

## ZARAA DISCOVERY: A POTENTIAL GAME CHANGER

### Investment Highlights

- Xanadu Mines Limited's (XAM) flagship Kharmagtai Cu-Au project in Mongolia (XAM effective 76.5% ownership) represents one of the most promising copper and gold discoveries being explored globally. Most recently the Company has made a potentially game changing discovery at Zaraa intersecting over 900m of copper/gold mineralisation at 0.47% Cu Eq. The Zaraa discovery is located c.2km from three existing deposits (Stockwork Hill, Copper Hill and White Hill) where step-out drilling is continuing to assess this discovery. At Zaraa, based on the alteration halo size (1.5km x 0.5km) there is potential for this prospect to contain at least 1Bt of ore. To put this in perspective XAM has a 2014 Mineral Resource base which stands at 203.4Mt at 0.55% Cu Eq. (1.5Mlb Cu and 2.2Moz of Au). However, based on drilling success over the past 15 months we see the potential to at least triple this resource. Ultimately, we see the is potential for all these deposits to join at depth which could significantly increase the potential resource size and move the project towards being globally significant. XAM has a highly capable team with the majority of the team ex-Ivanhoe Mines geologists. We rate XAM a Speculative Buy.**
- Exciting New Discovery at Zaraa; Drilling Continuing:** XAM has made an exciting new discovery at Zaraa intersecting over 900m of mineralisation at an average grade of 0.47% Cu Eq. Based on the alteration halo we estimate the potential for at least 1Bt of ore suggesting this is part of a very large copper-gold system and may even join up (at depth) with the already defined deposits. The grade of the intercept (0.47% Cu Eq.) is in-line with the global average of existing Cu-Au porphyry resources (we estimate an average of 0.51% Cu Eq. [deposits >100Mt]). Given that this is the first hole into Zaraa (and not optimally drilled), further drilling may provide improved grades and/or identify shallower mineralisation given that the discovery hole mineralised zone starts at c.350m vertical depth.
- Unlocking the Potential of the Kharmagtai Cu-Au District:** The Kharmagtai Cu-Au Porphyry district is located along trend from the world class Oyu Tolgoi mine. This district has a large cluster of outcropping porphyry deposits. At Kharmagtai, a significant Mineral Resource of over 200Mt has already been defined within three deposits. However, XAM has had some significant extensional drilling success over the past 15 months and we see the potential to triple the existing resource. Furthermore, XAM has indicated from drilling that the Stockwork Hill and White Hill deposits might merge indicating a much larger target at depth. With multiple +200m intercepts at 1% Cu Eq. from surface, XAM is looking at the potential for an initial/starter low strip-ratio (1:1) open pit and a longer-term high-grade underground development option, very similar to the Oyu Tolgoi development pathway.
- Backing the Team:** The XAM team is predominately based in Mongolia and has a proven track record of discovery. The team is headed up by Andrew Stewart (Managing Director and CEO) who is a highly experienced geologist holding senior positions at Ivanhoe and Vale. Chief Exploration geologist, Mat Brown has over 20 years' experience in porphyry, epithermal and iron oxide copper gold-style mineralisation in the circum-Pacific region and Australia. He has been involved with several greenfields discoveries. Kevin Tomlinson is Chairman and has over 30 years' experience in the resource and finance sectors within Canada, Australia and the UK. A new Chief Commercial Officer has been enlisted, George Cumplido, who has vast experience in resource commercialisation including Vale and most recently as Senior Commercial Manager for Rio Tinto, including Mongolia.

10 May 2018

**12mth Rating** Speculative Buy

Price	A\$	0.195
Target Price	A\$	na
12mth Total Return	%	na

**RIC: XAM.AX** **BBG: XAM AU**

Shares o/s	m	588.7
Free Float	%	56
Market Cap.	A\$m	114.8
Net Debt (Cash)	A\$m	(5.1)
Net Debt/Equity	%	na
3mth Av. D. T'over	A\$	52,664
52wk High/Low	A\$	0.34/0.17
2yr adj. beta		

#### Valuation:

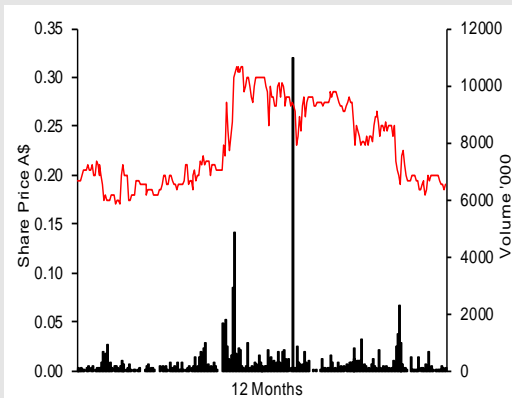
Methodology		na
Value per share	A\$	na

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### 12 Month Share Price Performance



<b>Performance %</b>	<b>1mth</b>	<b>3mth</b>	<b>12mth</b>
Absolute	-3	-25	-3
Rel. S&P/ASX 300	-13	-31	-36

