5m and 2,033 rock channel samples were taken from 1,161 surface trenches at Cerro Verde, Iguana Este, Trapichillo and Papayal in support of a maiden resource estimation.</p> <ul style="list-style-type: none"> 2000-2001 Iamgold Corporation sampled ridgeline soils in an extensive geochemical program where it obtained 527 soil samples and 103 rock samples. Results ranged from <20ppb Au to peak assay of 1,665ppb Au, and peak base metal results of 1,310 (0.13%) Cu and 19ppm Mo were found in the soil samples and up to 7,134ppb Au; 0.22% Cu and 40ppm Mo in rock samples, obtaining a similar anomaly to the UN program
Geology	<ul style="list-style-type: none"> <i>Deposit type, geological setting, and style of mineralisation.</i> 	<ul style="list-style-type: none"> Regionally, the Copper Duke Project lies within the compressional Inter-Andean Graben that is bounded by regional scale faults. The graben is composed of thick Oligocene to Miocene aged volcano- sedimentary sequences that cover the Chaucha, Amotape and Guamote terrains. This structural zone hosts several significant epithermal, porphyry, mesothermal, S-type granitoid, VHMS and ultramafic/ophiolite precious metal and base metal mineral deposits. The Copper Duke Project lies within the Occidental Andean Cordillera volcanic terrain in Southern Ecuador. The Project area is dominated by andesitic volcanic and sedimentary lithologies of the Cretaceous Celica formation and plutonic granodiorite-diorite of the multi-phase Cretaceous Tangua batholith. At the project scale, gold-silver bearing quartz veins are hosted in the intermediate volcanics located proximal to the Cretaceous Tangua Batholith that extends north from Peru. The Tangua Batholith is a multiphase intrusive body consisting of diorites, tonalites and granodiorites. Sporadic hornblende-plagioclase porphyries intrude both the intermediate volcanics and the Tangua batholith. A quartz-diorite intrusion is emergent near the boundary of the volcanics and the Tangua Batholith. It occupies an area of about four km² and is interpreted as a control for Porphyry intrusion style mineralisation hosting copper, gold, silver and other base metal mineralization which has also been mapped at several areas within the Copper Duke Project. Copper occurs in various forms of Cu oxide minerals at surface and as disseminated style chalcopyrite observed in shallow excavations at several locations within the project area.
Drill hole Information	<ul style="list-style-type: none"> <i>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:</i> <ul style="list-style-type: none"> <i>easting and northing of the drill hole collar</i> <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i> <i>dip and azimuth of the hole</i> <i>down hole length and interception depth</i> <i>hole length.</i> <i>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</i> 	<ul style="list-style-type: none"> Tabulation of requisite information for all reported channel/ trench results with significant intercepts validated by Titan geologists and referenced in this report are included in Appendix A of this report. Total number of trench sites is included in this report and also located in graphics included in the report. Material trenches tabulated contain significant intercepts with gold grades exceeding 0.01g/t gold and/ or copper grades exceeding 0.01% Cu, and are included in Appendix A of this report. No trenches are excluded from maps or graphics in the report and all drill locations with or without material significant intercepts are included in maps and diagrams. Tabulation of requisite information for all reported trench results with significant intercepts announced in this report are included in Appendix A.

ASX ANNOUNCEMENT

18 July 2023



Criteria	JORC Code explanation	Commentary
	<i>report, the Competent Person should clearly explain why this is the case.</i>	
Data aggregation methods	<ul style="list-style-type: none"> <i>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</i> <i>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.</i> <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	<ul style="list-style-type: none"> No high-grade assay cut was applied to reported gold results. Lower reporting cut-off used for reported significant intercepts is 0.05g/t Au or 0.05% Cu with up to 6m of internal dilution (results with <0.01g/t Au or un-sampled intervals where null values are taken as a zero-gold grade in calculating significant intercepts) are allowed within a reported intercept. Significant Intercepts in Appendix A are reported for aggregate intercepts of sample intervals that are weight averaged by length of sample for results above a 0.05g/t gold cut-off. No metal equivalent reporting is applicable to this announcement
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <i>These relationships are particularly important in the reporting of Exploration Results.</i> <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> <i>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').</i> 	<ul style="list-style-type: none"> Reported intersections are measured sample lengths. Reported channel intersections are of unknown true width, further drilling and modelling of results is required to confirm the projected dip(s) of mineralised zones. Reported intercepts should not be interpreted as true thickness unless otherwise indicated
Diagrams	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> Included in body of report as deemed appropriate by the competent person
Balanced reporting	<ul style="list-style-type: none"> <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.</i> 	<ul style="list-style-type: none"> All material exploration results for drilling are included in this report, and location of all results are included in Figures provided in their entirety. All results above a 0.05g/t lower cut-off are included in this report, and no upper cut-off has been applied.
Other substantive exploration data	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> No other available datasets are considered relevant to reported exploration results. Historical exploration results include orientation studies for ground magnetics, IP Geophysics, and soil sampling grids, however each of these surveys are limited in scale relative to the project and are not considered material to assess potential of the larger project area. Bulk density tests have been completed on areas related to the reported exploration results.
Further work	<ul style="list-style-type: none"> <i>The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> Additional drilling is planned to better define controls on mineralisation and assess open ended mineralisation on multiple mineralised corridors within the project area. Further mapping and sampling are to be conducted along strike of reported work to refine and prioritise targets for drill testing. Included in body of report as deemed appropriate by the competent person