Metallurgical Tests at Kharmagtai Show Strong Sulphide Rougher Flotation Recovery

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TORONTO, March 04, 2024 - <u>Xanadu Mines Ltd.</u> (ASX: XAM, TSX: XAM) (Xanadu, XAM or the Company) is pleased to provide an update on metallurgical test work for the Kharmagtai Project in Mongolia, being developed with the Company's joint venture partner <u>Zijin Mining Group Co. Ltd.</u>. (Zijin). The sulphide rougher recovery results represent a very positive technical and economic outcome for the Kharmagtai Pre-Feasibility Study (PFS). Next stage cleaner recovery and oxide leach test work continues to progress to plan.

Highlights

- PFS stage metallurgical test work completed for sulphide rougher process recoveries.
- Rougher flotation tests delivered metallurgical recoveries up to 98% copper and 95% gold, at head grades up to 1.6% Cu and 2.0g/t Au at P80 grind size of 150 micron (μm).
- These are in line with or better than Scoping Study¹ assumptions and indicate potential value uplift in final PFS recoveries.
- Grind size selected at 150 µm for Stage 1 (15Mtpa in Scoping Study) and 212 µm for Stage 2 (30Mtpa in Scoping Study), following trade-off studies by DRA Global. Coarse particle flotation remains under investigation to further optimise Stage 2 grind size.
- Process flowsheet includes conventional comminution, followed by rougher flotation, then regrinding and three stages of cleaning to produce a clean concentrate.
- Next stage regrind & cleaner flotation underway, targeting a balance between concentrate grade and recovery. Results expected in May or June 2024.

Xanadu's Executive Chairman & Managing Director, Colin Moorhead said:

"Strong sulphide rougher flotation results were expected given the clean mineralogy of the deposits at Kharmagtai, and it is very pleasing to have this confirmed here. These results are only part of our metallurgical test plan, and we look forward to future announcements including cleaner flotation and an even larger potential value uplift from our oxide leach program being investigated by MPS labs in Perth."

Metallurgical Recoveries

The rougher flotation test program was conducted at ALS laboratory in Perth. It included head grade analysis and rougher flotation recovery test work on 26 samples taken from varying deposits, depths, sulphide and alteration types, using a 150 µm grind size.

Results are shown in Table 1 and demonstrate achievement of generally high rougher flotation recoveries in both copper and gold. Copper head grade versus copper recovery is shown in Figure 1.

Table 1: Rougher Flotation Recovery Results

Sample ID ²	Drill Hole Number	From (m)	To (m)	Cu Head Grade (%)	Au Head Grade (g/t)	Cu Recovery (%)	Au Recovery (%)
CHCOM_001	336	50	60	0.38	0.14	80.9	76.0
CHCOM_002	416	150	160	0.82	1.96	94.6	89.7
CHCOM_003	434	67	74	0.22	0.06	88.3	89.1
SHCOM_001	250	220	230	0.59	0.88	93.2	93.6
SHCOM_002	263	288	298	0.59	1.67	90.2	86.5

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SHCOM_003 27	9 336	346	0.51	0.12	89.3	90.9
SHCOM_005 34	3 180	190	0.23	0.13	89.2	79.2
SHCOM_006 34	6 364	374	0.15	0.21	77.1	na
SHCOM_010 34	7 502	512	0.23	0.19	79.1	51.5
SHCOM_011 34	7 170		0.82	0.95	95.8	90.3
SHCOM_012 35	9 200	210	0.45	0.06	94.5	82.9
SHCOM_013 37	1 269	279	0.30	0.14	90.5	85.9
SHCOM_014 39	4 112	122	1.58	0.65	98.1	94.5
SHCOM_015 56	5 195	205	0.19	0.10	88.8	89.2
WHCOM_001 47	3 63	74	0.34	0.17	84.6	81.1
WHCOM_002 43	0 458	468	0.23	0.10	90.6	80.5
WHCOM_003 47	7 263	274	0.36	0.41	90.3	83.7
WHCOM_004 47	4 50	60	0.16	0.05	71.5	73.3
WHCOM_005 44	4 64	74	0.40	0.15	90.2	81.2
WHCOM_006 34	5 222	232	0.32	0.18	83.8	73.8
WHCOM_007 36	6 352	362	0.19	0.10	85.1	82.5
WHCOM_008 22	6 220	230	0.41	0.74	91.1	81.0
WHCOM_009 32	2 94	104	0.23	0.15	82.7	70.4
WHCOM_010 30	8 192	202	0.48	0.31	89.0	81.6
WHCOM_011 32	4 396	406	0.42	0.33	82.2	73.6
WHCOM_012 44	4 490	500	0.29	0.22	87.7	79.4

Figure 1. Copper Grade vs Rougher Recovery

Grind Size Selection

The flowsheet considers conventional comminution followed by rougher flotation, rougher concentrate is then reground and followed by three stages of cleaning to produce a final concentrate (Figure 2).

