

# QUARTERLY ACTIVITIES REPORT

ACTIVITIES FOR THE QUARTER ENDING 30 SEPTEMBER 2015

#### **HIGHLIGHTS**

# New drilling confirms continuity of high-grade mineralisation

- Drilling continues to increase scale and potential of this large copper-gold system with multiple near-surface centres;
- Diamond drill hole KHDDH379 intersects longest intersection within the tourmaline breccia mineralisation:
  - 484m grading 0.57% Cu and 0.32g/t Au (0.78 CuEq) from 186m, including;
  - 158.40 grading 0.80% Cu and 0.24g/t Au (1.25 CuEq) from 342m;
- Broad step-out drilling (KHDDH378) 650m east of current resource around the middle of tourmaline breccia clips the edge of mineralisation;
- Tourmaline breccia has strong potential to host large scale high-grade copper-gold mineralisation.

# Trenching significantly extends surface mineralisation at Tsagaan Sudal

- New trench results extend the strike (up to 300m) of higher-grade surface mineralisation;
- Trench KHTR056 intersects significant copper-gold mineralisation:
  - 122m grading 0.49% Cu and 0.75g/t Au (0.98 CuEq);
- Trench KHTR061 intersects significant surface copper-gold mineralisation:
  - 116m grading 0.72% Cu and 0.35g/t Au (0.95 CuEq);
- Continued exploration success on many fronts around current resources continues to add significant insight and value;
- Access to near surface higher-grade, gold-rich mineralisation will have significant implications for potential future project development.

## **Drill planning currently underway**

- A technical review incorporating new results is currently underway;
- Kharmagtai geological model is being updated allowing prioritisation of targets.

## **Cash position**

Current cash and equivalents of A\$2.5m at 30 September 2015.

**ASX** XAM

ABN 92 114 249 026

**COMPANY DIRECTORS** 

Mark Wheatley

Executive Chairman

Ganbayar Lkhagyasuren

Executive Director

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Xanadu Mines Ltd (ASX: XAM – "Xanadu") is pleased to provide shareholders with an update of exploration results from a strong third quarter.

#### **EXPLORATION ACTIVITES**

Exploration activities during this quarter focused on the flagship Kharmagtai porphyry copper-gold project (Figure 1), where outstanding results are helping refine our geological and further demonstrate Kharmagtai is currently growing towards a sizeable porphyry deposit, with relatively high gold to copper ratios.

### **Kharmagtai Copper-Gold Project**

The Kharmagtai copper-gold project is located within the South Gobi porphyry copper province of Mongolia, approximately 420km south-southwest of Ulaanbaatar (Figure 1), and is one of the most advanced porphyry projects in Asia.

New drilling confirms continuity of high-grade mineralisation

Exploration drilling at the Kharmagtai project continues to test a combination of targets which includes high level gold-rich porphyry mineralisation and deeper tourmaline breccia mineralisation within the highly prospective 25 km² area of interest which has yielded outstanding results to date.

Five diamond holes have been completed for approximately 2,351m in the last quarter of exploration; bringing the total metres completed in 2015 to 7540m at Kharmagtai. Drill hole details are set out in Table 1 and significant assay results in Table 2.

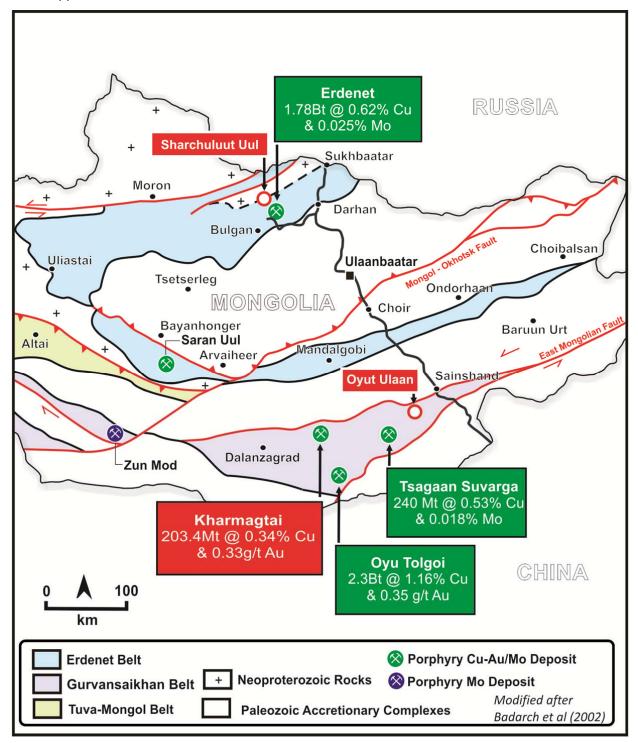
Exploration drilling continues to provide significant advances in our understanding of the Kharmagtai project and clearly indicates potential for a large-scale mineralised breccia system along-side the established Mineral Resource is transforming the Company's view of the growth potential of Kharmagtai.

Drilling continues to targeted extensions of strongly mineralised tourmaline breccia below and east of the Altan Tolgoi resource. All drill holes intersected significant intervals of altered and mineralised tourmaline breccia hosted copper-gold mineralisation of varying widths, confirming the presence and continuity of mineralisation over large strike distances. Importantly, the wide zones of higher grade copper (>1% CuEq) remain open toward the east and at depth.

The best examples of this breccia mineralisation are from recent holes which represent the highest grade copper mineralisation discovered to date within the Kharmagtai project (Figure 3). Drill hole KHDDH379 designed to test the northern (down-dip) extension to high-grade mineralisation (see KHDDH371 and KHDDH374) and continuity of breccia mineralisation, intersected 670m of continuous tourmaline breccia from surface, which contained 484m of mineralisation grading 0.57% Cu and 0.32g/t Au (0.78 CuEq) from 186m (Figure 3). This broad interval included 158.40m of high-grade chalcopyrite cemented breccia grading 0.80% Cu and 0.24g/t Au (1.25 CuEq) from 342m (Figures 4 to 8). The results indicate discrete zones of higher-grade mineralisation continue to more than 50m below the current Resource, and mineralisation remains open at depth and in several directions (Figure 3).



**FIGURE 1:** Location of the Kharmagtai and Oyut Ulaan copper-gold projects within Mongolia's South Gobi Copper Belt.





**FIGURE 2:** Kharmagtai porphyry copper-gold district showing location of Altan Tolgoi, Tsagaan Sudal and Zesen Uul deposits, as well as other porphyry targets. The figure also shows location of recently completed diamond drill holes.