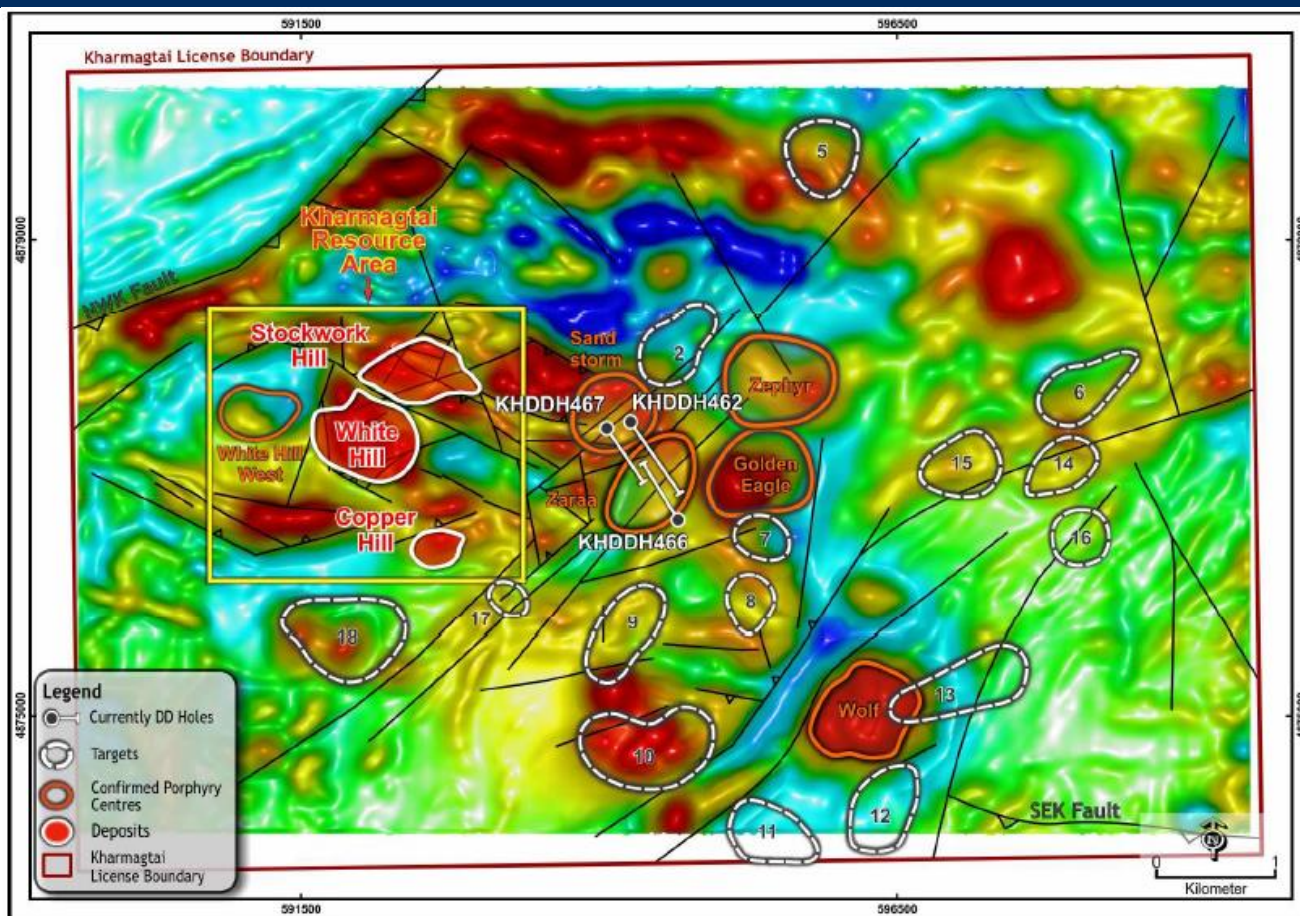
## NEW DISCOVERY AT ZARAA

XAM has made an exciting new discovery at Zaraa with an intercept of 928.4m at 0.30% Cu and 0.27g/t Au (0.47% Cu Eq.) from 458m including 613.9m at 0.37% Cu and 0.33g/t Au (0.58% Cu Eq) from 557m. Zaraa is located approximately 2km east of White Hill (Figure 1). We understand The discovery was made following re-logging of an old Ivanhoe core hole which suggested the potential for a nearby porphyry deposit.

### Key Analysis:

- The width of the intercept demonstrates the potential for Zaraa to be a very large scale system with further step-out drilling underway.
- We estimate based on the 1.5km x 0.5km 3D IP alteration halo there is potential for at least 1Bt of copper/gold ore. Our workings are 1500m x 500m x 900m x 2.85 (SG) = 1.92B of ore. If we risk weight this number by 50% we determine our estimate of c.1Bt of ore.
- The grade of the intercept (0.47% Cu Eq.) suggests that it is similar to other operating mines. However, the drill hole was not optimally drilled being the first hole in Zaraa suggesting that there is potential for further higher grade intercepts.
- The vertical depth of the mineralisation is c.350m, however, with further drilling this could identify mineralisation closer to surface. The follow-up holes: KHDDH466 encountered mineralisation at 420m and is currently at 891m and KHDDH467 encountered mineralisation at 361m and is currently at 825m.
- The XAM team have had a good track record of success. Out of the 19 targets identified, the Company has drilled nine, which has resulted in four porphyry discoveries including: Zaraa, Golden Eagle, Zephyr and Sandstorm. In addition, Target 19 was turned into an extension of White Hill (named White Hill West).

Figure 1: Kharmagtai showing ground magnetic data and location of Deposits (Stockwork Hill, White Hill, Copper Hill), KHDDH462.



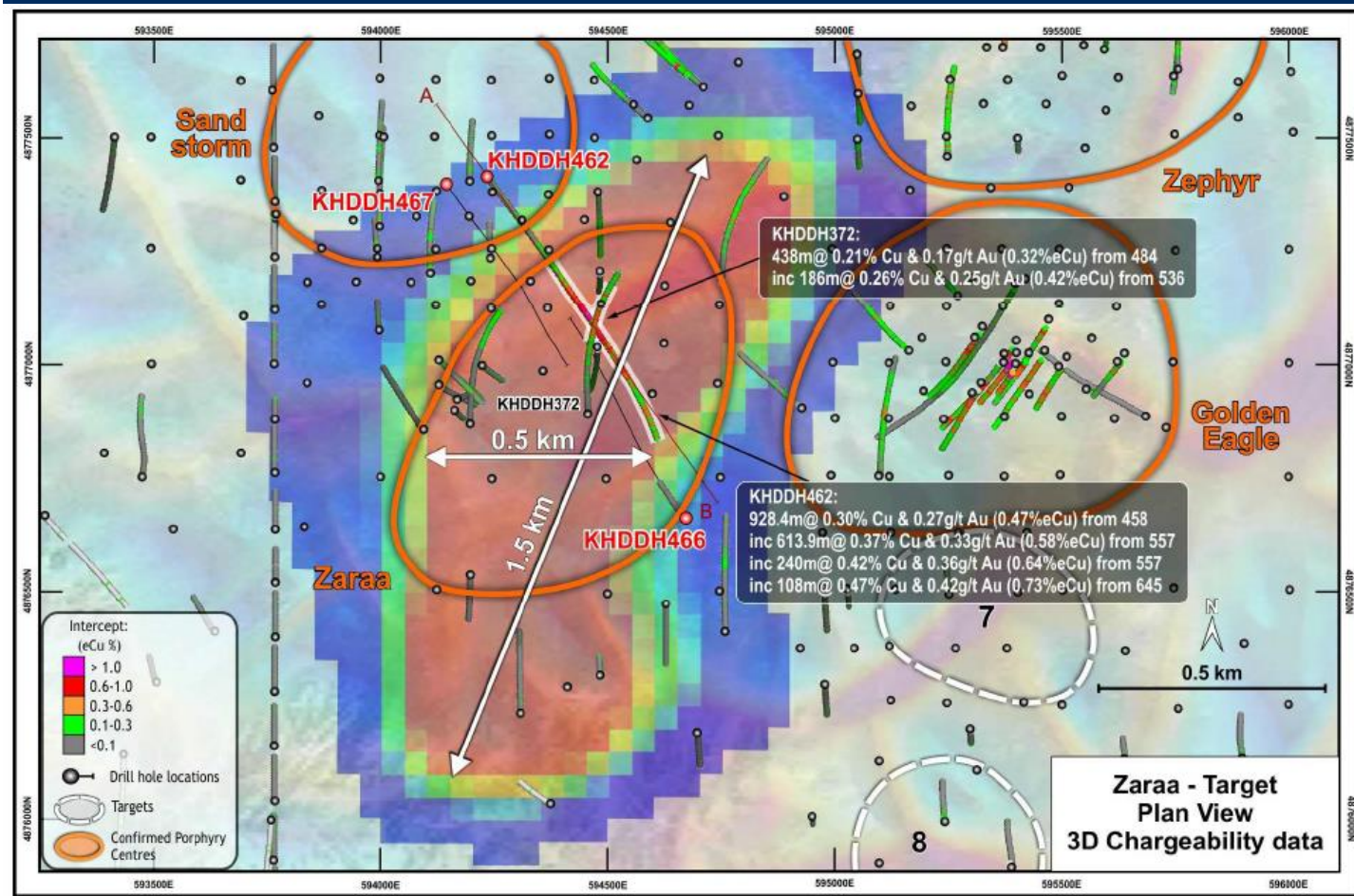
Source: Xanadu Mines Limited



### Zaraa Halo Alteration (1.5km x 0.5km)

XAM is working to determine the potential size of the Zaraa system. 3D induced polarisation (IP) data over the discovery area highlights the phyllic alteration zone associated with the mineralisation drilled in KHDDH462. This IP data shows a very large alteration system, interpreted to form a cap over the strike length of Zaraa (Figure 2). We suggest based on our workings (above) the potential for at least 1Bt of ore.

