OSPREY MINING

HIGH GRADE TIN IN CORNWALL, UK

SEPTEMBER 2020

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COMPETENT PERSON

All technical information contained in the Document has been reviewed and approved for disclosure by Mark Owen BSc, MSc, CGeol, EurGeol, FGS; Independent Geological Consultant to the Company a Qualified Person under the regulations of N43-101, and a Competent Person for The London Stock Exchange regulatory requirements.

THE GREAT WHEAL VOR

THE GREAT INVESTMENT OPPORTUNITY

RAISING £1.8M for:
Phase 1 diamond drilling program from Q2 2021, ~7,500m in 30 – 40 shallow holes, testing for high grade tin mineralisation (>1.4% Sn) to lead to Indicated Resource Statement – subject to further drilling, scoping study and testwork proceed to Pre-feasibility Study within 2 years

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Historic production grades of >5.5% Sn – even at an assumed current production grade of 2% Sn this would be among the top 3 tin mines by grade in the world today

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Extensive mineralisation remaining in the ground – mining stopped in the 1870s not through lack of tin but due to litigation between mineral owners

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First time in history that the Project can be advanced on an integrated basis to commercial production (agreements achieved with necessary mineral ownerships)

TECHNOLOGY SUPERCYCLE driving global surge in demand for tin – forecasts of deficits by 2022

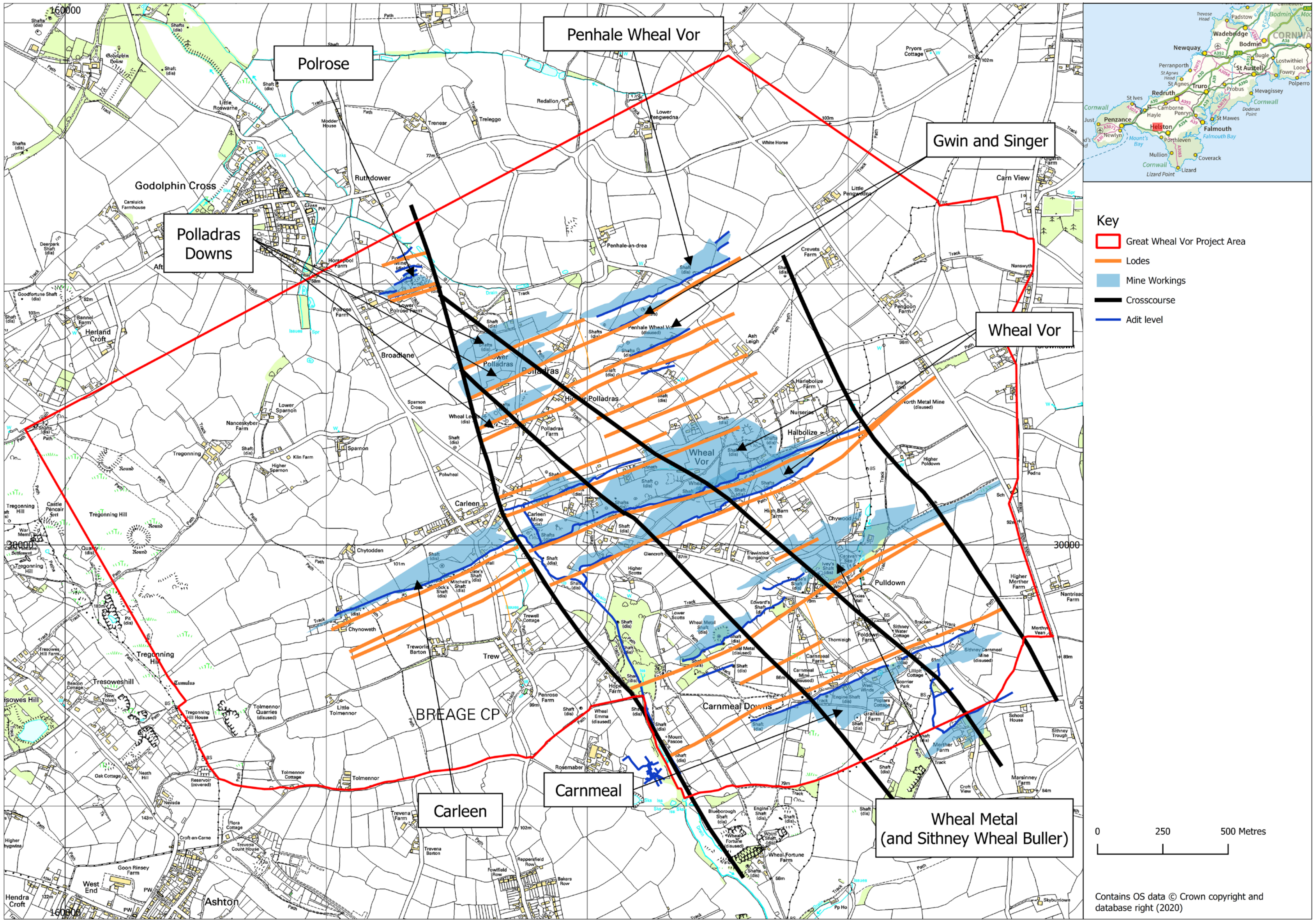
CLEAN TIN – A STRATEGIC METAL ESSENTIAL TO THE UK ECONOMY

THE GREAT WHEAL VOR PROJECT CORNWALL, UK

“the richest locality for tin that has ever been discovered in any part of the world”
(Prof B H Thomas, 1817)