Figure 2. Conventional flowsheet (simplified)

The rougher flotation step represents the key to overall recovery, so comminution circuit grind size selection was based on rougher recoveries at primary grinds of 80% passing 212 (coarser), 180, 150, and 106 (finer) μ m.

DRA analysis concluded that 150 μ m result is optimum for Stage 1 (defined as 15Mtpa in the Scoping Study³) and recommends 212 μ m for Stage 2 (30Mtpa in the Scoping Study).

Rougher flotation results for the four grind sizes tested are shown in Table 2. These tests were conducted on a composite sample made up from the 26 variability samples with average assays of 0.41% Cu and 0.35g/t Au.

Table 2. Flotation Rougher Recovery at Grind Sizes

Grind Size P₈₀ Test Mass % Cu % Au %

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106	JS5800 6.1	92.4	NA
150	JS5793 6.8	90.0	NA
180	JS5801 7.7	88.4	82.5
212	JS5802 7.8	85.8	83.2

Copper recovery to the rougher concentrate decreased with increasing grind size (coarser) as would be expected. Recovery versus grind size is shown in Figure 3.

Figure 3. Copper Rougher Recovery versus Grind Size

Flotation Sample Selection and Preparation

Samples were collected from core drilled at Stockwork Hill, White Hill and Copper Hill deposits at the Kharmagtai project, as being representative of each of these zones. Sample preparation consisted of homogenising and splitting samples "as received" into their respective composites and labelling by deposit (CH = Copper Hill; SH = Stockwork Hill; WH = White Hill) and by sample number (between 1 and 15 by deposit), followed by crushing and grinding to 150 µm. Each split was rotary split and homogenised for head analysis and sub-samples taken for test work. Head assays for Cu and Au were conducted by fire assay for each sample.

Metallurgical sample locations, zones and head assay grades are detailed in Table 1. Drill hole sample collar locations are detailed in Appendix 1 and illustrated in Figure 3.

Figure 3: Collar locations for drill holes sampled in metallurgical test work

Future Test Work

The next stage of the flowsheet after the roughers is a regrind followed by three stages of cleaning to produce a final concentrate. Cleaner test work is in progress, focused on determining the optimal balance of concentrate grade and recovery.

Sulphide flotation is a subset of the broader Kharmagtai metallurgical test work program. The comprehensive metallurgy program during the Pre-Feasibility Study includes comminution properties of the mineralisation and alteration styles at Kharmagtai to determine optimum flowsheet and generate inputs for engineering design. This will also generate data to inform the copper and gold recovery models, and allow operating costs estimates to be calculated. Concentrate samples will be generated for marketing studies as part of the broader metallurgy program. This will be important for reinforcing concentrate saleability, which we expect to be a clean and in-demand concentrate, in a very tight concentrate market.

The broader metallurgical program also includes oxide leach test work to determine the value and viability of using a heap leach to capture value from partially oxidised, near-surface pre-strip material which was treated as waste in the Scoping Study⁴ and identified as a significant uplift opportunity to turn pre-strip costs into positive revenue for the Kharmagtai project.

About Xanadu Mines

Xanadu is an ASX and TSX listed Exploration company operating in Mongolia. We give investors exposure to globally significant, large-scale copper-gold discoveries and low-cost inventory growth. Xanadu maintains a portfolio of exploration projects and remains one of the few junior explorers on the ASX or TSX who jointly control a globally significant copper-gold deposit in our flagship Kharmagtai project. Xanadu is the Operator

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of a 50-50 JV with Zijin Mining Group in Khuiten Metals Pte Ltd, which controls 76.5% of the Kharmagtai project.

For further information on Xanadu, please visit: www.xanadumines.com or contact:

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This Announcement was authorised for release by Xanadu's Executive Chair & Managing Director.