Figure 2: Plan view of Zaraa, showing returned assays and previous drilling over 3D IP data.



Source: Xanadu Mines Limited

## Potential to Move Kharmagtai Towards 1Bt (Resources)

We see the potential for XAM to significantly increase its resource base to at least 1Bt with further drilling. This is based on our assessment of the solid extensional results from each of its three deposits (Stockwork Hill, White Hill and Copper Hill) which we believe has the potential to at least triple its existing resource of 203Mt. In addition, with the discovery of Zараа and the potential for all of these deposits to join at depth we see the potential for XAM to define a Mineral Resource at least 1Bt at 0.5% Cu Eq. In Figure 3, we have benchmarked a potential resource of 1.6Bt at 0.5% Cu Eq. which shows it is comparable to existing operations. The 1.6Bt is composed on 0.6Bt from extensions to existing deposits and potential for 1Bt from Zараа, The table shows copper-gold porphyry resources from 600Mt to 2Bt.

Figure 3: Global Cu-Au Porphyry Deposits (600Mt to 2Bt).

Property Name	Country Name	Owner Name	Mineral	Grade	Mineral		Grade	Contained
			Reserves/ Resources (Mt)		(Copper Eq.) Mt	Reserves es (Mt)		
Lookout Hill	Mongolia	Turquoise Hill Resources Limited	1994	0.76	15.2	1994	1.228	78.6
Cerro Casale	Chile	Barrick Gold Corporation	1986	0.52	10.3	1986	0.841	53.6
Cerro Colorado	Panama	Republic of Panama	1887	0.69	13.1	1887	1.121	67.9
Jiama	China	China Gold International Resources Corp. Ltd.	1878	0.46	8.6	1878	0.739	44.6
Las Bambas	Peru	MMG Limited	1871	0.65	12.2	1871	1.051	63.1
Red Chris	Canada	Imperial Metals Corporation	1837	0.53	9.7	1837	0.850	50.1
Cuajone	Peru	Southern Copper Corporation	1829	0.52	9.4	1829	0.834	49.0
Schaft Creek	Canada	Teck Resources Limited	1826	0.36	6.6	1826	0.584	34.2
Resolution	USA	Rio Tinto	1784	1.54	27.5	1784	2.490	142.6
Sierra Gorda	Chile	KGHM Polska Miedz Spółka Akcyjna	1774	0.43	7.7	1774	0.699	39.8
Agua Rica	Argentina	Yamana Gold Inc.	1767	0.53	9.3	1767	0.854	48.4
<b>Kharmagtai (potential)</b>	<b>Mongolia</b>	<b>Xanadu Mines Limited</b>	<b>1600</b>	<b>0.50</b>	<b>8.0</b>	<b>1600</b>	<b>0.808</b>	<b>41.5</b>
Sarcheshmeh	Iran	National Iranian Copper Industries	1538	0.58	8.9	1538	0.938	46.3
Pinto Valley	USA	Capstone Mining Corporation	1514	0.29	4.4	1514	0.469	22.8
Atlas Toledo	Philippines	Atlas Consolidated Mining and Development Corporation	1345	0.34	4.6	1345	0.555	23.9
Canariaco Norte	Peru	Candente Copper Corporation	1295	0.43	5.5	1295	0.689	28.6
Almalyk Complex	Uzbekistan	Almalyk Mining and Metals Combine	1293	0.35	4.5	1293	0.559	23.2
Rio Blanco	Peru	Zijin Mining Group Company Limited	1258	0.57	7.1	1258	0.913	36.9
Rosemont	USA	Hudbay Minerals Inc.	1197	0.36	4.3	1197	0.582	22.4
Kingking	Philippines	St. Augustine Gold and Copper Limited	1179	0.44	5.2	1179	0.713	27.0
Encuentro	Chile	Antofagasta Plc	1173	0.53	6.2	1173	0.850	32.0
Bozshakol	Kazakhstan	KAZ Minerals PLC	1166	0.46	5.3	1166	0.740	27.7
Michiquillay	Peru	Southern Copper Corporation	1150	0.63	7.2	1150	1.018	37.6
Dexing Complex	China	Jiangxi Copper Company Limited	1139	0.46	5.2	1139	0.744	27.2
Safford	USA	Freeport-McMoRan Inc.	1135	0.48	5.5	1135	0.784	28.6
Chapada	Brazil	Yamana Gold Inc.	1088	0.35	3.8	1088	0.560	19.6
New Prosperity	Canada	Taseko Mines Limited	1030	0.49	5.0	1030	0.787	26.0
Constancia	Peru	Hudbay Minerals Inc.	1004	0.30	3.0	1004	0.480	15.5
Rosia Poieni	Romania	BayFront Capital Partners Ltd.	1000	0.36	3.6	1000	0.582	18.7
Batu Hijau	Indonesia	PT Amman Mineral Internasional	986	0.56	5.5	986	0.906	28.7
Gibraltar	Canada	Taseko Mines Limited	971	0.25	2.4	971	0.401	12.5
Galeno	Peru	China Minmetals Corporation	968	0.53	5.1	968	0.853	26.5
San Manuel	USA	BHP Billiton Group	959	0.60	5.8	959	0.976	30.1
Conga	Peru	Minera Yanacocha S.R.L.	929	0.60	5.6	929	0.974	29.0
La Arena	Peru	Tahoe Resources Inc.	895	0.46	4.1	895	0.746	21.4
Xietongmen	China	Jinchuan Group Co., Ltd.	857	0.49	4.2	857	0.796	21.9
Tuwu-Yandong	China	Yunnan Copper Industry (Group) Co., Ltd.	854	0.66	5.6	854	1.063	29.1
Bugdainskoye	Russia	PJSC Mining and Metallurgical Company Norilsk Nickel	801	0.01	0.1	801	0.014	0.4
Antapaccay	Peru	Glencore Plc	782	0.50	3.9	782	0.804	20.2
Bingham Canyon	USA	Rio Tinto	780	0.62	4.8	780	1.004	25.2
Ok Tedi	Papua New Guinea	Ok Tedi Mining Limited	763	0.80	6.1	763	1.291	31.6
Kisladag	Turkey	Eldorado Gold Corporation	746	0.34	2.5	746	0.550	13.2
Mount Milligan	Canada	Centerra Gold Inc.	732	0.36	2.7	732	0.585	13.8
Los Chancas	Peru	Southern Copper Corporation	726	0.55	4.0	726	0.889	20.7
Mirador	Ecuador	Tongling Nonferrous Metals Group Co., Ltd.	660	0.64	4.2	660	1.027	21.8
Northparkes	Australia	China Molybdenum Co., Ltd.	607	0.68	4.1	607	1.092	21.3
Duobaoshan	China	Zijin Mining Group Company Limited	603	0.38	2.3	603	0.613	11.9