“the richest in tin of all the Cornish mines, probably the richest tin mine which has ever been worked in the world” *(Hamilton Jenkin, writing in 1929)*

GREAT WHEAL VOR PROJECT AREA : HISTORIC MINING



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HIGH GRADE ORE

- **The Great Wheal Vor –** A group of former producing tin mines in the Mining District of Breage, Cornwall, including the renowned Wheal Vor and Wheal Metal mines, In the mid 1800's it become the most productive tin mine in the world - It even had its own smelter

- **High grade ore –** Project Area very rich in high grade tin mineralisation: between 1812 and 1848 Wheal Vor recorded average grades in excess of 3% Sn, with a cut off grade of 1.35%, with Wheal Metal peaking at 5.5% Sn – group estimated to have produced over 42,000 tonnnes of tin metal *(source: John ("Jack") H Trounson ASCM, AMINN reporting to Camborne Tin Limited in 1963)* Copper was also produced

- Closed in 1877 not through lack of potential resource but due to **protracted litigation** between mineral owners, the inability of technology at that time to extract the ore at depth, and falls in the tin price. During the notorious 20 years of Chancery litigation, the illegal operators, sensing they would lose the case, "mined the eyes" out of the resource against a deadline, leaving **very significant tonnage of high grade ore remaining in the ground**

- Mineralogy predominantly of quartz, tourmaline, chlorite and cassiterite; low percentage pyrite and generally low sulphide content - **low processing risk** - industry standard technology likely to achieve viable recovery rate, subject to the results of a detailed scoping study and metallurgical testwork

GRADE COMPARISON WITH OTHER TIN PROJECTS

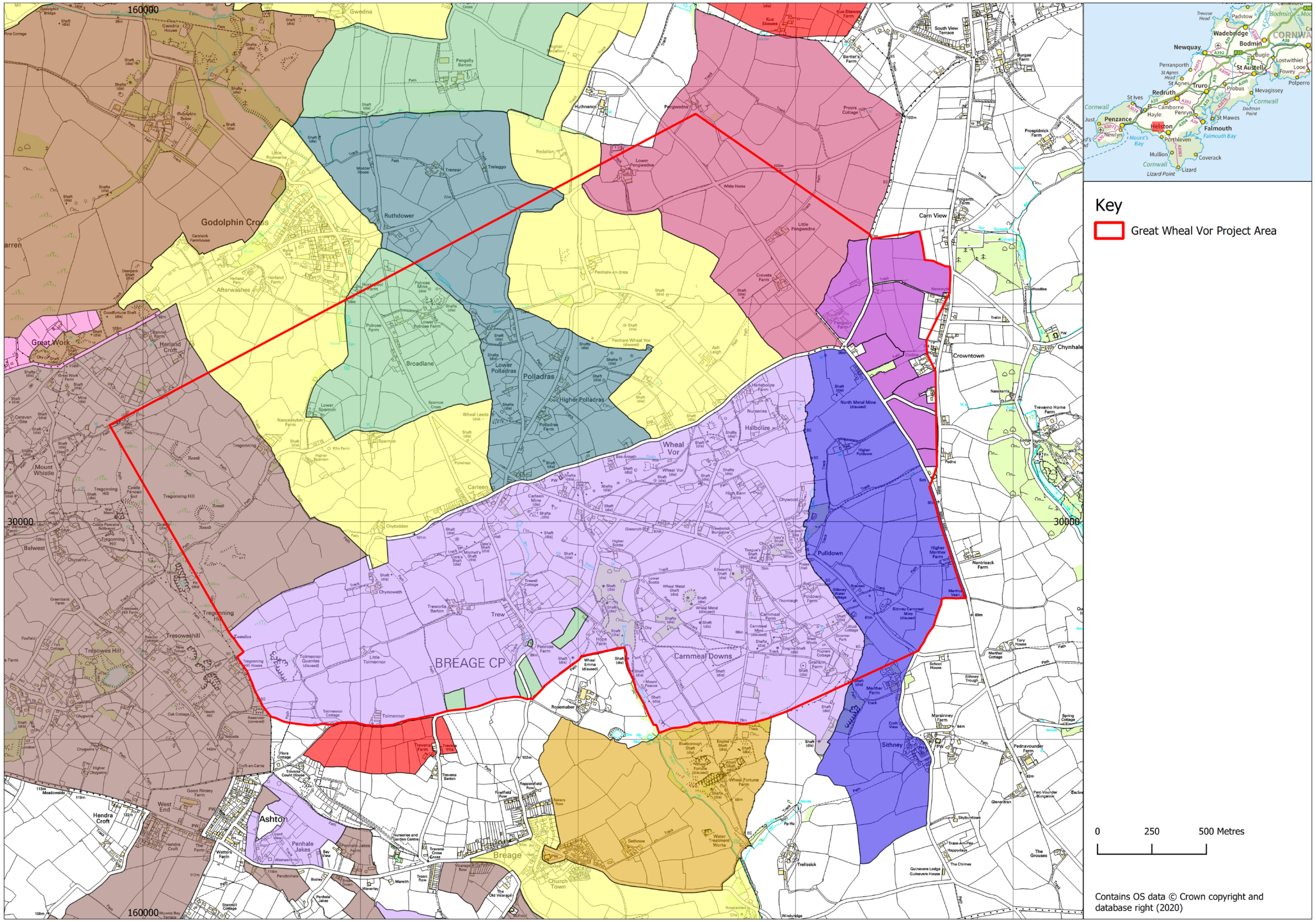
Company	Country	Grade (%Sn)
Alphamin Resources	DRC	4.52% (in production)
Minsur	Peru	2.67% (in production)
Osprey Mining	Cornwall, UK	2.00% (assumed grade)
Cornish Metals (formerly Strongbow)	Cornwall, UK	1.81%
Metals X	Tasmania	1.46% (in production)
Stellar Resources	Tasmania	1.32%
Cornwall Resources	Cornwall, UK	1.17%
GOK Deputatsky CJSC	Russia	1.15%
Kasbah Resources	Morocco	0.90%

