

26 October 2017 Market Announcements Platform ASX Limited Exchange Centre 20 Bridge Street Sydney NSW 2000

# Cobalt minerals identified in drilling Tisová Co Au Cu Project – Czech Republic

# Tisová Highlights

- Hole TIDD003 intersects multiple zones of massive to semi-massive sulphide mineralisation within a disseminated sulphide halo over 100m thick between 333m and 462m including visible cobaltite
- Hole TIDD002 also intersects multiple lenses of vein and disseminated sulphides between 370m and 400m
- Samples are being prepared for dispatch to assay laboratory
- Hole three commenced program completion expected mid-November
- 3D model confirmed:
  - Sulphide halos more than 100m true thickness
  - Multiple lenses of massive semi massive sulphides within target halo
  - 30 Km plus of underground development, including a 400m shaft down to 9 level (400m below surface) is present at Tisová
- Best historic results for Cobalt, Copper, Gold and Silver at Tisová:
  - 0.69% Cobalt, 17.1% Copper, 3.7 ppm Gold and 178 ppm Silver

Auroch Minerals ("Auroch" or "the Company"), a renewable energy focused exploration company is now half way through its Tisová drilling program. Both holes intersected the sulphide blanket as predicted in the 3D model. The second hole TIDD003 intersected multiple zones of sulphide mineralisation with **visible cobalt and copper** minerals within a 130m thick zone containing 1-5% disseminated sulphides.

Drilling of TIDD003 commenced on 05 October 2017. Sulphide mineralisation was intersected between 333m and 462m with massive to semi-massive intersections at: 340m, 380m, 387m, 422m, and 442m.

TIDD002, located to the north of TIDD003 (Figure 2), intersected multiple bands of pyrrhotite, pyrite, and chalcopyrite mineralisation between 370m and 400m. Previous rock chip samples by Auroch suggests that the highest cobalt grades occur away from the copper (chalcopyrite) rich zones.

**CEO Dr Andrew Tunks said,** "This is a pleasing result from the first two holes of our drilling program. Utilising our 3D model to target the thickest parts of the sulphide-rich ore body we



were confident that hole TIDD03 would intersect multiple sulphide zones. The drill rig will now move to hole 3 of the program, 400m southeast of TIDD003, and I look forward to intersecting further zones of mineralisation."



Figure 1 Cross-section view – Approximate TIDD003 drill trace (shown in bright blue) with interpreted sulphide halo and historic drilling. Intense sulphides mineralisation intersected at: 340m, 381m, 387m, 422m, 442m and 460m.



# TIDD002 & TIDD003 Sulphide Mineralisation - Examples



Photo 1 TIDD003: 20cm of stringer Cobalt mineralisation at 442m (almost mono-mineralic cobalt zone, likely cobaltite).



Photo 2 TIDD003 (340.0m): disseminated to semi-massive sulphides; pyrrhotite, pyrite and minor chalcopyrite.



Photo 3 TIDD003 (387.0m): semi massive/brecciated pyrhotite.





Photo 4 TIDD003 (441.7m): vein & semi massive chalcopyrite with pyrrhotite.



Photo 5 TIDD002 (413.0m - 413.3m): disseminated pyrrhotite, pyrite and minor chalcopyrite.

# Tisová Drilling Program

## TIDD003

A visual inspection of the drill core suggests a significant cobalt tenor in the mineralisation at Tisova. A highlight is a band of 20cm of semi-massive Cobalt minerals at 442m (Photo 1) which displays almost mono-mineralic cobalt mineralisation, followed by 30cm of pyrrhotite and 10cm of chalcopyrite mineralisation (total 0.6m semi-massive to stringer ore).

Preliminary findings from TIDD003 suggest Co mineralisation occurs as discrete lenses, not necessarily associated with Cu.

Whilst the overall sulphide 'halo' in TIDD003 was intersected as correctly predicted in the 3D model between 333m - 462m it was not as continuous as expected but rather consists of multiple small veins, stringers and occasionally massive to semi-massive horizons.