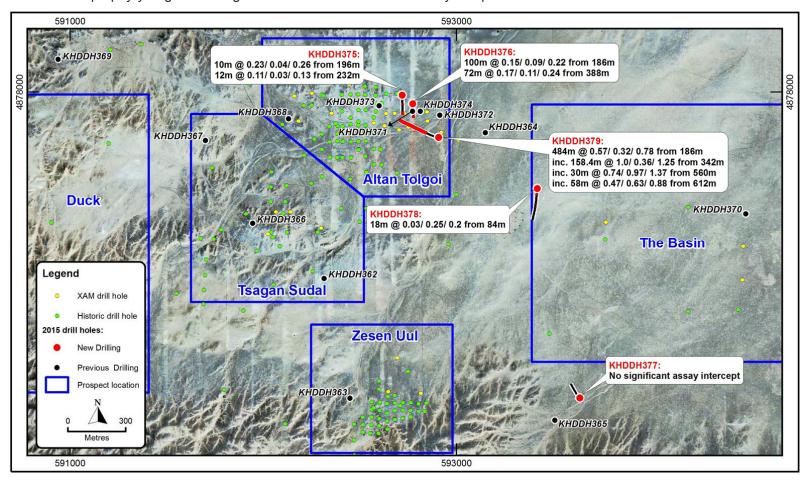
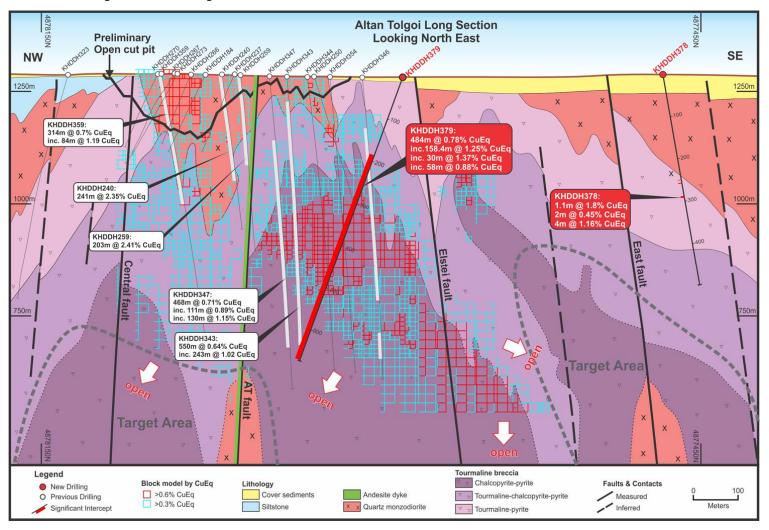




FIGURE 3: Long section showing location of diamond drill holes KHDDH378 and KHDDH379.





Diamond drill hole KHDD378 was a 650m step-out along strike from the significant mineralisation encountered recently in diamond drilling and current resources (Figure 3). It was designed to test a geophysical anomaly mid-way along the inferred strike of the mineralised tourmaline breccia complex. The upper part of the hole intersected propylitic (epidote-chlorite-magnetite) altered quartz monzodiorite with anomalous in gold and zinc geochemistry, which transitioned into intensely phyllic altered tourmaline breccia associated with narrow zones of copper-gold mineralisation. This hole clipped the outer edge of the tourmaline breccia complex.

The discovery of the high-grade tourmaline breccia mineralisation superimposed on an earlier major porphyry copper-gold system has transformed what is a potential mid-scale project into one of the most prospective copper-gold projects in Asia.

It is becoming apparent that the metal content of the tourmaline breccia mineralisation is much higher than those of surrounding porphyry stockwork deposits (reflecting their high intrinsic permeability) elevating it as a priority drill target in the district. Continued exploration success here is evidence of our increasing understanding

**FIGURE 4:** Chalcopyrite-pyrite-tourmaline cemented breccia with potassic altered porphyry clasts. KHDDH379 – 448m. From a 1.6m interval (447.4 to 449m) which assayed 1.01% Cu and 0.9g/t Au (1.58% CuEq).



**FIGURE 5:** Chalcopyrite-pyrite cemented breccia with biotite altered porphyry clasts. KHDDH379 – 369.1m. From a 2.2m interval (369 to 371.2m) which assayed 1.72% Cu and 0.15g/t Au (1.82% CuEq).





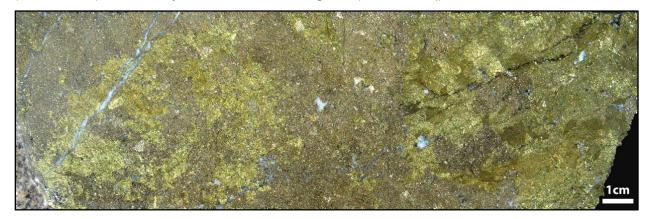
**FIGURE 6:** Chalcopyrite-pyrite-tourmaline cemented breccia with a clast of altered monzodiorite porphyry. KHDDH379 – 399.5m. From a 2m interval (391 to 393m) which assayed 2.82% Cu and 0.17g/t Au (2.93% CuEq).



**FIGURE 7:** Massive chalcopyrite-pyrite mineralisation. KHDDH379 – 405.7m. From a 2m interval (404 to 406m) which assayed 4.39% Cu and 0.91g/t Au (4.97% CuEq).



**FIGURE 8:** Massive chalcopyrite-pyrite mineralisation. KHDDH379 – 124.3m. From a 2m interval (124 to 126m) which assayed 2.44% Cu and 1.68g/t Au (3.51% CuEq).





Tourmaline breccia deposits are a major host of copper mineralisation, and comprise some of the world's largest single most endowed porphyry copper deposit, as exemplified by >5 Gt of ore-grade breccia at Los Bronces-Rho Blanco in Chile. The size of the hydrothermal footprint at Kharmagtai is an excellent indicator of the district potential, with porphyry intrusions and tourmaline-cemented breccia's extending over an 8 by 2 kilometre area. The tendency for porphyry copper deposits to constitute clusters or alignments is clearly exemplified by the mineralised centres at Kharmagtai.

Trenching significantly extends surface mineralisation at Tsagaan Sudal

Eleven trenches have been excavated for approximately 2,952m (Figure 9) in the current phase of exploration at Kharmagtai. Trenching within the margins of the current Resource Pit Shell have intersected significant surface mineralisation consistent with or better than the resource estimate providing further confidence to the geological interpretation, mineralisation controls, and resource model.

Assay results from all trenches are reported in Table 3 and significant results are reported in Table 4.

Six trenches (Figure 9) designed to test extensions to previously reported resources at Tsagaan Sudal (115mt grading 0.29% Cu and 0.23g/t Au; see XAM's ASX announcement - 19 March 2015) intersected broad zones of stockwork copper-gold mineralisation with significant intervals at well above the average grade of the current resource, with shallow stockwork remains open to the southwest, northwest and southeast. The best examples of this shallow stockwork mineralisation at Tsagaan Sudal include the following:

Trench KHTR056 intersects significant surface copper-gold mineralisation:

- 320m grading 0.34% Cu and 0.36g/t Au (0.57 CuEq) including;
- 122m grading 0.49% Cu and 0.75g/t Au (0.98 CuEq).

Trench KHTR061 intersects significant surface copper-gold mineralisation:

- 304m grading 0.40% Cu and 0.23g/t Au (0.55 CuEq) including;
- 116m grading 0.72% Cu and 0.35g/t Au (0.95 CuEq).

Trench KHTR062 intersects significant surface copper-gold mineralisation:

- 280m grading 0.36% Cu and 0.10g/t Au (0.43 CuEq) including;
- 90m grading 0.57% Cu and 0.14g/t Au (0.67CuEq).

Based on field observations the stockwork mineralisation (Figures 11 and 12) in all trenches contain visible chalcopyrite and only minor copper and iron oxides, as has been observed in previous trenching and drilling at Kharmagtai, where there is no obvious depletion or enrichment of gold and copper in the oxide zone.

**Figure 9:** Kharmagtai porphyry copper-gold district showing location of Altan Tolgoi, Tsagaan Sudal and Zesen Uul deposits, as well as other porphyry targets. The figure also shows location of recently completed trenches.