Appendix 1: Metallurgical Sample Composition & Location

Table 1: Drill hole sample details for rougher flotation test work

Hole ID	Prospect	East	North	RL	Azimuth (°)	Inc (°)	Depth (m
KHDDH250	Stockwork Hill	592456	4877956	1290	180	-55	351.8
KHDDH263	Stockwork Hill	592636	4877991	1287	180	-75	814.7
KHDDH276	Stockwork Hill	592612	4877623	1288	0	-60	655.3
KHDDH277	Stockwork Hill	592344	4877662	1291	0	-45	346.4
KHDDH279	Stockwork Hill	592693	4877582	1288	0	-45	447.0
KHDDH343	Stockwork Hill	592680	4877890	1285	180	-80	617.6
KHDDH346	Stockwork Hill	592849	4877851	1283	175	-80	680.7
KHDDH347	Stockwork Hill	592636	4877890	1285	175	-80	704.7
KHDDH359	Stockwork Hill	592443	4878038	1291	180	-68	626.5
KHDDH371	Stockwork Hill	592768	4877899	1283	180	-80	700.0
KHDDH372	Stockwork Hill	592915	4877882	1281	180	-75	607.0
KHDDH394	Stockwork Hill	592460	4877833	1288	100	-59	898.0
KHDDH527	Stockwork Hill	592274	4877961	1293	178	-72	652.0
KHDDH565	Stockwork Hill	593128	4877885	1280	233	-55	1609.4
KHDDH336	Copper Hill	592647	4876448	1304	0	-60	158.6
KHDDH416	Copper Hill	592698	4876440	1305	246	-50	437.0
KHDDH434	Copper Hill	592554	4876456	1302	180	-62	366.2
KHDDH457	Copper Hill	592388	4876430	1305	180	-65	454.9
KHDDH473	White Hill	591894	4877307	1305	0	-60	300.6
KHDDH430	White Hill	592097	4877422	1301	200	-60	851.7
KHDDH477	White Hill	592100	4877097	1305	0	-60	438.8
KHDDH474	White Hill	591900	4877496	1299	0	-60	250.1
KHDDH444	White Hill	592159	4877565	1296	205	-60	1225.5
KHDDH345	White Hill	592065	4877380	1305	176	-73	426.8
KHDDH366	White Hill	591943	4877319	1309	5	-82	433.0
KHDDH226	White Hill	592041	4877274	1310	90	-50	336.7
KHDDH322	White Hill	592248	4876940	1302	0	-60	856.0
KHDDH308	White Hill	591674	4877243	1305	90	-53	496.2
KHDDH324	White Hill	592247	4877529	1294	180	-60	861.2

Appendix 2: Statements and Disclaimers

Competent Person Statements

The information in this announcement that relates to exploration results is based on information compiled by

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Dr Andrew Stewart, who is responsible for the exploration data, comments on exploration target sizes, QA/QC and geological interpretation and information. Dr Stewart, who is an employee of Xanadu and is a Member of the Australasian Institute of Geoscientists, 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* and the *National Instrument 43-101*. Dr Stewart consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this Announcement that relates to metallurgy and metallurgical test work has been reviewed by Graham Brock, BSc (Eng), ARSM. Mr Brock is not an employee of the Company but is employed as a contract consultant. Mr Brock is a Fellow of the Australasian Institute of Mining and Metallurgy; he has sufficient experience with the style of processing response and type of deposit under consideration, and to the activities undertaken, to qualify as a competent as defined in the 2012 Edition of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves and the National Instrument 43-101. Mr Brock consents to the inclusion in this report of the contained technical information in the form and context as it appears.

Forward-Looking Statements

Certain statements contained in this Announcement, including information as to the future financial or operating performance of Xanadu and its projects may also include statements which are 'forward?looking statements' that may include, amongst other things, statements regarding targets, estimates and assumptions in respect of mineral reserves and mineral resources and anticipated grades and recovery rates, production and prices, recovery costs and results, capital expenditures and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions. These 'forward-looking statements' are necessarily based upon a number of estimates and assumptions that, while considered reasonable by Xanadu, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies and involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward?looking statements.