Swarms of stringers and veins seem to be parallel/subparallel to foliation, whilst other chalcopyrite veins crosscut early quartz veins. It is likely that the mineralisation has a strong structural control which was not previously recognised. Therefore the mineralisation is now



preliminarily interpreted as replacement of a sedimentary/diagenetic sulphide precursor by hot fesic derived Co-Cu-Au-(Sb-Sn)-rich fluids. This new model opens significant exploration potential for the Tisova-Kraslice Cobalt district

## TIDD002

TIDD002 was drilled at the northern extent of the former Tisova deposit (Figure 2). Mineralisation was observed to continue this far north with three narrow zones of minerlisation (pyrrhotite and chalcopyrite).

Holes have been logged and are currently being sampled with the first batch of samples expected to be dispatched to the ALS lab in Romania within the next week.

The Company will continue its four-hole drilling program with Holes TIDD01 to the south east of TIDD003, and TIDD004 located to the south. It is the Company's expectation that the drilling program will be completed mid November 2017.





Figure 2 Tisová licence outline with drill hole location plan on Google Earth imagery (collars from current drilling program highlighted – red stars completed blue stars planned). Next hole is TIDD001.



#### Table 1 Summary drill hole log - TIDD003. To be sampled 335m – 445m

		From (m)	To (m)	Lithology	Description		
Γ		0.00	3.50	LS	extremely weathered, lower saprolite		
		3.50	35.50	ZC	slightly weathered, light grey-green, well foliated (70 CA), chloritic phyllite		
		35.50	40.00	DI	black, diorite dyke		
		40.00	115.50	ZCS	grey-green, chlorite 25%, sericite 25%, sheared bands, qv's 5%		
		115.50	137.50	Z/MB	interbedded schists and metabasites		
		137.50	144.70	DI	diorite dyke, black		
		144.70	202.80	Z/MB	interbedded schists and metabasites		
		202.80	285.00	ММВ	dark grey-green to grey, medium grain, slightly foliated to massive; 236.7-239.6m phyllite intercalation; minor qtz and carbonate veinlets		
		285.00	340.05	ZCS	grey, late qtz(+carb) veins, qv's 5%		
		340.05	340.50	MIN	coarse grained py + po dominate, minor cpy; cpy also as short veinlets and blebs in qtz		
		340.50	341.10	ZSC	altered phyllite, bleached, light grey-green-beige; 1% sulphides		
	0	341.10	341.40	MIN	coarse grained py + po dominate, minor cpy; cpy also as short veinlets and blebs in qtz		
	one	341.40	380.30	ZSC	altered phyllite, bleached, light grey-green-beige; 2% sulphides		
	d Z	380.30	380.70	MIN	po dominant stringer ore (380.4-380.5m semi-massive), minor cpy		
	lise	380.70	386.50	ZSC	altered phyllite, bleached, light grey-green-beige; 1% sulphides		
	era	386 50	287.25	7.25	semi-massive po>>py, cpy, bands sheared and well folded in detail;		
	۸in	380.30	307.25	MIN	minor cpy (short veinlets in Qtz)		
	~	387.25 421.80		ZSC	strongly altered schists, light beige-green; 5% sulphides		
		421.80	422.40	MIN	po-cpy stringer ore, including 20cm of Co-mineralization at 422.2m		
		422.40	441.80	ZCSQ	dark grey to grey-green phyllite, frequent qtz intercalations and late qtz veins, qv's 3%		
		441.80 442.50		MIN	disseminated cpy>po mineralization,		
		442.50	483.80	ZCS	grey-green phyllite, occasional qtz intercalations (up to 5%)		
Та	ble 2	2 Summary drill hole log - TIDD0			2. To be sampled 365m – 415m		
		From (m)	To (m)	Lithology	Description		
		0.00	0.50	OB	overburden		
		0.50	82.05	ZCS	gray-green to dark gray chloritic to sericitic schist		
		82.05	82.05 85.80 MMB metabasite		metabasite		
		85.80	102.00	ZCS	dark gray to green-gray chloritic to sericitic schist		
		102.00	177.20	ZCSQ	dark gray to green-gray chloritic to sericitic schist with frequent quartz intercalations at 145-161.2m and 172-177.2m		
		177.20	195.00	MMB	metabasite		
		195.00	255.00	ZCS	dark gray to green-gray chloritic to sericitic schist with minor quartz		
		255.00	269.40	ZCS	light gray-green sericitic schists		
		269.40	321.80	ZCS	dark gray to gray-green chloritic to sericitic schist with minor quartz		
		321.80	322.50	QV	quartz with minor schist intercalations		
		322.50	358.00	ZCS	dark gray to green-gray chloritic to sericitic schist with minor quartz		
		358.00	369.30	ZCSQ	dark gray to green-gray chloritic to sericitic schist with frequent quartz		
	eq	369.30	369.70	MIN	chloritic to sericitic schists with chalcopyrite mineralization		
	Mineralise	369.70	388.30	ZCSQ	dark gray to green-gray chloritic to sericitic schist with frequent quartz		
		388.30	388.85	MIN	chloritic to sericitic schists with pyrrhotite and chalcopyrite mineralization		
		388.85	412.75		dark gray to gray-green chloritic to sericitic schist with minor quartz		
┢		412.75	413.20		chioritic to sericitic schists with pyrrhotite and chalcopyrite mineralization		
		413.20	490.40		Diorite/Granodiorite dyke		
		490.40	496.80	705	dark gray to gray-green chloritic to sericitic schist with minor quartz veins		
		471.20		203	and bray to gray breen emonute to sendule sends with minor quartz veills		