Taking into account Trounson's data on historic production grades (>5.5% Sn) an assumption has been made that a head grade of at least 2% Sn could be achievable by Osprey. Even at this grade, the Great Wheal Vor mines would, if being mined today, be among the top three highest grade tin mines in the world: for illustrative purposes only see comparison table

“...when they were abandoned there was still a great amount of entirely unexplored ground in the very heart of the area and there were lodes known at surface on which little or nothing had been done in depth.”

(Trounson, 1963 : reporting on the Great Wheal Vor mines)

GREAT WHEAL VOR PROJECT AREA : MINERAL RIGHTS



Colour blocks represent different mineral rights ownership areas within the Project Area

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PROGRESS SO FAR

- **High barrier to advance the Project now overcome by Osprey -** the multiplicity of mineral rights owners in the Project Area (as shown on previous page Mineral Rights Plan) and the historic litigation between them has prevented the Project ever being advanced on an integrated basis. Excepting the yellow shaded areas on the Plan, which are not currently required, Osprey has now secured **standardised agreements with all necessary mineral owners to advance the Project through exploration to commercial production**

- **Phase 1, 2, and 3 (P1, P2, P3) drilling programs finalised by Osprey –** modelling completed in Leapfrog: diamond drilling of approx total - 7,500 m in 30-40 P1 drill holes; dynamic program with additional P2 and P3 holes plotted to maximise potential resource; collar locations plotted and Site Access Report completed – focus is on relatively shallow holes and extensions of known mineralisation, **with the aim of testing for high grade tin mineralisation (>1.4% Sn) and achieving an Indicated resource**

- Osprey has full access to extensive **original unpublished data and reports written by Trounson in the 1960s on his recommended exploration programs** for these mines, yet to be implemented, giving Osprey significant savings in time and costs