Xanadu disclaims any intent or obligation to update publicly or release any revisions to any forward?looking statements, whether as a result of new information, future events, circumstances or results or otherwise after the date of this Announcement or to reflect the occurrence of unanticipated events, other than required by the *Corporations Act 2001* (Cth) and the Listing Rules of the Australian Securities Exchange (ASX) and Toronto Stock Exchange (TSX). The words 'believe', 'expect', 'anticipate', 'indicate', 'contemplate', 'target', 'plan', 'intends', 'continue', 'budget', 'estimate', 'may', 'will', 'schedule' and similar expressions identify forward?looking statements.

All 'forward?looking statements' made in this Announcement are qualified by the foregoing cautionary statements. Investors are cautioned that 'forward?looking statements' are not guarantee of future performance and accordingly investors are cautioned not to put undue reliance on 'forward?looking statements' due to the inherent uncertainty therein.

For further information please visit the Xanadu Mines' Website at www.xanadumines.com.

Appendix 3: 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 Xanadu. This Table 1 updates the JORC Table 1 disclosure dated 8 December 2023.

JORC TABLE 1 - SECTION 1 - SAMPLING TECHNIQUES AND DATA

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

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Criteria

Location of data points

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 Representative ½ core samples were split from PQ, HQ & N • The orientation of the cut line is controlled using the core ori Sample intervals are defined and subsequently checked by Sampling techniques • Reverse Circulation (RC) chip samples are 1/4 splits from one RC samples are uniform 2m samples formed from the comb The Mineral Resource Estimation has been based upon dia Drilling techniques All drill core drilled by Xanadu has been oriented using the ' Diamond drill core recoveries were assessed using the stan Diamond core recoveries average 97% through mineralisation Overall, core quality is good, with minimal core loss. Where
 RC recoveries are measured using whole weight of each 1n Drill sample recovery Analysis of recovery results vs grade shows no significant tr All drill core is geologically logged by well-trained geologists Logging of lithology, alteration and mineralogy is intrinsically Logging Drill core is also systematically logged for both geotechnical Both wet and dry core photos are taken after core has been All drill core samples are ½ core splits from either PQ, HQ o Core is appropriately split (onsite) using diamond core saws The diamond saws are regularly flushed with water to minim A field duplicate ¼ core sample is collected every 30th samp Routine sample preparation and analyses of DDH samples Sub-sampling techniques and sample preparation All samples were prepared to meet standard quality control ALS Mongolia Geochemistry labs quality management systematics • The sample support (sub-sample mass and comminution) is Sample preparation at ALS Perth Labs consisted of homogeth All samples were routinely assayed by ALS Mongolia for gol Au is determined using a 25g fire assay fusion, cupelled to c • All samples were also submitted to ALS Mongolia for the 48 Quality assurance has been managed by insertion of appropriate Assay results outside the optimal range for methods were re Quality of assay data and laboratory tests Ore Research Pty Ltd certified copper and gold standards h QC monitoring is an active and ongoing processes on batch Prior to 2014: Cu, Ag, Pb, Zn, As and Mo were routinely det Assays as part of the rougher flotation metallurgical test wor All assay data QA/QC is checked prior to loading into XAM's The data is managed by XAM geologists. The data base and geological interpretation is managed by 3 Verification of sampling and assaying Check assays are submitted to an umpire lab (SGS Mongoli No twinned drill holes exist. There have been no adjustments to any of the assay data.

Commentary

Diamond drill holes have been surveyed with a differential g
The grid system used for the project is UTM WGS-84 Zone
Historically, Eastman Kodak and Flexit electronic multi-shot

More recently (since September 2017), a north-seeking gyro
The project Digital Terrain Model (DTM) is based on 1m cor

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Data spacing and distribution

- Holes spacings range from <50m spacings within the core of
- Holes range from vertical to an inclination of -60 degrees de The data spacing and distribution is sufficient to establish ar
- Holes have been drilled to a maximum of 1,304m vertical de
- The data spacing and distribution is sufficient to establish ge

Orientation of data in relation to geological structure

- Drilling is conducted in a predominantly regular grid to allow
- Scissor drilling, as well as some vertical and oblique drilling,
- Samples are delivered from the drill rig to the core shed twice
- Samples are dispatched from site in locked boxes transported
- Sample shipment from Ulaanbaatar to ALS lab in Perth is di
- Sample shipment receipt is signed off at the Laboratory with
- Samples are then stored at the lab and returned to a locked