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#### Highlights

- Alcoutim Phase 1 Exploration Program successfully completed
- Hole 3 extended a further 70m to 1,274m before reaching rig capacity
- Licence renewal application has been submitted to the DGEG (Portuguese Directorate of Energy and Geology)

## Hole ALFP003

Hole 3 of Phase 1 exploration at Alcoutim has been completed at 1,274.75m, with the hole intersecting several intervals of blebby and disseminated chalcopyrite and pyrite that are associated with intense shearing and deformation.

Hole 3 was initially halted in an intense fault zone at 1,206.55m to complete the Down Hole Electromagnetic ("DHEM") survey. Interpretation of the DHEM data showed a weak to moderate EM conductor located below the hole. As such, Auroch extended the hole a further 70m before reaching the capacity of the diamond rig.

With the completion of Hole 3, Auroch has completed its Phase 1 Exploration program and therefore the required licence condition of 3,000m of drilling. A license renewal application for the Alcoutim Exploration Licence has been submitted to the DGEG.

Whilst Auroch awaits the license renewal, the Company will continue to study results from its Phase 1 program to identify further geophysical targets across the licence that will comprise the Phase 2 drilling program. Phase 2 exploration will commence as soon as the Licence renewal has been received.



Photo of chalcopyrite mineralisation from ALFP003 at 727.0m

Blebby and disseminated chalcopyrite associated with narrow quartz chlorite deformation zone