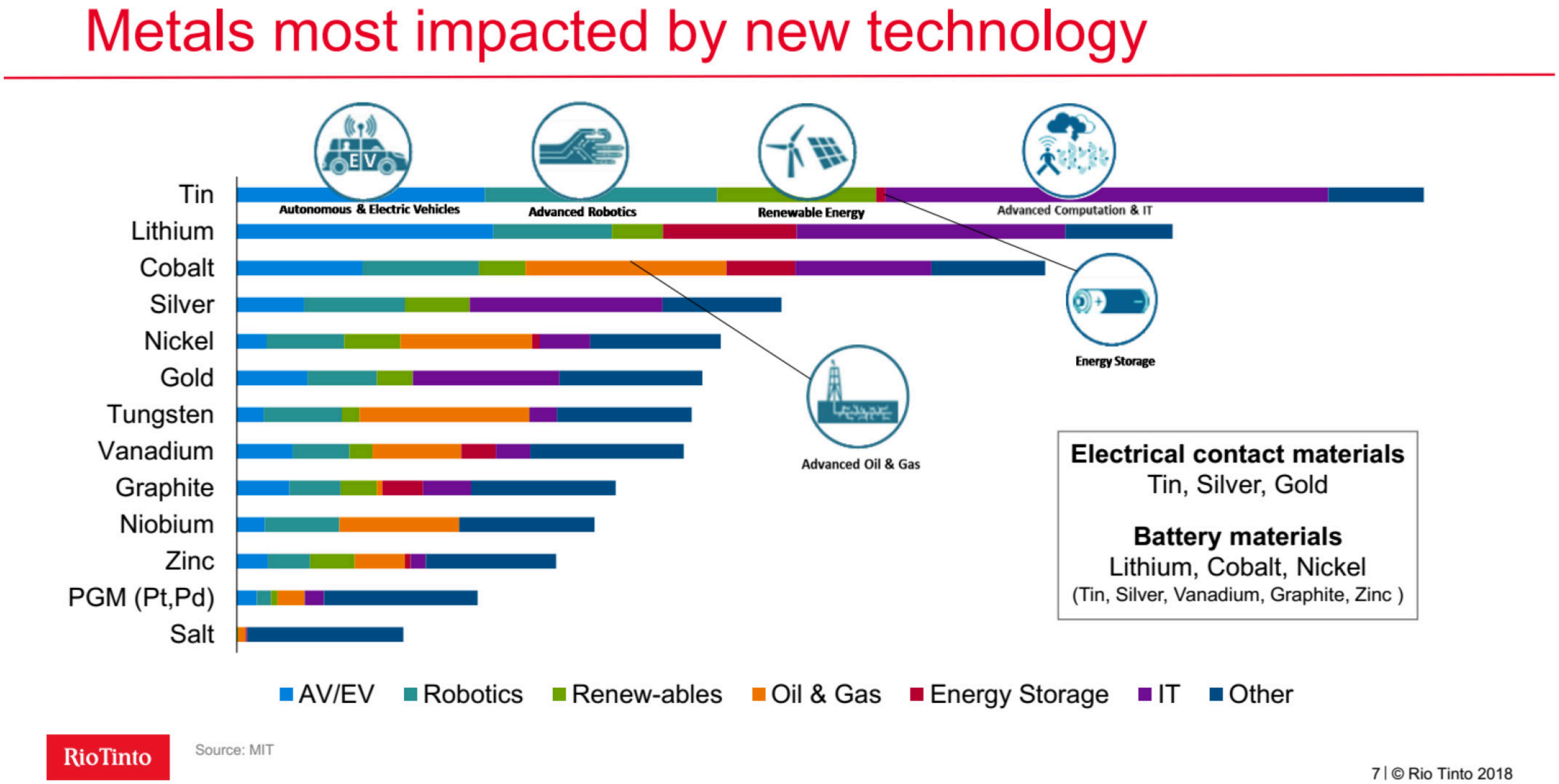
- **Desktop research:** extensive data acquisition – review of historical data, material and samples from sources including Camborne School of Mines, British Geological Society, Kresen Kernow (formerly Cornwall Records Office), Natural History Museum, Royal Cornwall Museum and private collections

- **Camborne School of Mines, University of Exeter research project 2019 –** led by Dr Robin Shail, senior lecturer in geology at CSM, with a team of consultants and geologists including Poppy Edgecombe BSc, MSc and Mark Owen, independent Geological Adviser to Osprey. This work has contributed to direct verification of collar locations, and understanding of controls to grade distribution within the mineralised system

- **SRK Exploration Services Limited** contracted to provide technical support to Osprey: Project Manager Jeremy Cole of SRK ES

- Clear strategy in place to advance quickly to Pre-Feasibility Study and Definitive Feasibility Study; **TECHNOLOGY SUPERCYCLE** predicted by Rio Tinto commissioned study 2018 (MIT) and International Tin Association research 2020, driving a surge in demand for tin within next 3-5 years, coinciding with Osprey's planned timeframe to **COMMERCIAL PRODUCTION**

Massachusetts Institute of Technology (MIT) analysis for **Rio Tinto** in 2018 identified tin as the metal most likely to be positively impacted by the electric vehicle and energy storage revolution, with other key drivers of demand being advanced robotics, computation, climate change and the Technology of Things



POSITIVE MARKET DISRUPTION

The tin market is small (~360,000 tpy) but "if MIT is right in its findings, there is a slow-burn bull fuse smoking away in the tiny tin market" *(The National: 2018)* and the International Tin Association **(ITA)** New Technologies Report 2020 reinforces this assessment

ITA : New Technologies Report 2020 supports prediction of the **TECHNOLOGY SUPERCYCLE** within the next 3-5 years driving a surge in global demand for tin as a necessary component in:

- energy uses and technologies
- solder – the "glue which binds circuit boards together"
- battery technologies – tin is a performance enhancing component in all three generations of advanced anode materials roadmapped to 2030, plus solid state technologies
- utility power storage – liquid metal technologies, catalyst in redox flow batteries
- solar PV
- thermoelectric materials
- hydrogen generation
- fuel cells
- carbon capture using tin as a catalyst to convert climate change gases to beneficial chemicals

In addition to the disruptive effect on the tin market caused by new technologies, there is stable demand and historic steady growth at 2% to 3% pa in **conventional applications,** including electronic and industrial solder, chemicals, tinplate, float glass, brass and bronze