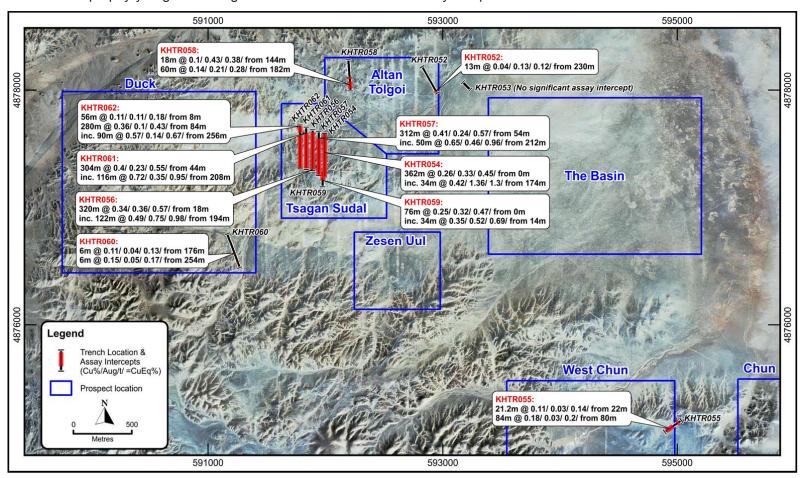
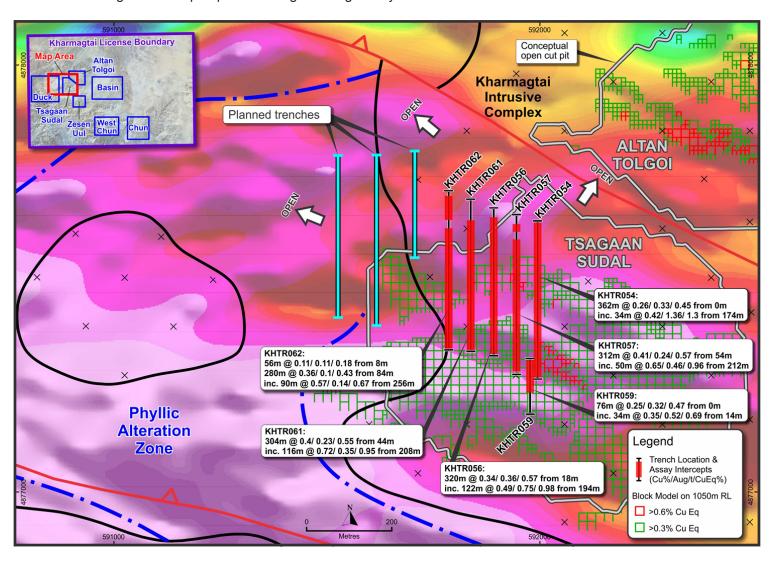


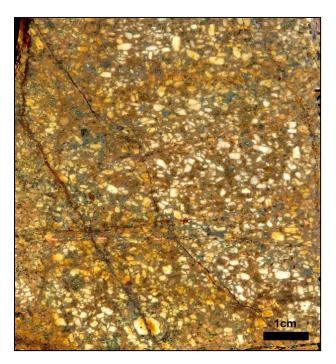
FIGURE 10: Tsagaan Sudal prospect showing IP chargeability data with current trenches and results. Resource blocks in the background.



**FIGURE 11:** Hornfelsed siltstone cross-cut by quartz-chalcopyrite veins with minor disseminated magnetite. KHTR056: From a 2m interval (298 to 300m) which assayed 0.27% Cu and 1.53g/t Au.



**FIGURE 12:** Chlorite-magnetite altered crystal-crowed monzodiorite porphyry, with strongly developed quartz-chalcopyrite stockwork. KHTR057: From a 2m interval (234 to 236m) which assayed 1.26% Cu and 0.60g/t Au.





Recognition of discrete zones of higher grade mineralisation encouraged first pass assessment of the potential through surface trenching at the Tsagaan Sudal deposit. Higher grade mineralisation (> 0.5% Cu and 1.00g/t Au) appears to be hosted within a northwest trending structure. High density stockwork veining and hydrothermal breccia mineralisation (Figure 10) are spatially related to the margins of inter-mineral quartz monzodiorite dykes. The geometry of the higher-grade zones remain unconstrained and open in most directions and definition drilling around the currently known mineralisation is required to confirm the geological controls and continuity of these higher grade zones at depth.

The shoulders of larger intrusions identified at Tsagaan Sudal provide favourable dilatant sites for the emplacement of stockwork mineralisation and exploration at Kharmagtai will continue to assess where structures intersect the margin of the Kharmagtai Intrusive Complex, to test for the presence of additional high grade stockwork zones (such as Altan Tolgoi and Zesen Uul). A series of trenches have been planned to continue testing mineralised extensions to the northwest where the Tsagaan Sudal deposit is interpreted to plunge under the host volcanic rocks. It may be that the volcanic rocks (Figures 10) have helped to confine the mineralising fluids to the immediate proximity of the intrusion in a 'pressure cooker' type effect, due to their low permeability. If this hypothesis is correct, then the grade of mineralisation is predicted to increase towards the northwest.

# Target generation

In light of recent drilling and trenching a critical technical evaluation and ranking of all known prospects within the confines of the Kharmagtai Intrusive Complex is currently being conducted and will include assistance by industry leading consultants, thereby allowing the Xanadu exploration team to focus at an early stage on those of highest potential. This holistic approach will be essential to ensure future exploration efforts prioritised the number of high priority targets.

#### **CORPORATE ACTIVITIES**

#### **Share Capital**

As at 30 September 2015, the Company had 374,678,226 fully paid shares, 5,500,000 performance rights and 38,000,000 unlisted options on issue, of which 35,000,000 options issued pursuant to the restructure of the Oyut Ulaan Acquisition terms.

# **Financial position**

As at 30 September 2015, the Company's cash position was A\$2.5m.

For further information please visit <a href="https://www.xanadumines.com">www.xanadumines.com</a> or contact:

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#### KHARMAGTAI PROJECT & THE MONGOL METALS JV

Xanadu and its joint venture partner, Mongol Metals LLC, announced the acquisition of a 90% interest in the Kharmagtai porphyry copper-gold project from Turquoise Hill Resources in February 2014. Under the Mongol Metals LLC joint venture terms, Xanadu has the right to earn an 85% interest in Mongol Metals LLC, equivalent to a 76.5% effective project interest, by funding acquisition and exploration costs.

The Kharmagtai project is located in the under-explored South Gobi porphyry copper province which hosts the world-class Oyu Tolgoi copper-gold operation, the Tsagaan Suvarga porphyry copper-molybdenum development and Xanadu's Oyut Ulaan copper-gold exploration project. The Kharmagtai project is located within the Omnogovi Province, approximately 420km south southwest of Ulaanbaatar and 60km north of the Tavan Tolgoi coal deposit.

The Kharmagtai project is an advanced exploration project consisting of multiple co-genetic gold-rich porphyry copper centres and tourmaline breccia pipes occurring within the Lower Carboniferous Kharmagtai Igneous Complex. Exploration has identified significant shallow high-grade porphyry copper-gold mineralisation. A majority of the mineralised porphyry complex lies under un-explored shallow sediments. The large licence area has only been partially explored and the potential for further discoveries remains high.

#### **COMPETENT PERSON STATEMENTS**

# **Exploration Results**

The information in this report that relates to Exploration Results is based on information compiled by Dr Andrew Stewart who is responsible for the exploration data, comments on exploration target sizes, QA/QC and geological interpretation and information, which is incorporated in the database that was provided to Mining Associates for undertaking the a resource estimate. Dr Stewart, who is an employee of Xanadu and is a Member of the Australasian Institute of Geoscientists. Dr. Stewart has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as the "Competent Person" as defined in the 2012 Edition of the "Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves". Dr. Stewart consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## **Kharmagtai Mineral Resource Estimate**

The information in this report that relates to Kharmagtai Mineral Resource Estimate is extracted from announcements dated 19 March 2015 and is available ASX http://www.xanadumines.com. The information that relates to Mineral Resources is based on information compiled by Mr Andrew J. Vigar, who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Vigar is employed by Mining Associates Limited in Hong Kong. Mr Vigar has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'. Mr Vigar consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.



## **QUALIFYING STATEMENT**

The Kharmagtai project – JORC compliant Resource Estimate Statement (Reported 19 March 2015)

# MINERAL RESOURCE ESTIMATE @ 0.3% CuEq CUT-OFF

Mineral Resource Estimate tabulation for Kharmagtai Deposit - March 2015. Reported at a 0.3% CuEq cut-off constrained within optimised pit shells and CuEq cut-off 0.5% CuEq applied to the underground resources.