Current and historical drill collar locations from the Alcoutim Licence

#### Hole collared at 620739 E and 4144842N- -88° towards 220° - hole designed to lift to --70° at target

0.00 – 491.75	Flysch represented by interbedded greywackes and argillites, from 470m argillite are dominant, becoming gradually darker towards bottom; typical fossil rich horizon at the bottom of flysch.
491.75 - 583.00m	Dark argillites and minor siltstones with common 2% pyrite disseminated and in stratabound blebs of several centimetres; grey and green tuffitic beds increasing towards bottom. Two major shear/fault zones 531.50-533.70m and 556.75-570.60m.
583.00 - 598.50m	Siltstones and minor greywackes with beds of tuffites on top of unit.
598.50 - 659.50m	Undifferentiated volcanics intercalated argillitic, light grey and green, silicified in parts.
659.50 – 668.15m	Green and purple shale of the Borra De Vinho Formation typical of the upper VSC
668.15 – 953.00m	Same previous packet (und. volcanics and argillites light grey/green with green and purple shales) repeated 6 times, mainly through shearing with intense quartz veining and black argilites in last 2 repetitions of this unit; major shear zone with high Qz veining 935.70-948.90m
953.00-983.00m	Argillites and siltites with typical fóssil occurrences on the bottom of unit
983.00-1012.00m	Black argillites and grey siltites with minor tuffitic beds, disseminated pyrite ~5% becoming richer (up tp 15%) towards bottom of unit. Fault lower contact
1012.00-1181.60m	Dark grey argillites and grey siltites interbedded with occasional greywacke beds, major faults 1012.00-1015.30, 1029.00-1034.50, 1054.00-1056.50 and 1133.25-1138.00m
1181.60-1210.15m	Dark grey argillites and siltites with fóssil horizon 1197.00-1198.90m. Shear/fault zone from 1201.45 to bottom with intense quartz veining in parts and pyrite+chalcopyrite from 1202.35-1203.25m.
1210.15-1274.75m (EOH)	Interbedded dark grey argillites and medium grain greywackes with wide variable bed thicknesses. Rare pyrite crystals mainly associated with the greywackes. Younging up polarity when visible, S0 80-56°TCA. Shear zones with visible deformation from 1261m.



## About Auroch Minerals

Auroch Minerals (ASX: AOU) is primarily focusing on the exploration of metals crucial to the Renewable Energy Industry. The Company is specifically targeting Cobalt and Lithium, both used in the production of Li ion batteries, and Copper.

It is the Company's vision to add shareholder value through the identification, exploration and subsequent development of assets located in under-explored provinces that contain historic production and prospective geology. Auroch's current portfolio of projects contains three highly prospective exploration projects;

Tisová Cobalt Copper Gold Project located in the Czech Republic, where the Company currently holds a nine-month option to acquire 100% of the project as announced July 2017. Tisová is located in the heart of the European industrial hub, has a long history of copper production with mine infrastructure in place. Recent sampling carried out by Auroch has confirmed the presence of Cobalt. Auroch is currently carrying out its initial drilling program.

The Company is also earning 75% of the Alcoutim Copper Zinc Project in Eastern Portugal. Alcoutim is located on one of the world's most significant mining districts, the Iberian Pyrite Belt (IPB). Known as the Land of Giants, the IPB is renowned for its poly-metallic (Copper and Zinc dominant) Volcanic Massive Sulphide (VMS) deposits. Home to three Super Giant deposits (Rio Tinto, Neves Corvo and Aljustrel) and 10 Giant deposits, the area hosts over 80 known deposits containing resources totalling over 1,700 Million Tonnes. Auroch's Alcoutim Project is located immediately along strike of the Super Giant Neves Corvo deposit.

The Company holds 100% of the Karibib Lithium Project, located in Namibia, which provides Auroch with immediate upside potential to the rapidly evolving lithium market. Karibib is situated next door to two of Namibia's high-grade historic lithium producing mines, Rubikon and Helikon.