Thin supply pipeline: depletion of existing mine reserves and recent lack of investment in early stage exploration projects indicate that **global supply is unlikely to keep pace with future demand.** Forecasters expect tin supply to **move into deficit by 2022,** with demand continuing to increase and global supply continuing to fall, unless new production comes on stream

A DOMESTIC SUPPLY OF CLEAN TIN

- **75% of global tin production from Asia** (China, Myanmar, Indonesia) – but instances of environmental non-compliance and ongoing trade wars threaten supply chains. China's 13th Five-Year Plan declared 2016 to 2020 a "decisive battle period" for the nonferrous metal industry *(FP Analytics Special Report: Mining the Future- How China is set to dominate the next Industrial Revolution; May 2019)*

- Tin is already **designated as a critical mineral by both China and the US,** and is on the edge of criticality in the EU raw material risk matrix: there is currently no primary tin production in North America or in Europe except Russia (just 2.7 ktpa in 2019)

- **Cornwall** is well placed through the tonnage and high grades of its tin resources to re-take its former position as **Europe's leading tin producing area**

- The US and China are **"in the foothills of a Cold War"** *(Henry Kissinger, November 2019)* and since that statement the Coronavirus pandemic has hardened attitudes against China: the Five Eyes intelligence group (US, UK, Australia, Canada and New Zealand) has stated that China mounted **"an assault on international transparency"**

- **Tin is essential to build and power new generation technology.** Cornwall has a feasible domestic resource and can mitigate total UK dependence on tin imports. UK Government target of net-zero vehicle emissions by 2040 is increasing the demand for tin

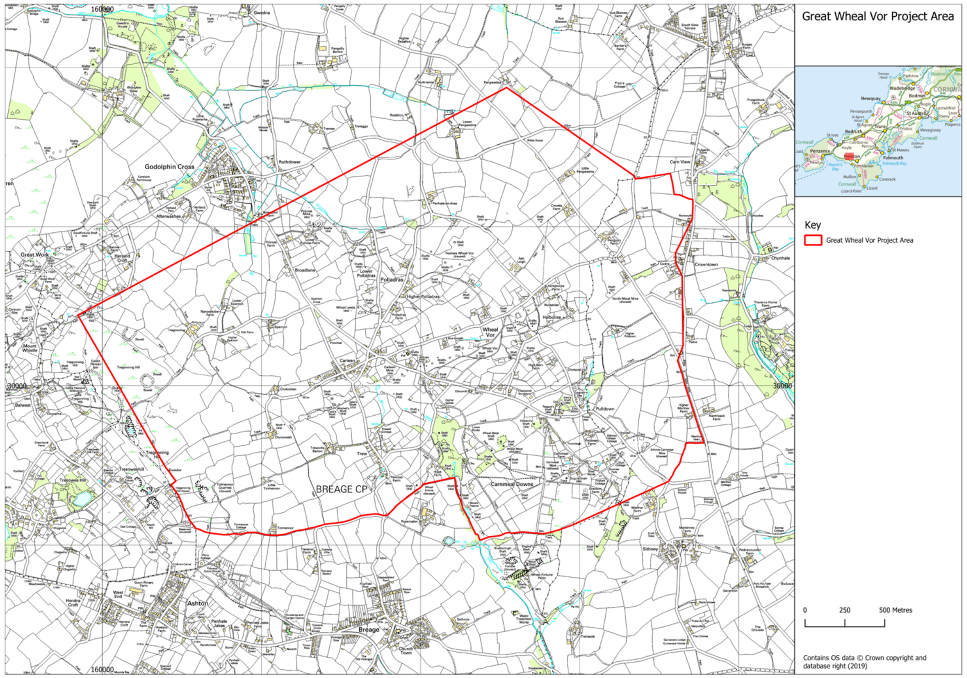
- In countries with a high tolerance of political and environmental risk, mining operations may fund armed conflict and exploit workers, including women and children. Osprey takes the view that it is in the UK's national economic interest to develop a domestic source of supply of **sustainably produced clean tin** compliant with UK law, health and safety best practice, and with minimal environmental impact

- Osprey stands for **GREEN MINING –** from an environmental standpoint, operations will be on a zero-harm, maximum sustainability basis; minimal surface construction; primary processing underground; pre-concentrate trucked to nearby offsite multi-use processing hub; all operations utilising sustainable energy wherever feasible

- In addition to compliance with all applicable laws, Osprey will, as regards corporate governance, environmental performance, health and safety, community relations and protection of human rights, adopt and report in accordance with the **ITA Code of Conduct for tin producers (Responsible Minerals Initiative) aligning with OECD Due Diligence Guidance and new EU Minerals Supply Chain Due Diligence Regulation and upcoming LME requirements**