Source: S&P Global Market Intelligence

### Much Bigger System than Previously Understood

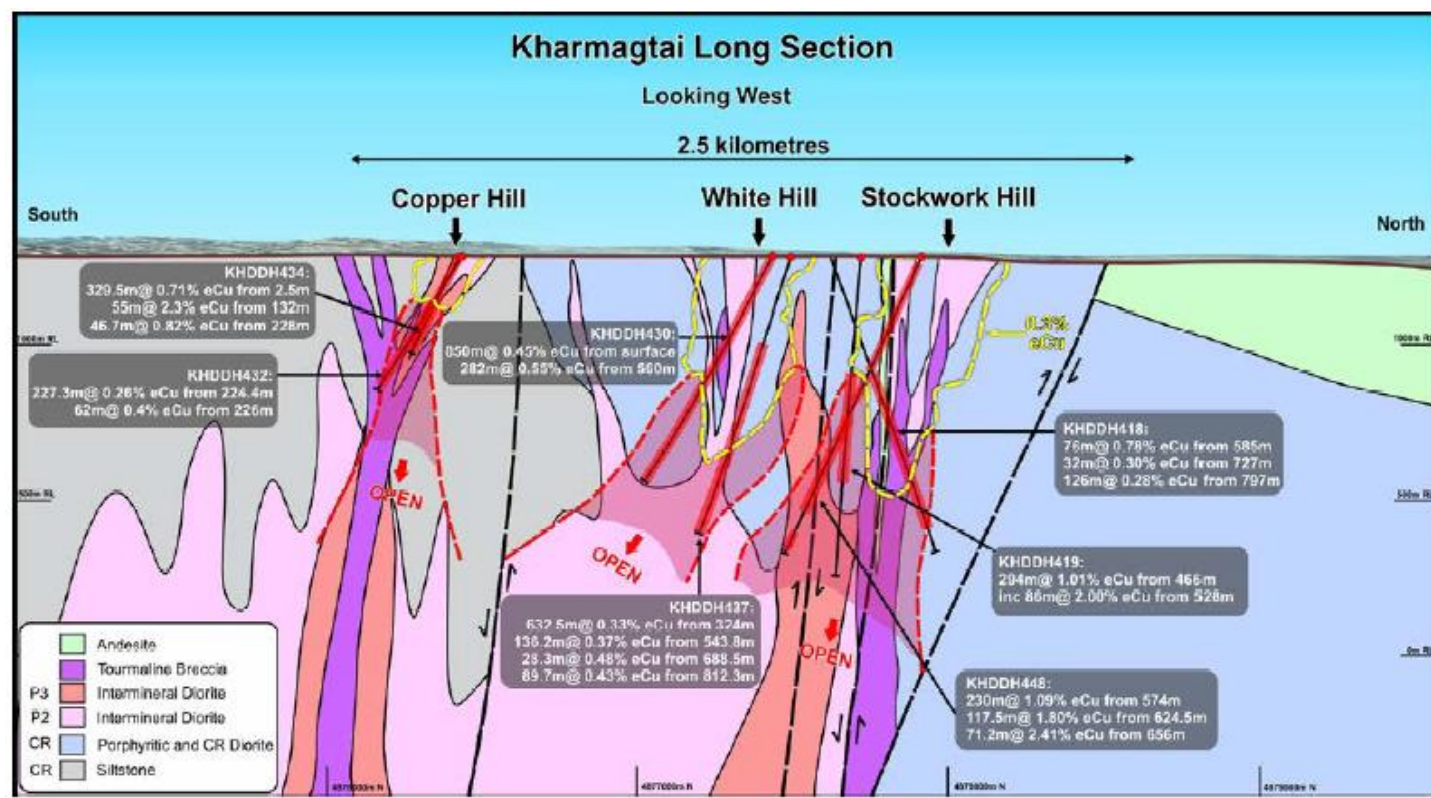
In addition to Zараа, over the past 15 months XAM has released some excellent extensional drill results at the existing deposits (Figure 4):

**Stockwork Hill:** Extension outside existing resource: 230m at 0.5% Cu and 0.91g/t Au (1.09% Cu Eq) from 574m including 117.5m at 0.76% Cu and 1.63g/t Au (1.8% Cu Eq.) from 624.5m including 71.2m at 0.92% Cu and 2.33g/t Au (2.41% Cu Eq.) from 684m. At Stockwork Hill, XAM has indicated that drilling has encountered strong bornite ( $Cu_5FeS_4$ ) downhole. The presence of bornite indicates a position more proximal to the higher-grade potassic core of the Stockwork Hill system.

**White Hill:** 850m at 0.32% Cu and 0.2g/t (0.45% Cu Eq.) from surface including 282m at 0.44% Cu and 0.16g/t Au (0.55% Cu Eq.) from 560m. The mineralisation has been extended +380m below and south of existing resource; The grade of new mineralisation is higher than that within the existing White Hill resource;

**Copper Hill:** 329.5m at 0.42% Cu and 0.46g/t Au (0.71% Cu Eq.) from 2.5m including 55m at 1.15% Cu and 1.81g/t Au (2.3% Cu Eq.) from 132m; and 46.7m at 0.48% Cu and 0.53g/t Au (0.82% Cu Eq.) from 228m. The deposit showing growth potential of high-grade core at depth.