For further information visit <u>www.aurochminerals.com</u> or contact:

## Auroch Minerals Limited

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#### **Competent Persons Statement**

The information in this report that relates to Exploration Results is based on information compiled by Dr. Andrew Tunks and represents an accurate representation of the available data. Dr. Tunks (Member Australian Institute Geoscientists) is the Company's Chief Executive Officer and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Dr Tunks consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



## **Tisová Section**

#### JORC Code, 2012 Edition – Table 1 Section 1 Sampling Techniques and Data

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

Criteria	Commentary
Sampling techniques	Grab samples collected from waste dumps associated with
	Tisová mine by Geologist under contract to Auroch Minerals
	• Samples were collected from zones suspected to be mineralised
	<ul> <li>Samples were not collected on a grid.</li> </ul>
Drilling techniques	• Drilling is standard HQ Diamond coring, size reduction to NQ
	core is considered if drilling conditions are difficult
Drill sample recovery	Recovery is being logged onsite
Logging	All holes are logged by geologist
Sub-sampling techniques and	• Core to be sampled will be split. One sample retained – one
sample preparation	sample to lab for assay
	• There is no information on sub-sampling or sample preparation
	for the historic drilling
Quality of assay data and	<ul> <li>No new sampling reported</li> </ul>
laboratory tests	
Verification of sampling &	<ul> <li>No new sampling reported</li> </ul>
assaying	<ul> <li>There is no information on QAQC for historic data</li> </ul>
Location of data points	<ul> <li>Drill hole collar are shown on map and in table below</li> </ul>
	<ul> <li>data will be transformed in UTM WGS 84 Zone 33 North during</li> </ul>
	digital capture of historic records
Data spacing and	<ul> <li>Not relevant for sampling by Auroch</li> </ul>
distribution	• Previous historic drilling was completed on a variety of scales
	appropriate for the mining techniques and methods used in
	Czechoslovakia at the time of operation
Orientation of data in	• Auroch samples collected to test a variety of ore types there are
relation to geological	NOT spatially significant and bear NO relationship to the true
structure	nature of the orebodies
	<ul> <li>Drilling is conducted at close to 90 degrees to geological</li> </ul>
	structure, drilling information is backed up by extensive
	underground mapping (Figure 2)
Sample security	<ul> <li>Samples were collected by field geologist, numbered and</li> </ul>
	bagged and delivered immediately to assay laboratory
Audits or reviews	Not completed

Hole_ID	Depth	Datum	East	North	RL	Dip	Azi (True)
TIDD002	496.8	S-JTSK (Krovak)	-874007	-993414	734	-80	113
TIDD003	483.8	S-JTSK (Krovak)	-874200	-993655	697	-90	369



### Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)					
Criteria	Commentary				
<i>Mineral tenement and land tenure status</i>	<ul> <li>Tisová exploration rights held under Tisová license, No.77533/ENV/14, 2091/530/14; issued 28th May 2015, valid till 30.6.2020</li> <li>There are three Exploration Licence applications in the Czech Republic – See Figure 2.</li> <li>There are no guarantee applications will be granted</li> </ul>				
Exploration done by other parties	<ul> <li>Tisová was an operating mine between 1959 to 1973</li> <li>Production was 561Kt of ore @ 0.68% Cu as detailed in 1984 P. Kozubek et al. Tisová Copper Mine –Final Report Rudné doly Příbram np.</li> </ul>				
Geology	The deposit is formed by a number of concordant ore lenses within a sequence of phyllitic metasediments, with interbedded metabasic layers, between the Karlovy Vary and the Smrciny granite plutons. The metasediments are assigned to the Kraslice sequence of the upper part of the Raun Group of Saxothuringikum of Upper Cambrian age. Sulfide horizons containing the orebodies occurred in the lower part of the sequence above the quartzite horizon and below the metabasic rocks. The host rocks are characterized by chlorite-sericite and sericite-chlorite phyllites. Geology description from: <b>1981</b> ; V. Oruzinsky and B. Kribek; Extractable Organic Compounds associated with the Metamorphosed Stratiform Cu- Deposit of Tisova Czechoslvakia; Minerallium Deposita V16 p437-446				
Drill hole Information	See table of hole collar details				
Data aggregation methods	No data has been aggregated				
Relationship between mineralisation widths and intercept lengths	<ul> <li>No mineralised intercepts are presented.</li> <li>However as can be seen from sections presented in the report surface drilling is close to optimal when intersecting the shallowly dipping ore bodies indicating intersection widths of sulphides are close to true width</li> </ul>				
Diagrams	See report				
Balanced reporting	Complete summary logs of both holes are presented				
Other substantive exploration data	<ul> <li>The Tisová Cu mine operated over a long period and was detailed in the final report. 1984 P. Kozubek et al. Tisová Copper Mine –Final Report Rudné doly Příbram np.</li> <li>However, this report refers to the copper mining history and exploration and Tisová – other elements such as Cobalt and Gold were not regularly sampled for or documented</li> </ul>				
Further work	Ongoing drilling				