LOCAL AND GOVERNMENT SUPPORT

- The Project Area is centred on the village of Carleen – extends approx **3km E-W by 2.5km N-S (7.5km²)**
- Brownfield site, lightly populated, with **excellent infrastructure** and easy access to good roads and necessary utilities
- Mining in Cornwall has **strong support** from the resident **community** and the 2 key **regulators** (Environment Agency and Cornwall Council as Mineral Planning Authority)
- **UK central government** (DIT) and the **Cornwall LEP** (Local Enterprise Partnership) announced at PDAC 2019 that Mining in Cornwall has been designated an HPO - a **High Potential Opportunity for the UK economy**
- **Cornwall Council Minerals Safeguarding Development Plan adopted 2018, specifically safeguards** the mineral resources and infrastructure in the **Project Area** from sterilisation by surface development which would conflict with mineral use of site



"Cornwall has a global reputation for exporting expertise and knowledge in mining and the Council is clear in its desire to support this sector to re-start production in Cornwall and bring with it much needed high value jobs"

(Bob Egerton, Cornwall Council Cabinet portfolio holder for planning and economy, in 2019, on the Council's overwhelming vote in favour of investing GBP 1m in Strongbow Exploration (now Cornish Metals) as part of its proposed AIM listing)

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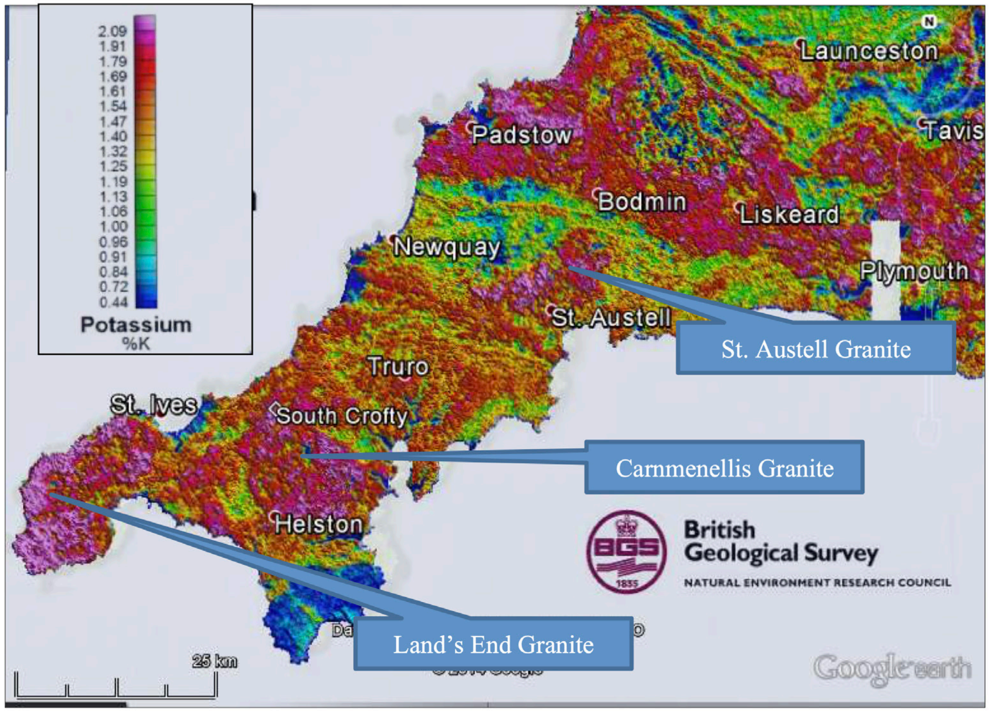
Airborne radiometric map of southwest England showing potassium (K) distribution



Source: British Geological Survey "TELLUS SW PROJECT" overlain on Google Earth

The geology of Cornwall is dominated by Paleozoic granitic intrusions which are part of the **Cornubian batholith** and the metasedimentary and metavolcanic rocks, known locally as "killas" that form the metamorphic aureole and host rocks of the intrusions. This assemblage was formed in the Variscan orogenic event. Crustal thickening, resulting from deformation of the Devonian flysch-type sediments and associated volcanics during the initial phases of the **Variscan Orogeny in the Devonian and Carboniferous periods,** was followed by lithospheric extension and anatexis of metasediments to form **Cornubian granitoid magmas in the Permian period** *(Simons et al. 2016)*

The Cornubian granite is enriched with various elements including **potassium, lithium, uranium, thorium, tin, tungsten, copper and rare earths.** It is classified as a high-heat producing (HHP) granite due to its enrichment in radiogenic elements such as potassium, uranium and thorium, with strong thermal activity. The **BGS TELLUS survey of 2014** demonstrated the high potassium enrichment of the Cornubian granite, including the **two granites of the Project Area – Carnmenellis to the east and Tregonning-Godolphin to the west**