Audits or reviews

Sample security

- Internal audits of sampling techniques and data management
- External reviews and audits have been conducted by the fol
- 2012: AMC Consultants Pty Ltd. was engaged to conduct ar
- 2013: Mining Associates Ltd. was engaged to conduct an In
- 2018: CSA Global reviewed the entire drilling, logging, samp

JORC TABLE 1 - SECTION 2 - REPORTING OF EXPLORATION RESULTS

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

Criteria Commentary

Mineral tenement and land tenure status

- The Project comprises 2 Mining Licences (MV-17129A Oyut Ulaan and (MV Xanadu now owns 90% of Vantage LLC, the 100% owner of the Oyut
 - The Kharmagtai mining license MV-17387A is 100% owned by Oyut L
- The Mongolian Minerals Law (2006) and Mongolian Land Law (2002) gover

Exploration done by

 Previous exploration at Kharmagtai was conducted by Quincunx Ltd, Ivanho Previous exploration at Red Mountain (Oyut Ulaan) was conducted by Ivanh

other parties

- The mineralisation is characterised as porphyry copper-gold type. Porphyry copper-gold deposits are formed from magmatic hydrothermal flui

Geology

Drill hole Information

- Diamond drill holes are the principal source of geological and grade data for
- See figures in this ASX/TSX Announcement.

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- The CSAMT data was converted into 2D line data using the Zonge CSAMT
- A nominal cut-off of 0.1% CuEq is used in copper dominant systems for idea
- A nominal cut-off of 0.1g/t AuEq is used in gold dominant systems like Gold
 Maximum continuous dilution within each interpent is 0m for 0.1%, 0.3%, 0.4%.
- Maximum contiguous dilution within each intercept is 9m for 0.1%, 0.3%, 0.0
 Most of the reported intercepts are shown in sufficient detail, including maximum.
- Informing samples have been composited to two metre lengths honouring the

The copper equivalent (CuEq) calculation represents the total metal value for eac

Copper equivalent (CuEq) grade values were calculated using the following formula

CuEq = Cu + Au * 0.62097 * 0.8235,

Gold Equivalent (AuEq) grade values were calculated using the following formula

AuEq = Au + Cu / 0.62097 * 0.8235.

Data Aggregation methods Where:

Cu - copper grade (%)

Au - gold grade (g/t)

0.62097 - conversion factor (gold to copper)

0.8235 - relative recovery of gold to copper (82.35%)

The copper equivalent formula was based on the following parameters (prices are

- Copper price 3.1 \$/lb (or 6834 \$/t)
- Gold price 1320 \$/oz
- Copper recovery 85%
- Gold recovery 70%
- Relative recovery of gold to copper = 70% / 85% = 82.35%.

Relationship between mineralisation on widths and intercept lengths

- Mineralised structures are variable in orientation, and therefore drill orientat
- Exploration results have been reported as an interval with 'from' and 'to' state

Diagrams

• See figures in the body of this ASX/TSX Announcement.

Balanced reporting

• Resources have been reported at a range of cut-off grades, above a minimum

Other substantive Exploration data

Extensive work in this area has been done and is reported separately.

Further Work

- The mineralisation is open at depth and along strike.
- Current estimates are restricted to those expected to be reasonable for ope
- Exploration on going.

JORC TABLE 1 - SECTION 3 - ESTIMATION AND REPORTING OF MINERAL RESOURCES

Mineral Resources are not reported so this is not applicable to this Announcement. Please refer to the Company's ASX Announcement dated 8 December 2023 for Xanadu's most recent reported Mineral Resource Estimate and applicable Table 1, Section 3.

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JORC TABLE 1 - SECTION 4 - ESTIMATION AND REPORTING OF ORE RESERVES

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

Photos accompanying this announcement are available at:

https://www.globenewswire.com/NewsRoom/AttachmentNg/1faef0f9-a86c-4ac8-8975-ddd9f208c570
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¹ ASX/TSX Announcement 8 April 2022 - Scoping Study Kharmagtai Copper-Gold Project

² Metallurgical Zones and Locations CH = Copper Hill; SH = Stockwork Hill; WH = White Hill

³ ASX/TSX Announcement 8 April 2022 - Scoping Study Kharmagtai Copper-Gold Project

⁴ ASX/TSX Announcement 8 April 2022 - Scoping Study Kharmagtai Copper-Gold Project