Figure 4: Kharmagtai Long Section Showing Significant Results



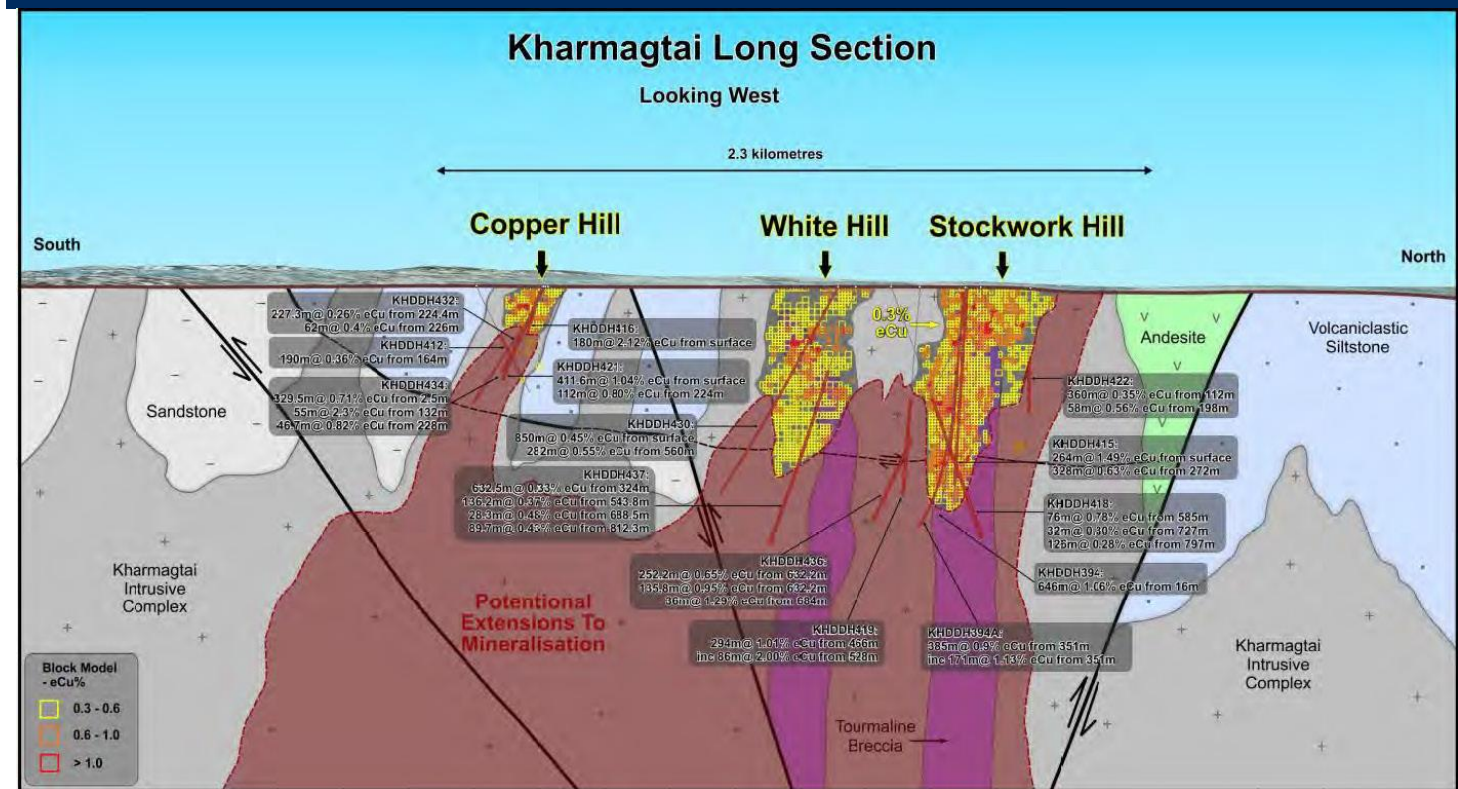
Source: Xanadu Mines Limited



## White Hill and Stockwork Hill May Join at Depth

Importantly, XAM have indicated that the White Hill and Stockwork Hill Deposits might join at depth (Figure 5). This significantly increases the resource growth potential. It also has similarities to the world class Oyu Tolgoi mine. These types of deposit are known to have a number of intrusive fingers (deposits) with the potential for a larger higher-grade deposit at depth. The magnetics also shows a large feature underneath the entire system. This deep seated target has the potential for making Kharmagtai a Tier 1 copper resource. However, this would require deeper extensional drilling. One of the competitive advantages XAM has is the ability to drill deeper for the same metre cost (for any size core).

Figure 5: Kharmagtai Long Section showing potential depth continuity.



Source: Xanadu Mines Limited

## 2018 Drilling Program – Significant Program Planned

XAM is targeting a significant 50,000m drill program targeting extensions from existing deposits. In addition, with the discovery of the Zaraa deposit further follow-up drilling is underway to determine the extent of the mineralised zones.

## Open Pit Development; Followed by Underground Opportunity

XAM is examining options to move the project towards development. XAM has released a number of 200m drill intercepts from surface at c.1% Cu Eq. this should allow an initial/starter low strip-ratio (1:1) open pit and a longer-term high-grade underground development option, very similar to the Oyu Tolgoi development pathway. We expect further information to become available in the second half of 2018.

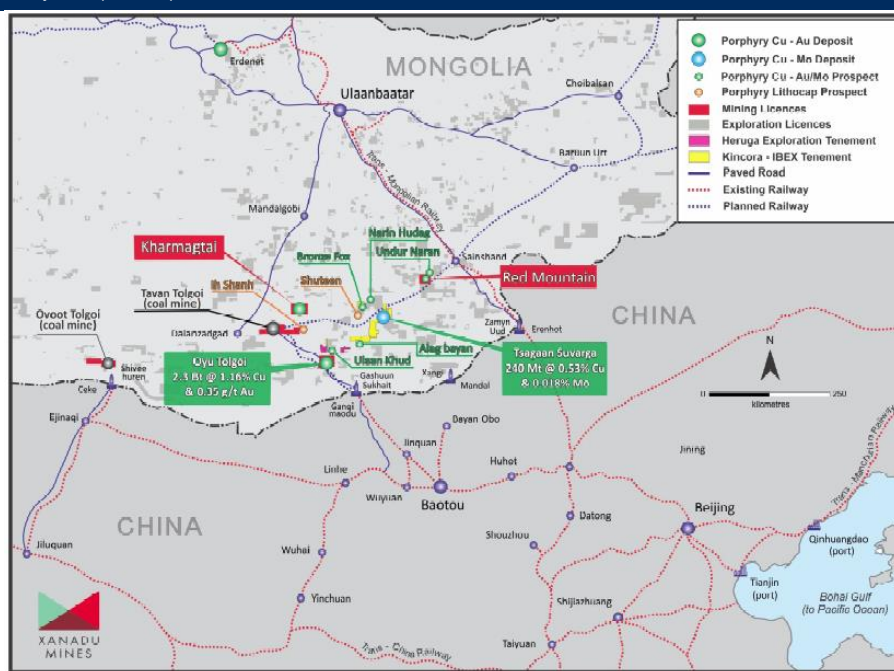
## COMPANY BACKGROUND

Xanadu Mines Limited (XAM) has a strategic ground holding in the world class South Gobi mining district, Mongolia (Figure 6). In early 2014, XAM acquired its flagship Kharmagtai project (XAM effective 76.5% ownership) from Turquoise Hill Resources Ltd (TRQ-TSX) for US\$12m. XAM acquired a significant amount of data which included high powered geophysics. After raising \$15.4m in 2017, XAM embarked on a significant exploration program targeting extensions to the existing three deposits (Stockwork Hill, White Hill and Copper Hill) as well as testing some of the 19 targets that have been identified by geophysics/geochem sampling. XAM have released some significant extensional drill results from these deposits especially at depth. XAM plans an aggressive exploration program of 50,000m in 2018 with the aim of continuing to expand the mineralisation. Most recently, XAM announced the discovery at Zaraa which looks significant and is located 2km east of White Hill. Importantly XAM has identified a deep seated highly charged IP anomaly below the existing deposits which could represent a very large higher-grade copper deposit.

In mid-2013, XAM acquired the Red Mountain (Oyut Ulaan) project (XAM 90%) for \$600k and 5m XAM shares. XAM has identified numerous high-priority targets at Red Mountain with drilling to initially target the four best targets.

Importantly, XAM have a high calibre geological team to unlock the potential value of these projects. On our recent site visit it was apparent that the team was proficient in the discovery of porphyry style deposits. The team has been using its extensive data on pathfinder minerals to better target their drilling. We note, the majority of the team live in country thereby reducing the need for global offices and thus lowers corporate administration costs. Finally, we note that XAM's projects are well positioned close to infrastructure (power, water, railways) which go directly into China (Figure 5).