## **ALCOUTIM SECTION**

JORC Code, 2012 Edition

#### Table 1 - Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)				
Criteria	Commentary			
Sampling techniques	<ul> <li>No sampling is reported</li> </ul>			
Drilling techniques	<ul> <li>Drilling is standard diamond drilling</li> </ul>			
	Hole diameter commences at HQ and reduces at depth to NQ			
	and BQ as necessary			
Drill sample recovery	All drilling is logged for recovery			
Logging	<ul> <li>All logging is carried out by a team of Geologists who are</li> </ul>			
	supervising the drilling on a daily basis			
Sub-sampling techniques	<ul> <li>No sampling is reported</li> </ul>			
and sample preparation				
Quality of assay data and	<ul> <li>No assaying is reported</li> </ul>			
laboratory tests				
Verification of sampling &	No assaying is reported			
assaying				
Location of data points	<ul> <li>Coordinates in report are given in in WGS84 Zone 29N</li> </ul>			
	• ALFP003 is collared at 620739 E and 4144842N – WGS 84 29			
Data spacing and	No data is reported			
distribution				
Orientation of data in	Holes are collared subvertical to allow for lifting during the			
relation to geological	drilling process.			
structure	• At intersection with the target stratigraphy holes are close to			
	orthogonal with the geology			
Sample security	No sampling reported			
Audits or reviews	No audits or review undertaken			
Section 2 Paparting of Exploration Posults				

#### Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)				
Criteria	Commentary			
<i>Mineral tenement and land tenure status</i>	<ul> <li>Alcoutim Licence is held by Bolt Resource</li> <li>Auroch are in phase one of a JV earning into 65% of Licence</li> <li>Licence is currently pending a renewal by the DGEG Portugal 29/09/2017</li> <li>All documents relevant to licence renewal have been submitted to the DGEG and the Company is awaiting DGEG confirmation of the renewal</li> </ul>			
Exploration done by other parties	None reported			
Geology	<ul> <li>The Alcoutim Project lies within the Iberian Pyrite Belt a home to significant Volcanic Hosted Massive Sulphide mineralisation</li> <li>The targeted sequence is known as the Volcanic Sedimentary Complex -a bi-modal volcanic sedimentary sequence containing</li> </ul>			

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Drill hole Information	<ul> <li>rhyolites, basalts, shales and marine clastic sediments</li> <li>The VCS is unconformably overlain by the Baixo Alentejano Flysch Group (Locally the Mértola Formation) a sequence of interbedded shales, greywackes and siltstones</li> </ul>
	Holes are collared subvertical to allow for lifting during the drilling process.
Data aggregation methods	<ul> <li>No data aggregation has been used</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>Only disseminated mineralisation is reported from logging at this stage.</li> <li>No assaying has been completed at this stage and the core has not yet been cut and sampled.</li> <li>Logging indicates that the bedding and veins are at a high angle to the core so drilled widths are close to true thickness. At this stage no intercepts are reported</li> </ul>
Diagrams	See report
Balanced reporting	See Report
Other substantive exploration	<ul> <li>Preliminary DHEM results are discussed in report</li> <li>The DHEM is collected by Terratech Geophysical Services a German Consultancy</li> <li>Equipment used is a Digi Atlantis 3 component system for measuring TEM, MMR and Magnetics</li> </ul>