Donosit	Mining	Cut-Off	Resource	Material		Grade		Me	etal
Deposit	Method	CuEq(%)	Category	(Mt)	Cu(%)	Au(g/t)	CuEq(%)	Cu(MIb)	Au(Koz)
			Indicated	14.5	0.37	0.56	0.73	119	262
	OC	0.3	Inferred	7.5	0.30	0.44	0.58	49	106
			Subtotal	22.0	0.35	0.52	0.68	168	368
			Indicated	23.2	0.43	0.47	0.73	219	350
AT	UG	0.5	Inferred	32.8	0.43	0.43	0.70	311	453
			Subtotal	55.9	0.43	0.45	0.71	530	803
			Indicated	37.7	0.41	0.50	0.73	338	612
	Com	bined	Inferred	40.2	0.41	0.43	0.68	360	559
			Total	78.0	0.41	0.47	0.70	698	1,171
			Indicated	-	-	-	-	-	-
	OC	0.3	Inferred	97.7	0.27	0.23	0.41	581	722
			Subtotal	97.7	0.27	0.23	0.41	581	722
	TS UG		Indicated	-	-	-	-	-	-
TS		0.5	Inferred	17.7	0.39	0.24	0.54	152	136
			Subtotal	17.7	0.39	0.24	0.54	152	136
		Indicated	-	-	-	•	-	•	
	Com	bined	Inferred	115.4	0.29	0.23	0.43	733	859
			Total	115.4	0.29	0.23	0.43	733	859
			Indicated	8.0	0.5	0.5	0.8	84.6	138.8
	OC	0.3	Inferred	1.4	0.3	0.1	0.4	10.5	5.4
			Subtotal	9.4	0.46	0.48	0.76	95	144
			Indicated	0.6	0.4	0.4	0.7	5.7	8.8
ZU	UG	0.5	Inferred	0.1	0.3	0.5	0.6	0.5	1.3
			Subtotal	0.7	0.40	0.44	0.67	6	10
			Indicated	8.6	0.47	0.53	0.81	90	148
	Com	bined	Inferred	1.5	0.34	0.14	0.42	11	7
			Total	10.1	0.45	0.47	0.75	101	154
			Indicated	23	0.41	0.55	0.76	203	401
	OC	0.3	Inferred	107	0.27	0.24	0.42	641	833
			Subtotal	129	0.30	0.30	0.48	844	1,234
			Indicated	24	0.43	0.47	0.73	225	359
All	UG	0.5	Inferred	51	0.42	0.36	0.64	463	591
			Subtotal	74	0.42	0.40	0.67	688	950
			Indicated	46	0.42	0.51	0.74	428	759
	Com	bined	Inferred	157	0.32	0.28	0.49	1,104	1,424
			Total	203	0.34	0.33	0.55	1,533	2,184



# MINERAL RESOURCE ESTIMATE @ 0.6% CuEq CUT-OFF

Mineral Resource Estimate tabulation for Kharmagtai Deposit - March 2015. Reported at a 0.6% CuEq cut-off.

Donosit	Mining	Cut-Off	Resource	Material		Grade		Me	etal
Deposit	Method	CuEq(%)	Category	(Mt)	Cu(%)	Au(g/t)	CuEq(%)	Cu(Mlb)	Au(Koz)
			Indicated	4.7	0.47	0.92	1.06	49	140
	OC	0.6	Inferred	1.2	0.38	0.88	0.95	10	33
			Subtotal	5.9	0.45	0.91	1.04	59	173
			Indicated	19.0	0.46	0.57	0.83	193	349
AT	UG	0.6	Inferred	22.1	0.46	0.52	0.79	224	369
			Subtotal	41.1	0.46	0.54	0.81	417	718
			Indicated	23.8	0.46	0.64	0.88	242	489
	Com	bined	Inferred	23.3	0.46	0.54	0.80	234	402
			Total	47.0	0.46	0.59	0.84	476	891
			Indicated	-	-	-	-	-	-
	OC	0.6	Inferred	0.1	0.41	0.32	0.61	1	1
		Subtotal	0.1	0.41	0.32	0.61	1	1	
		UG 0.6	Indicated	•	-	-	-	•	1
TS	UG		Inferred	3.6	0.48	0.41	0.74	38	48
			Subtotal	3.6	0.48	0.41	0.74	38	48
	Combined		Indicated	-	-	-	-	-	-
			Inferred	3.7	0.48	0.41	0.74	39	48
			Total	3.7	0.48	0.41	0.74	39	48
			Indicated	4.1	0.6	0.8	1.1	52.8	107.6
	OC	0.6	Inferred	0.1	0.4	0.4	0.6	0.7	0.9
			Subtotal	4.2	0.58	0.80	1.09	54	109
			Indicated	0.9	0.5	0.7	0.9	9.8	19.3
ZU	UG	0.6	Inferred	0.0	0.3	0.6	0.7	0.3	0.7
			Subtotal	1.0	0.47	0.65	0.88	10	20
			Indicated	5.1	0.56	0.78	1.06	63	127
	Com	bined	Inferred	0.1	0.39	0.44	0.67	1	2
			Total	5.2	0.56	0.77	1.05	64	129
			Indicated	9	0.52	0.87	1.08	102	248
	OC	0.6	Inferred	1	0.38	0.82	0.92	11	34
			Subtotal	10	0.50	0.86	1.06	113	282
			Indicated	20	0.46	0.57	0.83	203	368
All	UG 0.	0.6	Inferred	26	0.46	0.50	0.78	263	418
			Subtotal	46	0.46	0.53	0.80	465	786
			Indicated	29	0.48	0.66	0.91	305	616
	Com	bined	Inferred	27	0.46	0.52	0.79	274	452
			Total	56	0.47	0.59	0.85	578	1,068



**TABLE 1:** Kharmagtai drill hole details.

Hole Name	Prospect	East	North	RL	Azi ( )	Dip	Depth (m)
KHDDH375	AT	592720	4877985	1273	180	-78	511
KHDDH376	AT	592775	4877940	1273	180	-80	460
KHDDH377	ZU	593640	4876415	1280	335	-58	175
KHDDH378	Basin	593420	4877500	1280	180	-70	499
KHDDH379	East AT	592909	4877765	1282	298	-70	670

**TABLE 2:** Kharmagtai significant drill results from third quarter.

Hole ID	Prospect	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)	CuEq (%) **
KHDDH375*	AT	0	4	4	0.04	0.13	0.13
and		28	38	10	0.02	0.11	0.11
and		48	52	4	0.23	0.22	0.38
and		132	136	4	0.16	0.03	0.18
and		196	206	10	0.23	0.04	0.26
and		232	244	12	0.11	0.03	0.13
and		250	254	4	0.39	0.02	0.4
and		416	422	6	0.11	0.09	0.18
and		428	434	6	0.11	0.3	0.31
and		442	458	16	0.1	0.16	0.2
and		466	510	44	0.18	0.25	0.35
KHDDH376*	AT	30.2	35.4	5.2	0.41	2.44	1.97
and		94	98	4	0.11	0.07	0.16
and		112	116	4	0.19	0.04	0.22
and		134	146	12	0.14	0.22	0.29
and		154	160	6	0.15	0.11	0.23
and		186	286	100	0.15	0.09	0.22
and		308	360	52	0.18	0.08	0.23
and		368	374	6	0.54	0.39	0.8
and		388	460	72	0.17	0.11	0.24
Including		452	460	8	0.31	0.33	0.52
KHDDH377*	Zesen Uul			No significa	ant assays		
KHDDH378*	Basin	44	54	10	0.01	0.11	0.09
and		60	64	4	0.02	0.21	0.16
and		84	102	18	0.03	0.25	0.2
and		230	234	4	0.04	0.12	0.13
and		248.9	250	1.1	0.64	1.8	1.8
and		256	258	2	0.05	0.61	0.45
and		287.4	291.4	4	0.29	1.36	1.16