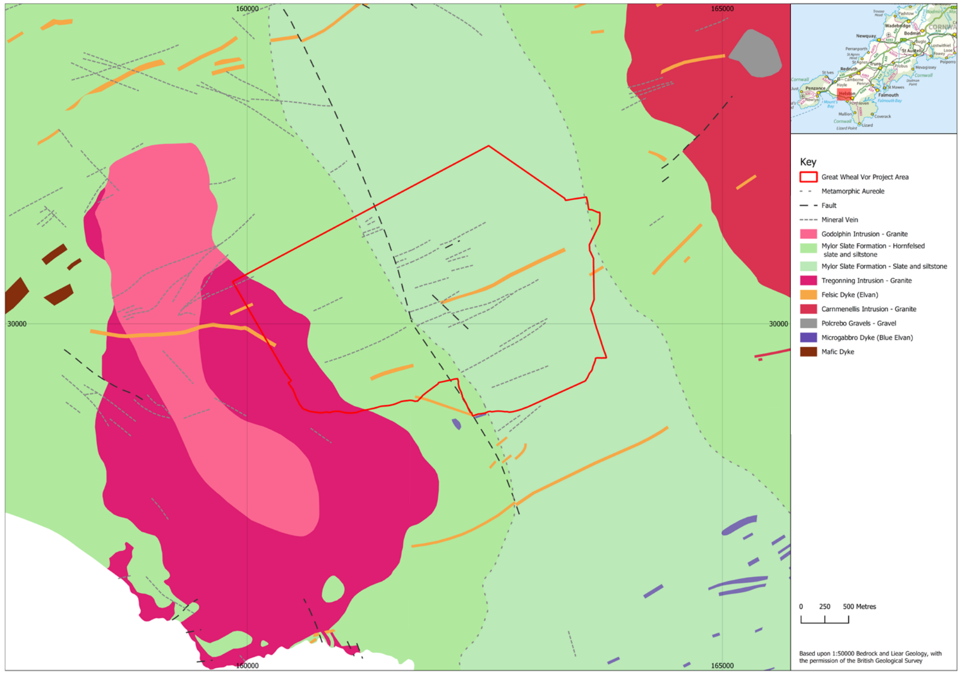
LOCAL GEOLOGY

- **The mines of the Project Area** are within a trough of metasediments (killas) between the **granites of Tregonning - Godolphin to the west and Carnmenellis to the east.** The metasediments are slates and metasiltstones of the **Mylor Slate Formation**

- **The Godolphin and Carnmenellis** granites are classified as **biotite** granites: the **Tregonning granite is a topaz granite** *(Simons et al. 2016)*. Topaz granites are rare in Cornwall accounting for approx 1% of outcrop and are also enriched in **lithium**

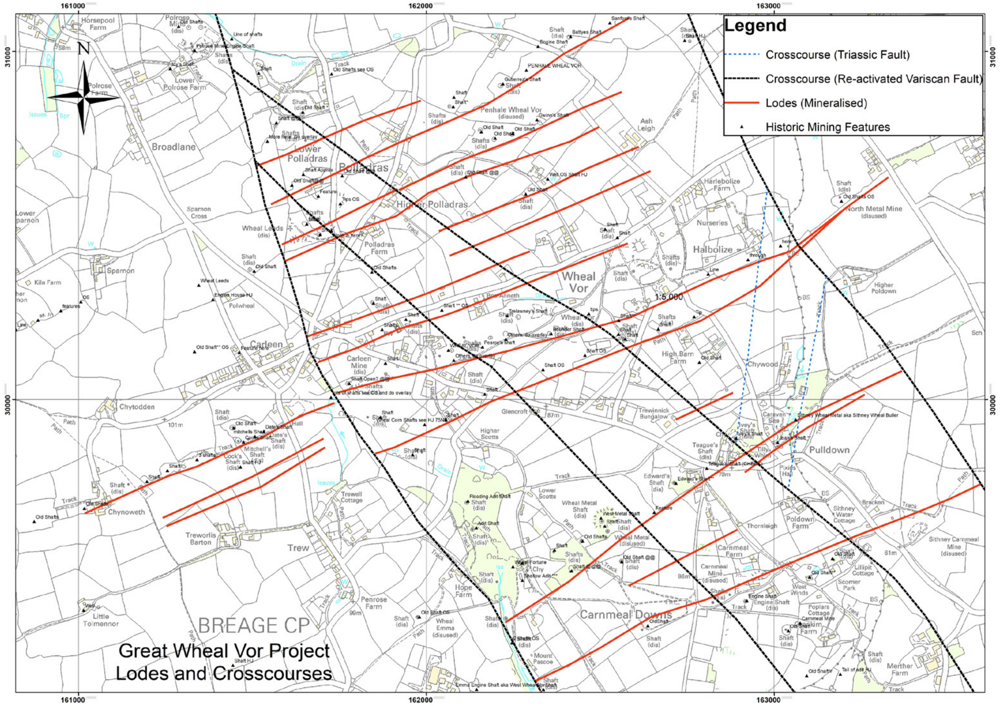
- **Heat** from the granite intrusions locally **hornfelsed** the Mylor Slate Formation close to the contacts. Contemporaneously a series of **ENE-WSW extensional fault systems** developed between earlier **NW-SE Variscan transfer faults** which were also partly reactivated. Hydrothermal fluids emanating from the granites carried significant levels of dissolved metals which precipitated out along the ENE-WSW trending faults forming **significant ore bodies (lodes)**