Figure 6: XAM Projects (in Red)



Source: Xanadu Mines Limited

## CORPORATE

The Company has 588.7m shares on issue with 35m unlisted options expiring on 14/1/2019. There are also 20.6m performance rights with various price hurdles (\$0.2281-\$0.40/sh) and expiry dates (2018 testing dates). We note the Company's year-end is December. The Company was recently added to the All Ordinaries index (XAO).

The Company had \$5.1m in cash at the end of March with no debt. This should be sufficient for the next couple of quarters based on the current aggressive drill schedule (\$2.4m spend in June Q). However, further funding would likely be required especially for the drill-out of the larger porphyry targets such as Stockwork Hill and Zaraa.

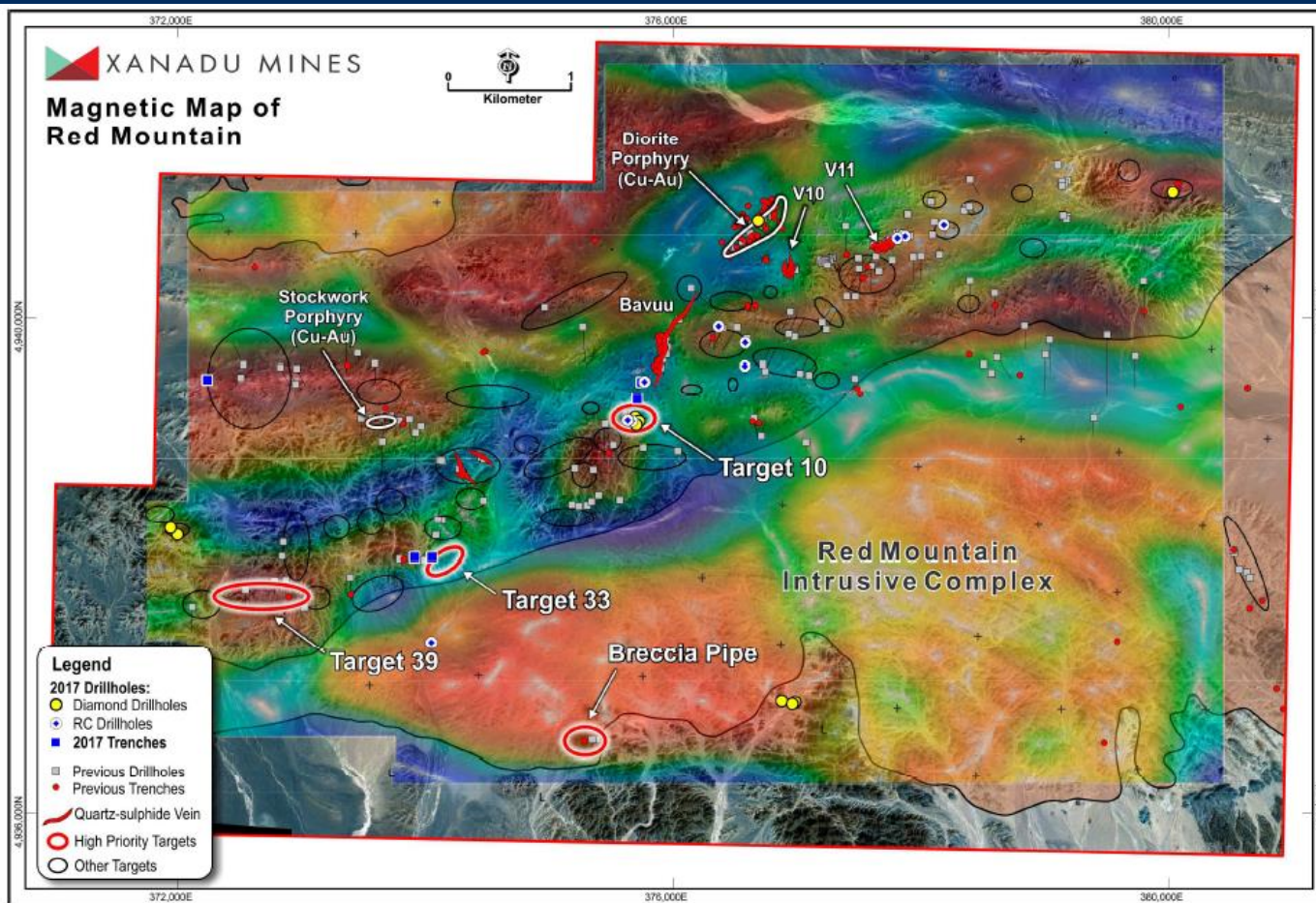


### RED MOUNTAIN COPPER-GOLD PROJECT (XAM 90%)

The Red Mountain (previously named Oyut Ulaan) copper-gold project is strategically located within the South Gobi Copper Belt 260km east of XAM's flagship Kharmagtai copper-gold project. This large and underexplored porphyry district (covering approximately 40km<sup>2</sup>) and consists of multiple co-genetic porphyry copper-gold centres, mineralised tourmaline breccia pipes copper-gold/base metal magnetite skarns and epithermal gold veins, which occur within the central part of the Licence. Previous exploration at Red Mountain has delivered good results from several different prospects with a spectrum of mineralisation styles, any combination of which could possibly transform the project into a significant mining camp. What is apparent is that many of the targets are outcropping and are mineralised.

An exploration program is being prepared to target large-scale porphyry and high-grade epithermal gold at Red Mountain. Drilling is expected to commence shortly.