Hole ID	Prospect	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)	CuEq (%) **
and		332	338	6	0.03	0.23	0.19
KHDDH379*	AT	186	670	484	0.57	0.32	0.78
Including		342	500.4	158.4	1	0.36	1.25
Including		508	522	14	8.0	0.24	0.96
Including		560	590	30	0.74	0.97	1.37
Including		612	670	58	0.47	0.63	0.88

**TABLE 3:** Kharmagtai trench details

Trench ID	Prospect	Start East	Start North	RL	Azi ( )	Depth (m)
KHTR052	EAT	592825	4878198	1250	150	250
KHTR053	EAT	593175	4878066	1250	135	80
KHTR054	TS	591993	4877630	1288	180	362
KHTR055	BP	595031	4875186	1291	235	166
KHTR056	TS	591890.4	4877661	1288	180	338
KHTR057	TS	591944	4877645	1288	180	366
KHTR058	AT	592195	4878257	1290	176	256
KHTR059	TS	591976	4877308	1289	180	122
KHTR060	Duck	591122	4876873	1302	160	300
KHTR061	TS	591837	4877681	1296.77	180	348
KHTR062	TS	591784.7	4877701	1299.1	180	364

**TABLE 4:** Kharmagtai significant trench results from third quarter.

Trench ID	Prospect	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)	CuEq (%) **
KHTR052*	AT	10.1	12.2	2.1	0.09	0.4	0.35
and		222	224	2	0.02	0.12	0.10
and		230	243	13	0.04	0.13	0.12
KHTR053	AT	No significant	assays				
KHTR054*	TS	0	362	362	0.26	0.33	0.45
including		174	208	34	0.42	1.36	1.30
KHTR055*	Breccia Pipe	2	6	4	0.15	0.04	0.18
and		22	43.2	21.2	0.11	0.03	0.14
and		80	164	84	0.18	0.03	0.20
including		134	136	2	1.62	0.05	1.65
KHTR056*	TS	18	338	320	0.34	0.36	0.57

<sup>\*</sup> Intervals calculated using a 0.1 percent copper cut-off grade with unlimited internal dilution \*\*Intervals calculated using a 0.6 percent copper equivalent grade up to/including 4m internal dilution



Trench ID	Prospect	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)	CuEq (%) **
including		180	190	10	0.72	0.1	0.79
including		194	316	122	0.49	0.75	0.98
KHTR057*	TS	8	12	4	0.18	0.09	0.25
and		18	36	18	0.17	0.2	0.30
and		54	366	312	0.41	0.24	0.57
including		106	124	18	0.44	0.39	0.70
including		186	198	12	1.29	0.15	1.40
including		212	262	50	0.65	0.46	0.96
including		288	312	24	0.64	0.42	0.91
including		364	366	2	1.48	0.87	2.03
KHTR058*	AT	3.8	10	6.2	0.04	0.2	0.18
and		16	18	2	0.07	0.42	0.35
and		130	138	8	0.05	0.28	0.23
and		144	162	18	0.1	0.43	0.38
and		182	142	60	0.14	0.21	0.28
and		250	256	6	0.13	0.12	0.22
KHTR059*	TS	0	76	76	0.25	0.32	0.47
including		14	48	34	0.35	0.52	0.69
and		84	122	38	0.19	0.08	0.25
KHTR060*	Duck	84	86	2	0.04	0.23	0.19
and		176	182	6	0.11	0.04	0.13
and		232	236	4	0.05	0.15	0.15
and		254	260	6	0.15	0.05	0.17
KHTR061*	TS	44	348	304	0.4	0.23	0.55
including		208	324	116	0.72	0.35	0.95
KHTR062*	TS	8	64	56	0.11	0.11	0.18
and		84	264	280	0.36	0.1	0.43
including		256	346	90	0.57	0.14	0.67
including		260	266	6	1.14	0.11	1.21

<sup>\*</sup> Intervals calculated using a 0.1 percent copper cut-off grade with unlimited internal dilution \*\*Intervals calculated using a 0.6 percent copper equivalent grade up to/including 4m internal dilution



# **TABLE 5:** Tenements held as at 30 September 2015

Set out below is the relevant information in relation to Xanadu's mining tenements as required under ASX Listing Rule 5.3.3.

Tenement No.	Tenement Name	Location	Change in % Interest	% Interest as at 30 September
MV17387A1	Kharmagtai	Umnugovi Province	-	64%
MV017129	Oyut Ulaan	Dornogovi Province	-	90%
13670x	Sharchuluut	Bulgan Province	_	100%

<sup>1.</sup> The Kharmagtai project has been funded through Xanadu's interest in Mongol Metals LLC by a combination of equity and shareholder advances converted to equity periodically. Xanadu's interest in Mongol Metals LLC is equivalent to approximately 71.3% as at 30 September 2015 (an effective 64.2% interest in the Kharmagtai project).



# **APPENDIX 1: KHARMAGTAI TABLE 1 (JORC 2012)**

Set out below is Section 1 and Section 2 of Table 1 under the JORC Code, 2012 Edition for the Kharmagtai project. Data provided by Turquoise Hill and Xanadu. This Table 1 updates the JORC Table 1 disclosure dated 22 October 2015.

# 1.1 JORC TABLE 1 - SECTION 1 - SAMPLING TECHNIQUES AND DATA

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

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling and assaying.</li> <li>Measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are material to the Public Report.</li> </ul>	<ul> <li>The resource estimate is based on drill samples only.</li> <li>Representative 2 metre samples were taken from ½ NQ or HQ diamond core.</li> <li>Only assay result results from recognised, independent assay laboratories were used in Resource calculation after QAQC was verified.</li> </ul>
Drilling techniques	Drill type and details.	<ul> <li>DDH drilling has been the primary drilling method.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>DDH core recoveries have been very good, averaging between 97% and 99% for all of the deposits. In localised areas of faulting and/or fracturing the recoveries decrease; however this is a very small percentage of the overall mineralised zones.</li> <li>Recovery measurements were collected during all DDH programs. The methodology used for measuring recovery is standard industry practice.</li> <li>Analysis of recovery results vs. grade indicates no significant trends. Indicating bias of grades due to diminished recovery and / or wetness of samples.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Drill samples are logged for lithology, mineralisation and alteration and geotechnical aspects using a standardised logging system, including the recording of visually estimated volume percentages of major minerals.</li> <li>Drill core was photographed after being logged by a geologist.</li> <li>The entire interval drilled has been logged by a geologist.</li> </ul>



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Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>DDH Core is cut in half with a diamond saw, following the line marked by the geologist. The rock saw is regularly flushed with fresh water.</li> <li>Sample intervals are a constant 2m interval down-hole in length.</li> <li>Routine sample preparation and analyses of DDH samples were carried out by SGS Mongolia LLC (SGS Mongolia), who operates an independent sample preparation and analytical laboratory in Ulaanbaatar.</li> <li>All samples were prepared to meet standard quality control procedures as follows: Crushed to 90% passing 3.54 mm, split to 1kg, pulverised to 90% - 95% passing 200 mesh (75 microns) and split to 150g.</li> <li>Certified reference materials (CRMs), blanks and pulp duplicate were randomly inserted to manage the quality of data.</li> <li>Sample sizes are well in excess of standard industry requirements.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>All samples were routinely assayed by SGS Mongolia for gold, copper, silver, lead, zinc, arsenic and molybdenum.</li> <li>Au is determined using a 30g fire assay fusion, cupelled to obtain a bead, and digested with Aqua Regia, followed by an atomic absorption spectroscopy (AAS) finish, with a lower detection (LDL) of 0.01 ppm.</li> <li>Cu, Ag, Pb, Zn, As and Mo were routinely determined using a three-acid-digestion of a 0.3g sub-sample followed by an AAS finish (AAS21R). Samples are digested with nitric, hydrochloric and perchloric acids to dryness before leaching with hydrochloric acid to dissolve soluble salts and made to 15mL volume with distilled water. The LDL for copper using this technique was 2ppm. Where copper is over-range (&gt;1% Cu), it is analysed by a second analytical technique (AAS22S), which has a higher upper detection limit (UDL) of 5% copper.</li> <li>Quality assurance was provided by introduction of known certified standards, blanks and duplicate samples on a routine basis.</li> <li>Assay results outside the optimal range for methods were re-analysed by</li> </ul>



Criteria	JORC Code Explanation	Commentary
		<ul> <li>appropriate methods.</li> <li>Ore Research Pty Ltd certified copper and gold standards have been implemented as a part of QAQC procedures, as well as coarse and pulp blanks, and certified matrix matched copper-gold standards.</li> <li>QAQC monitoring is an active and ongoing processes on batch by batch basis by which unacceptable results are re-assayed as soon as practicable.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>All assay data QAQC is checked prior to loading into the Geobank data base.</li> <li>The data is managed XAM geologists.</li> <li>The data base and geological interpretation is collectively managed by XAM.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>All DDH's have been surveyed with a differential global positioning system (DGPS) to within 10cm accuracy.</li> <li>All DDH's have been down hole surveyed to collect the azimuth and inclination at specific depths. Two principal types of survey method have been used over the duration of the drilling programs including Eastman Kodak and Flexit.</li> <li>UTM WGS84 48N grid.</li> <li>The DTM is based on 1 metre contours with an accuracy of ±0.01 metre.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Vertical spacing of intercepts on the mineralised zones similarly commences</li> </ul>



Criteria	JORC Code Explanation	Commentary		
		Mineral Resource estimation procedure and has been taken into account in 3D space when determining the classifications to be applied.		
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>Drilling has been predominantly completed on north-south section lines along the strike of the known mineralised zones and from either the north or the south depending on the dip.</li> <li>Vertical to South dipping ore bodies were predominantly drilled to the north.</li> <li>Scissor drilling, (drilling from both north and south), as well as vertical drilling, has been used in key mineralised zones to achieve unbiased sampling of possible structures and mineralised zones.</li> </ul>		
Sample security	The measures taken to ensure sample security.	<ul> <li>Samples are dispatched from site through via company employees and secure company vehicles to the laboratories.</li> <li>Samples are signed for at the laboratory with confirmation of receipt emailed through.</li> <li>Samples are then stored at the lab and returned to a locked storage site.</li> </ul>		
Audits or reviews	The results of any audits or reviews of sampling techniques and data	<ul> <li>Internal audits of sampling techniques and data management on a regular basis, to ensure industry best practice is employed at all times.</li> <li>External review and audit have been conducted by the following groups</li> <li>2012 – AMC Consultants Pty Ltd. was engaged to conduct an Independent Technical Report which reviewed drilling and sampling procedures. It was concluded that sampling and data record was appropriate for use in resource estimation including that required by the NI 43-101 standards.</li> <li>2013 - Mining Associates Ltd. was engaged to conduct an Independent Technical Report to review drilling, sampling techniques, QAQC and previous resource estimates. Methods were found to conform to international best practice.</li> </ul>		



# 1.2 JORC TABLE 1 SECTION 2 - REPORTING OF EXPLORATION RESULTS

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

Criteria	JORC Code Explanation	Commentary		
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> </ul>	<ul> <li>The Project comprises 1 Mining Licence (MV 17387A).</li> <li>100% owned by Oyut Ulaan LLC.</li> <li>Xanadu and its joint venture partner, Mongol Metals can earn a 90% interest in the Kharmagtai porphyry copper-gold project. The remaining 10% is owned by Quincunx Ltd, which in turn is owned by an incorporated joint venture between Kerry Holdings Ltd. and MCS Holding LLC.</li> <li>The Mongolian Minerals Law (2006 and Mongolian Land Law (2002) govern exploration, mining and land use rights fo the project.</li> </ul>		
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Previous exploration was conducted by Quincunx Ltd, Ivanhoe Mines Ltd and Turquoise Hill Resources Ltd including extensive drilling, surface geochemistry, geophysics, mapping and mineral resource estimation to NI 43-101 standards.		
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The mineralisation is characterised as porphyry copper-gold type.</li> <li>Porphyry copper-gold deposits are formed from magmatic hydrothermal fluids typically associated with felsic intrusive stocks that have deposited metals as sulphides both within the intrusive and the intruded host rocks. Quartz stockwork veining is typically associated with sulphides occurring both within the quartz veinlets and disseminated thought out the wall rock. Porphyry deposits are typically large tonnage deposits ranging from low to high grade and are generally mined by large scale open pit or underground bulk mining methods. The deposits at Kharmagtai are atypical in that they are associated with intermediate intrusions of diorite to quartz diorite composition, however the deposits are in terms of contained gold significant, and similar gold-rich porphyry deposits.</li> </ul>		
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	<ul> <li>Diamond drill holes are the principal source of geological and grade data for the Project.</li> <li>See Table 1 in main report.</li> </ul>		



Criteria	JORC Code Explanation	Commentary		
Data aggregation methods	holes:  - easting and northing of the drill hole collar.  - elevation or Reduced Level (RL) elevation above sea level in metres) of the drill hole collar.  - dip and azimuth of the hole  - down hole length and interception depth  - hole length.  • 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.  • In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually material and should be stated.  • 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.  • The assumptions used for any reporting of metal equivalent values should be clearly stated.	<ul> <li>A nominal cut-off of 0.1% Cu is used for identification of potentially significant intercepts for reporting purposes.</li> <li>Most of the reported intercepts are shown in sufficient detail, including maxima and subintervals, to allow the reader to make an assessment of the balance of high and low grades in the intercept.</li> <li>Informing Samples have been composited to two metre lengths honoring the geological domains and adjusted where necessary to ensure that no residual sample lengths have been excluded (best fit).</li> <li>Metal equivalents used the following formula:</li> <li>CuEq = Cu% x (Aug/t x 0.6378</li> <li>Formula is based on a \$2.60/lb copper price and a \$1,300/oz gold price. A gold recovery factor of 78.72% was used.</li> </ul>		
Relationship between mineralisation on widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul> <li>Mineralised structures are variable in orientation, and therefore drill orientations have been adjusted from place to place in order to allow intersection angles as close as possible to true widths.</li> <li>Exploration results have been reported as an interval with 'from' and 'to' stated in tables of significant economic intercepts. Tables clearly indicate that true widths will generally be narrower than those reported.</li> <li>Resource estimation, as reported later, was done in 3D space.</li> </ul>		
Diagrams	Appropriate maps and sections (with	See figures in main report.		