Figure 7: Red Mountain Magnetics and Key Exploration Targets



Source: Xanadu Mines Limited



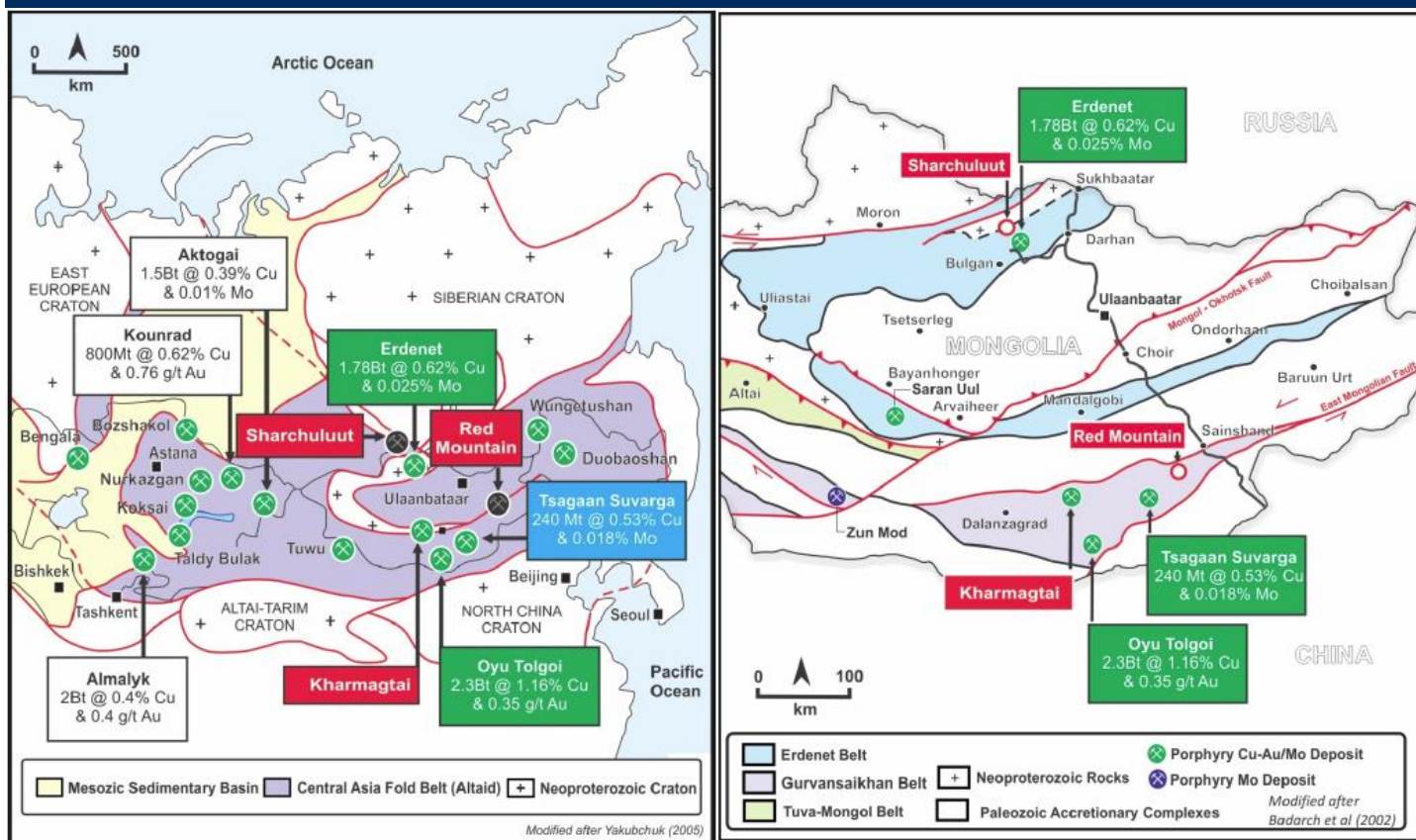
## MONGOLIA: A SOUGHT AFTER DESTINATION FOR MINING

Mongolia is a landlocked democratic country bordered by China and Russia. It has a population of approximately 3 million people with half of the population living in its capital Ulaanbaatar. Its economy has performed well over the past 25 years with its GDP trebling to US\$11b, however, the economy slowed significantly in 2016 (1% growth) due in part to the impact of lower commodity prices. We note the mining sector contributes around 20% of GDP which is twice the ratio of a decade ago. Whilst the economy has been fairly subdued, commodity prices picked up in 2017 which should improve growth (2017 data yet to be released by the World Bank). Both major parties in Mongolia are supportive of the mining sector which has become a key component of economic growth and jobs. The country's Mining Laws are generally based on Australian and Canadian based systems and has improved its legal and fiscal regime and is intent on attracting foreign mining investment.

Mongolia is fast becoming the chosen destination for large and mid-cap mining companies looking for significant copper-gold porphyry deposits. Mongolia contains seven separate porphyry copper belts with a number of significant deposits already discovered (Figure 3). The Oyu Tolgoi mine went into production in 2013 and work has commenced on the mine's \$5.3bn second phase. The new underground mine is slated for commissioning in 2020 and full production in early 2027. In 2016, production was 201kt of copper and 300koz of gold. The anticipated peak production is 622kt of copper and 650koz of gold. To put that in perspective, Olympic Dam produced 166kt of copper and 104koz of gold in FY2017 and is targeting an increase to 215kt of copper in FY2019 and 280kt by FY2022.

We note, Rio Tinto has recently acquired exploration tenements 40km south of XAM's flagship project Kharmagtai and is currently drilling, while Codelco the world biggest copper producer is preparing to invest in Mongolian copper. Along with Teck's stake in Erdene Resources (ERD:TSX), Mongolia is becoming a hub for copper-gold exploration activity amongst global majors and may become one of the world's most attractive new exploration regions. Furthermore, large gold companies are looking for large gold-copper porphyry deposits which could allow them to lower their cash costs through a sizable copper credit.

Figure 8: Significant Deposits in Mongolia Over simplified Geology



Source: Xanadu Mines Limited

## RISKS

Below we have identified a number of risks which may impact XAM. These are by no means a complete list of risks and there may be others beyond those identified:

**Exploration:** XAM is primarily exploration focused. Exploration is inherently risky and there is no guarantee that an economic deposit will be delineated. Further drilling is needed to follow-up targets which may or may not result in further discoveries.

**Financing:** Large porphyry deposits can be expensive to define and thus there are funding risks associated. The Company last reported a cash position of \$5.1m at the end of March 2018. XAM will likely need further funding in the future for the drill out of the Stockwork/Copper Hill deposits, drilling at Zараа as well as testing further exploration targets. There is no guarantee that these funds will be available at a reasonable cost or create an excessive level of dilution to existing shareholders.

**Country Risk:** Whilst we see country risk as moderate given that both political parties are supportive of mining there is a chance that a change in policy may occur. There has been one instance in 2009 where a uranium asset (Dornod uranium deposit) owned by Khan Resources (KRI-T) was taken off the Company. This went to International Arbitration and KRI-T was awarded US\$80m plus US\$9m in costs. In 2012, South Gobi Resources (SGQ-T) was unable to close a deal with Chalco (2600-HK) for US\$926m as it could not obtain the required regulatory approvals from the Mongolian Government. We note SGQ-T went into coal production in 2015 and sells its product into China.

**Commodity Price:** Once in a development scenario, XAM is most exposed to fluctuations in the price of copper and gold.

**Exchange Rate:** XAM has Mongolian based assets and is subject to fluctuations in the төгрөг (Mongolian) currency against the US dollar.



## DIRECTORS AND MANAGEMENT

### Kevin Tomlinson

#### Non-Executive Chairman (MSC Geology, Grad Dip Finance)

Mr Tomlinson is an experienced resources company CEO, director and financier with more than 30 years' experience within the Canadian, Australian and United Kingdom Stock markets. In Australia, Mr. Tomlinson held senior executive roles with Plutonic Resources and Hartleys as Head of Research. In London, he was Managing Director of Investment Banking at Westwind Partners/Stifel Nicolaus raising equity and providing corporate advice for many resources companies. Previous development and production Boards included Chairman of Medusa Mining (ASX, AIM, TSX) and Non-Executive Director of Centamin Plc (ASX, AIM, LSE, TSX) and Orbis Gold (ASX). He is currently Non-Executive Chairman of ASX and TSX listed Cardinal Resources and Chairman of ASX listed Plymouth Minerals.

### Andrew Stewart

#### Managing Director & Chief Executive Officer (BSc, PhD, MAIG & MSEG)

Dr Stewart is an exploration geologist with over 15 years' experience in mineral exploration; primarily focused on project generation, project evaluation and exploration strategy development throughout Asia and Eastern Europe. He has particular expertise in porphyry copper-gold and epithermal gold deposits, but has worked across a diverse range of commodities. He holds a BSc (Hons) from Macquarie University and a PhD from the Centre of Ore Deposits and Exploration Studies at the University of Tasmania. During his time at Ivanhoe Mines and Vale, Dr Stewart held various technical and management positions in Mongolia and Indonesia and has been involved in several green fields discoveries. After providing technical and program management for Vale in Indonesia and Mongolia, he joined XAM as Chief Geologist leading the gold and base metals project generation and evaluation team in Mongolia. Dr Stewart has been Managing Director and Chief Executive Officer of XAM since 2016 and prior to that had been Chief Executive Officer.

### Ganbayar Lkhagvasuren

#### Executive Director (M.IBL)

Ganbayar is a co-founder of XAM and has been a Director since 2006. He is the joint venture partner in Mongol Metals LLC and brings a vital Mongolian perspective to the Board of Directors. He works closely with the Managing Director in corporate development and managing the day-to-day operations in Mongolia. Ganbayar is a member of the Audit Committee and the Safety, Health and Environment Committee.

### Hannah Badenach

#### Non-Executive Director (B. Laws (Hons), B. Arts)

Ms Badenach is Director Mongolia at Noble Resources International Pte Ltd and a lawyer having practiced for several years, including 2 years in Mongolia with Lynch & Mahoney. She has extensive Mongolian, commercial and business development experience, having managed QGX LLC until the company was sold in 2008 and now developing and running Noble's business in Mongolia. Ms Badenach is a member of the Governance Committee.

### Darryl Clark

#### Independent Non-Executive Director (B.Sc (Honours) Phd (Economic Geology) FAusIMM)

Dr Clark is an exploration geologist whose career has taken him throughout Australia, Central Asia and South East Asia for over 20 years. His responsibilities over the last 10 years have involved him in a diverse range of technological, political and cultural environments with unique challenges. During previous corporate roles with both Vale and BHP Billiton, and in consulting roles including SRK, he has been responsible for business development strategies, designing multi-commodity exploration programs and the co-ordination of exploration teams to deliver discovery events. Currently, Dr Clark is the General Director for the Inkai Joint Venture mining operation in Kazakhstan owned by Cameco Corporation & Kazatomprom. He is a member of Safety, Health and Environment Committee and the Governance Committee.

## **Marcus Engelbrecht**

### **Non-Executive Director (MAICD; H Compt)**

Mr Engelbrecht is a well-rounded senior mining executive with both mining and exploration management experience with a strong finance background. He has worked in various emerging markets across the globe, including Indonesia and the Philippines in South East Asia, and brings a good network and reputation across the international institutional investment community.

Mr Engelbrecht has worked in the mining industry since 1985 and spent 20 years at BHP Billiton through to 2005 where he served as Chief Financial Officer for their Diamonds and Specialty Products business. From 2009 to 2011, he served as Chief Financial Officer of ASX/TSX/NZX listed OceanaGold and from 2011 to 2013, he served as Managing Director and Chief Executive Officer of London AIM listed and Singapore based Archipelago Resources Plc, a gold producer in Indonesia.

Mr Engelbrecht is the Chairman of the Audit Committee and a member of the Safety, Health and Environment Committee.

## **Mr Michele Muscillo**

### **Independent Non-Executive Director**

Mr Muscillo is a Partner with HopgoodGanim Lawyers in Brisbane. Michele has practised exclusively in corporate law for the duration of his legal career and has extensive experience in mergers and acquisitions and capital markets transactions, including the negotiation of significant commercial contracts and agreements. His key areas of practice include Corporate Advisory and Governance, Mergers and Acquisitions, Capital Markets and Resources and Energy.

Mr Muscillo is also currently a Non-Executive Director with ASX-Listed Aeris Resources Limited (AIS). Formerly, Michele was also Non-Executive Director of Orbis Gold Limited from the time of its ASX Listing, through the discovery of its flagship Natougou project and ultimately to the sale of the company to TSX-Listed SEMAFO Inc. (SMF-TSX) in 2015.

## **Mat Brown**

### **Chief Geologist**

Mr Brown has over 20 years of experience as an exploration geologist in porphyry, epithermal and iron oxide copper gold-style mineralisation in the circum-Pacific region and Australia and applies cutting edge methods of structural geology and geochemistry towards gold and base-metals exploration. He has previously worked with Ivanhoe Mines for ten years, including six years as Exploration Manager in Cloncurry, Australia. He has been involved with several brownfields discoveries including the Merlin high-grade molybdenum and SWAN copper-gold deposits; and brownfields projects at Osborne, Kulthor, and Starra.

## **Joe Lo Grasso**

### **Consultant Exploration Geologist**

Mr Lo Grasso is an exploration geologist with over 20 years' experience; particularly focused on porphyry copper-gold and epithermal gold deposits, but also has extensive experience in diverse copper deposit types. Having worked in Australia, SE Asia, Mongolia, Pakistan, Africa and Central America, he has extensive exposure in coordinating and managing exploration teams. During his time at Ivanhoe Mines, Joe worked on the Oyu Tolgoi exploration project and led the geology team in the mining of the Eunsan Epithermal Gold-Silver Mine in South Korea. In Pakistan he held the position of Project Manager for the Barrick Gold Corporation-Antofagasta Minerals Plc Reko Diq Joint Venture Project. More recently, with Antofagasta Minerals, Joe worked as Chief Geologist Australasia reviewing all copper projects within the area. At Xanadu, he provides technical guidance to the geology programme building capacity within the Mongolian team.

## **Munkhsaikhan Dambiinyam**

### **Chief Financial Officer (B.Acc (Honours), MSc Fin)**

Munkhsaikhan is a finance professional with more than 10 years of experience in mining, mining services and financial advisory. Previously, he held CFO and Executive Director positions at a mining services firm with operations in Central Asia. Munkhsaikhan holds a Master of Science in Finance from the University of Utah and completed an Executive Program at Western University.



## **Phil Mackey**

### **Company Secretary (B Bus)**

Phil was appointed Company Secretary of XAM in May 2016. Phil has over three decades of listed and unlisted company secretarial and commercial experience, including multi-jurisdictional board practice as both a company secretary and a director. Previously, Phil served as Company Secretary of ASX and SGX dual listed Australand Group Limited (a quadruple stapled group) and Deputy Company Secretary of AMP Limited. Phil's commercial experience includes appointment as Chief Operating Officer (Specialised Funds) at Babcock & Brown. Phil is a Fellow of the Governance Institute Australia and a Graduate Member of the Australian Institute of Company Directors.

## **George Cumplido**

### **Chief Commercial Officer/Commercial Manager (B.App.Sc, App Geo (Honours), MAIG, MAusIMM)**

Mr Cumplido is a geologist with vast experience in resource commercialisation of over 25 years in the exploration and mining industry. Mr Cumplido holds an Honours degree in Applied Science, Applied Geology from the University of Technology, Sydney, and has completed several Mineral Economics and Advanced Mining Geostatistics courses. Mr Cumplido has a technical background, having managed a large team of consultants as Technical Services Manager for Mapek Pty Ltd, and has authored several mineral resource statements. In the last 10 years, Mr Cumplido has represented large multinational firms in a commercial capacity in charge of project acquisitions and divestments for Vale and most recently Rio Tinto, in the Asia Pacific Region.

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