Criteria	JORC Code Explanation	Commentary
	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.	
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.	Resources have been reported at a range of cut-off grades, above a minimum suitable for open pit mining, and above a minimum suitable for underground mining.
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.	Extensive work in this area has been done, and is reported separately.
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>The mineralisation is open at depth and along strike.</li> <li>Current estimates are restricted to those expected to be reasonable for open pit mining. Limited drilling below this depth (-300m RL) shows widths and grades potentially suitable for underground extraction.</li> <li>Exploration on going.</li> </ul>

# 1.3 JORC TABLE 1 - SECTION 3 - ESTIMATION & REPORTING OF MINERAL RESOURCES

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

Criteria	JORC Code Explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example,	The database is a Geobank data base system.
	transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	<ul> <li>Data is logged directly into an Excel spread sheet logging system with drop down field lists.</li> </ul>
	Data validation procedures used.	<ul> <li>Validation checks are written into the importing program ensures all data is of high quality.</li> </ul>
		<ul> <li>Digital assay data is obtained from the Laboratory, QAQC checked and imported.</li> </ul>
		Geobank exported to Access, and



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Criteria	JORC Code Explanation	Commentary
		connected directly to the Gemcom Surpac Software.  • Data was validated prior to resource estimation by the reporting of basic statistics for each of the grade fields, including examination of maximum values, and visual checks of drill traces and grades on sections and plans.
Geological interpretation	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> <li>Confidence in (or conversely, the uncertainty of the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>Andrew Vigar of Mining Associates visited site from 24 and 25 October 2014.</li> <li>The site visit included a field review of the exploration area, an inspection of core, sample cutting and logging procedures and discussions of geology and mineralisation with exploration geologists.</li> <li>Mineralisation resulted in the formation of comprises quartz-chalcopyrite-pyrite-magnetite stockwork veins and minor breccias.</li> <li>The principle ore minerals of economic interest are chalcopyrite, bornite and gold, which occur primarily as infill within these veins. Gold is intergrown with chalcopyrite and bornite.</li> <li>The ore mineralised zones at Altan Tolgoi, Tsagaan Sudal and Zesen Uul are associated with a core of quartz veins that were intensely developed in and the quartz diorite intrusive stocks and/or dykes rocks. These vein arrays can be described as stockwork, but the veins have strong developed preferred orientations.</li> <li>Sulphide mineralisation is zoned from a bornite-rich core that zone outwards to chalcopyrite-rich and then outer pyritic haloes, with gold closely associated with bornite.</li> <li>Drilling indicates that the supergene</li> </ul>
		profile has been oxidised to depths up to 60 metres below the surface. The oxide zone comprises fracture controlled copper and iron oxides; however there is no obvious depletion or enrichment of gold in the oxide zone.
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.	<ul> <li>Altan Tolgoi comprises two main mineralised zones, northern and southern stockwork zones (AT-N and AT-S) which are approximately 100 metres apart and hosted in diorite and quartz diorite porphyries.</li> </ul>
		The AT-S is at least 550 metres long,

• Cut off grades applied are copper-



Criteria	JORC Code Explanation	Commentary
		600 metres deep and contains strong quartz-chalcopyrite-pyrite stockwork veining and associated high grade copper-gold mineralisation. The stockwork zone widens eastward from a 20 to 70 metres wide high-grade zone in the western and central sections to a 200 metres wide medium-grade zone in the eastern most sections. Mineralisation remains open at depth and along strike to the east.
		<ul> <li>The AT-N consists of a broad halo of quartz that is 250 metres long, 150 metres wide long and at least 350 metres deep.</li> </ul>
		<ul> <li>TS consists of a broad halo of quartz veins that is 850 metres long, 550 metres wide long and at least 500 metres deep, and forms a pipe like geometry.</li> <li>ZU forms a sub vertical body of stockwork approximately 350 Y 100 metres by at least 200 metres and plunges to the southeast.</li> </ul>
Estimation and modeling	The nature and appropriateness of the estimation technique(s) applied and key	The estimate Estimation Performed using Ordinary Kriging.
techniques	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	<ul> <li>Variograms are reasonable along strike.</li> </ul>
		Minimum & Maximum Informing samples     in 5 and 20 (1st page) Second page in 3.
	<ul><li>computer software and parameters used.</li><li>The availability of check estimates,</li></ul>	separate domains.
	previous estimates and/or mine production records and whether the	<ul> <li>Halo mineralisation defined as 0.12% Cu and 0.12g/t Au Grade.</li> </ul>
	<ul> <li>Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> </ul>	• The mineralised domains were manually digitised on cross sections defining mineralisation. Three dimensional grade shells (wireframes) for each of the metals to be estimated were created from the sectional interpretation. Construction of the grade shells took into account prominent lithological and structural features. For copper, grade shells were constructed for each deposit at a cut-off of 0.12% and 0.3% Cu. For gold, wireframes were constructed at a threshold of 0.12g/t and 0.3 g/t. These grade shells took into account known gross geological controls in addition to broadly adhering to the above mentioned thresholds.

• Description of how the geological



Criteria	JORC Code Explanation	Commentary
	<ul> <li>interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul> <li>equivalent (CuEq) cut off values of 0.3% for appropriate for a large bulk mining open pit and 0.5% for bulk block caving underground.</li> <li>A set of plans and cross-sections that displayed colour-coded drill holes were plotted and inspected to ensure the proper assignment of domains to drill holes.</li> <li>The faulting interpreted to have had</li> </ul>
		considerable movement, for this reason, the fault surface were used to define two separate structural domains for grade estimation.
		Six metre down-hole composites were chosen for statistical analysis and grade estimation of Cu and Au. Compositing was carried out downhole within the defined mineralisation halos. Composite files for individual domains were created by selecting those samples within domain wireframes, using a fix length and 50% minimum composite length.
		<ul> <li>A total of 4428 measurements for specific gravity are recorded in the database, all of which were determined by the water immersion method. The average density of all samples is 2.74 t/m3. In detail there are some differences in density between different rock types, but since the model does not include geological domains a single pass ID2 interpolation was applied.</li> </ul>
		<ul> <li>Primary grade interpolation for the two metals was by ordinary kriging of capped 6m composites. A two-pass search approach was used, whereby a cell failing to receive a grade estimate in a previous pass would be resubmitted in a subsequent and larger search pass.</li> </ul>
		The Mineral Resource estimate meets the requirements of JORC 2012 and has been reported considering geological characteristics, grade and quantity, prospects for eventual economic extraction and location and extents. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories using relevant copperequivalent cut-off values;
		• CuEq = Cu% x (Aug/t x 0.6378 • Formula is based on a \$2.60/lb copper
		Formula is based on a \$2.60/lb copper



Criteria	JORC Code Explanation Commentary	
	price and a \$1,300/oz gold price.	
Moisture	<ul> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> <li>All tonnages are reported on a dry base</li> </ul>	sis.
Cut-off parameters	<ul> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> <li>Cut off grades applied are copperequivalent (CuEq) cut off values of 0.3 for possible open pit and 0.5% for underground.</li> </ul>	3%
Mining factors or assumptions	<ul> <li>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.</li> <li>No mining factors have been applied to the in situ grade estimates for mining dilution or loss as a result of the grade control or mining process.</li> <li>The deposit is amenable to large scale bulk mining.</li> <li>The Mineral resource is reported above an optimised pit shell. (Lerch Grossmat algorithm), mineralisation below the pit shell is reported at a higher cut-off to reflect the increased costs associated with block cave underground mining.</li> <li>0.3 % CuEq cut-off constrained within A\$4.00/lb Cu and \$1, 300/oz Au optimised pit shells.</li> </ul>	e /e an it
Metallurgical factors or assumptions	<ul> <li>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.</li> <li>No metallurgical factors have been applied to the in situ grade estimates.</li> </ul>	
Environmental factors or assumptions	<ul> <li>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 operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields 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</li> <li>An environmental baseline study was completed in 2003 by Eco Trade Co. It of Mongolia in cooperation with Sustainability Pty Ltd of Australia. The baseline study report was produced to meet the requirements for screening under the Mongolian Environmental Impact Assessment (EIA) Procedures administered by the Mongolian Ministr for Nature and Environment (MNE).</li> </ul>	) )



Criteria	JORC Code Explanation	Commentary
	with an explanation of the environmental assumptions made.	
Bulk density	<ul> <li>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.</li> <li>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.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul> <li>A total of 4428 measurements for specific gravity are recorded in the database, all of which were determined by the water immersion method.</li> <li>The average density of all samples is approximately 2.74 t/m3. In detail there are some differences in density between different rock types, but since the model does not include geological domains a single estimation pass (ID2) was applied to a density attribute.</li> <li>There is no material impact on global tonnages, but it should be noted that density is a function of both lithology and alteration (where intense magnetite/sulphide is present).</li> </ul>
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie 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).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>The mineral resource classification protocols, for drilling and sampling, sample preparation and analysis, geological logging, database construction, interpolation, and estimation parameters are described in the Main Report have been used to classify the 2015 resource.</li> <li>The Mineral Resource statement relates to global estimates of in-situ tonnes and grade</li> <li>The Mineral Resource estimate has been classified in accordance with the JORC 2012 Code using a qualitative approach. The classifications reflect the competent person's view of the Kharmagtai Copper Gold Project.</li> </ul>
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>XAM's internal review and audit of the Mineral Resource Estimate consisted of data analysis and geological interpretation of individual cross-sections, comparing drill-hole data with the resource estimate block model.</li> <li>Good correlation of geological and grade boundaries were observed.</li> <li>2013 - Mining Associates Ltd. was engaged to conduct an Independent Technical Report to review drilling, sampling techniques, QAQC and previous resource estimates. Methods were found to conform to international best practice.</li> </ul>
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	<ul> <li>An approach to the resource classification was used which combined both confidence in geological continuity (domain wireframes) and statistical</li> </ul>



# Criteria JORC Code Explanation Commentary

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 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.
- These statements of relative accuracy and confidence of the estimate should be compared with production data, where available

analysis. The level of accuracy and risk is therefore reflected in the allocation of the measured, indicated and inferred resource categories.

- Resource categories were constrained by geological understanding, data density and quality, and estimation parameters. It is expected that further work will extend this considerably.
- Resources estimates have been made on a global basis and relates to insitu grades.
- Confidence in the Indicated resource is sufficient to allow application of Modifying Factors within a technical and economic study. The confidence in Inferred Mineral Resources is not sufficient to allow the results of the application of technical and economic parameters
- The deposits are not currently being mined.
- There is surface evidence of historic artisanal workings.
- No production data is available.

#### 1.4 JORC TABLE 1 - SECTION 4 - ESTIMATION & REPORTING OF ORE RESERVES

Ore Reserves are not reported so this is not applicable to this report.

Rule 5.5

# **Appendix 5B**

# Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/2013

Name of entity

# XANADU MINES LIMITED

ABN

92 114 249 026

Quarter ended ("current quarter")

30 September 2015

# Consolidated statement of cash flows

Cash flows related to operating activities		Current quarter \$A'000	Year to date (9 months) \$A'000
1.1	Receipts from product sales and related debtors	-	-
1.2	Payments for (a) exploration & evaluation (b) development	(1,018)	(2,807)
1.3	<ul><li>(c) production</li><li>(d) administration</li><li>Dividends received</li></ul>	(697)	(2,443)
1.4	Interest and other items of a similar nature received	14	35
1.5 1.6	Interest and other costs of finance paid Income taxes paid	-	-
1.7	Other (provide details if material)	-	-
	Net Operating Cash Flows	(1,701)	(5,215)
	Cash flows related to investing activities		
1.8	Payment for purchases of: (a) prospects	-	-
	(b) equity investments (c) other fixed assets	-	-
1.9	Proceeds from sale of: (a) prospects	-	-
	(b) equity investments (c) other fixed assets	-	-
1.10	Loans to other entities	-	-
1.11	Loans repaid by other entities	-	- (222)
1.12	Other (provide details if material)	-	(838)
	Net investing cash flows	-	(838)
1.13	Total operating and investing cash flows (carried forward)	(1,701)	(6,053)

<sup>+</sup> See chapter 19 for defined terms.

# Appendix 5B Mining exploration entity and oil and gas exploration entity quarterly report

1.22	Cash at end of quarter	2,524	2,524
1.21	Exchange rate adjustments to item 1.20	<sup>,</sup> 81	182
1.20	Cash at beginning of quarter/year to date	4,144	7,508
	Net increase (decrease) in cash held	(1,701)	(5,166)
	Net financing cash flows	-	887
1.19	Other (share issue costs)	-	(23)
1.18	Dividends paid	-	-
1.17	Repayment of borrowings	-	- -
1.15 1.16	Proceeds from sale of forfeited shares Proceeds from borrowings	-	-
	etc.		
1.14	Proceeds from issues of shares, options,	-	910
	Cash flows related to financing activities		
	(brought forward)	(1,701)	(6,053)
1.13	Total operating and investing cash flows		

# Payments to directors of the entity, associates of the directors, related entities of the entity and associates of the related entities

		Current quarter \$A'000
1.23	Aggregate amount of payments to the parties included in item 1.2	152
1.24	Aggregate amount of loans to the parties included in item 1.10	-
1.25	Explanation necessary for an understanding of the transactions	
	N/A	

# Non-cash financing and investing activities

2.1	Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows			
	N/A			

2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

N/A			

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<sup>+</sup> See chapter 19 for defined terms.

Financing facilities available

Add notes as necessary for an understanding of the position.

		Amount available \$A'000	Amount used \$A'000
3.1	Loan facilities	\$5,714	\$3,582
3.2	Credit standby arrangements	-	-

# Estimated cash outflows for next quarter

		\$A'000
4.1	Exploration and evaluation	626
4.2	Development	-
4.3	Production	-
4.4	Administration	720
	Total	1,346

# **Reconciliation of cash**

show	onciliation of cash at the end of the quarter (as on in the consolidated statement of cash flows) are related items in the accounts is as follows.	Current quarter \$A'000	Previous quarter \$A'000
5.1	Cash on hand and at bank	2,524	4,144
5.2	Deposits at call	-	-
5.3	Bank overdraft	-	-
5.4 Other (provide details)		-	-
	Total: cash at end of quarter (item 1.22)	2,524	4,144

<sup>+</sup> See chapter 19 for defined terms.

# Changes in interests in mining tenements and petroleum tenements

		Tenement reference and location	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1	Interests in mining tenements and petroleum tenements relinquished, reduced or lapsed	N/A			
6.2	Interests in mining tenements and petroleum tenements acquired or increased	N/A			

# Issued and quoted securities at end of current quarter

Description includes rate of interest and any redemption or conversion rights together with prices and dates.

		Total number	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1	Preference +securities (description)	N/A			
7.2	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy- backs, redemptions				
7.3	<sup>+</sup> Ordinary securities	374,678,226	374,678,226		
7.4	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy- backs				
7.5	+Convertible debt securities (description)	N/A			

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<sup>+</sup> See chapter 19 for defined terms.

# Appendix 5B Mining exploration entity and oil and gas exploration entity quarterly report

7.6	Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted			
7.7	Options (description and conversion factor)	Options 1,000,000 1,000,000 1,000,000 15,000,000 20,000,000 Share Rights 1,250,000 1,200,000 700,000 1,000,000 1,350,000	Exercise price \$0.60 \$1.20 \$1.80 Nil subject to share price and tenure hurdles Nil subject to share price and tenure hurdles	Expiry date 31/12/2016 31/12/2016 31/12/2016 14/1/2019 14/1/2019  28/2/2016 21/5/2016 01/6/2017 18/9/2017 1/2/2018
7.8	Issued during quarter			
7.9	Exercised during quarter		 	
7.10	Expired during quarter			
7.11	Debentures (totals only)	N/A		
7.12	Unsecured notes (totals only)	N/A		

<sup>+</sup> See chapter 19 for defined terms.

# **Compliance statement**

This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 5).

This statement does /<del>does not\*</del> (*delete one*) give a true and fair view of the matters disclosed.

Sign here: Date: 30 October 2015

Company Secretary
Print name: Janine Rolfe

# **Notes**

- The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.
- The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements and petroleum tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement or petroleum tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- The definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report.
- Accounting Standards ASX will accept, for example, the use of International Financial Reporting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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<sup>+</sup> See chapter 19 for defined terms.