- **These mineralised lodes cross cut the metasediments and granites and dip relatively steeply to the N or S.** Along the same structural trend, a series of rhyolite and quartz porphyry dykes (locally known as **"elvans"**) also intruded the granite and metasediments and formed **additional pathways for mineralisation**

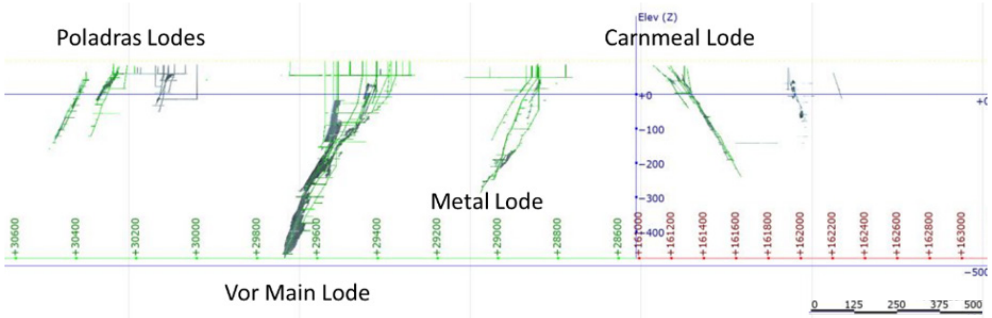


GEOLOGICAL MAP OF PROJECT AREA

PROJECT AREA GEOLOGY



Map and cross-section through the Project Area
(source: Osprey Mining 2019)



Cross Section through mine workings on major lodes within the Great Wheal Vor Project Area Section azimuth 320° looking NE

- **At least 21 known lodes** occur within the Project Area, all of which strike ENE-WSW. With the exception of Carnmeal Lode all these lodes dip steeply or moderately to the north
- The lodes are crosscut by two sets of crosscourse faults (blue and black). These typically initiated as strike-slip faults, prior to granite emplacement, during the latter stages of the Variscan collision. They were active as minor strike-slip (transfer) faults during early Permian extension when the tin lodes developed. A subsequent episode of Triassic reactivation was accompanied by the development of vein quartz and chalcedony. The most **significant crosscourses** are the **Great Fluccan**, and the **Halabalies Crosscourse**. Nearly all the **historic production** has occurred from lodes to the **east of the Great Fluccan, with the exception of Carleen Main Lode**
- The entire Project Area is underlain by **granite** interpreted to be **~600m below surface at its deepest point** in the centre of the trough of metasediments between the Tregonning – Godolphin Granite and the Carnmenellis Granite
- **Multiple felsic dykes** intrude the area striking approximately parallel to the mineralised lodes

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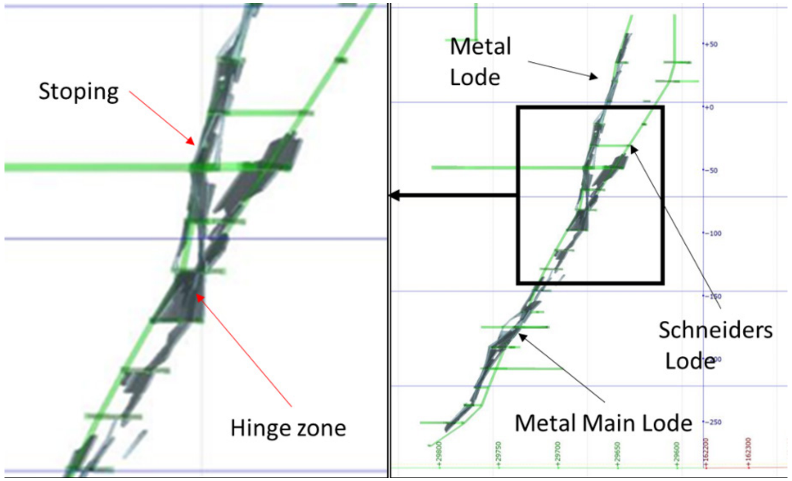
PROJECT AREA MINERALISATION

- Within the Project Area **tin mineralisation occurs principally within mineralised ENE-WSW striking lodes,** with **cassiterite** the only tin mineral reported to occur within the lodes: (important as cassiterite is the only mineral mined globally for tin)

- Other mineralisation : **Floors** (horizontal orebodies emanating from lodes, and (limited extent) **sheeted vein systems**

- **Copper ores** (chalcopyrite and melaconite) have been found in the Project Area near the Great Fluccan

- Collins (1912) states that **in the richer tin-bearing shoots there was a vein or leader of nearly pure cassiterite several feet thick,** with significant quantities of **wood tin** reported from Wheal Metal Main Lode



Cross Section of Wheal Metal showing hinge zone *(source: Osprey Mining 2019)*

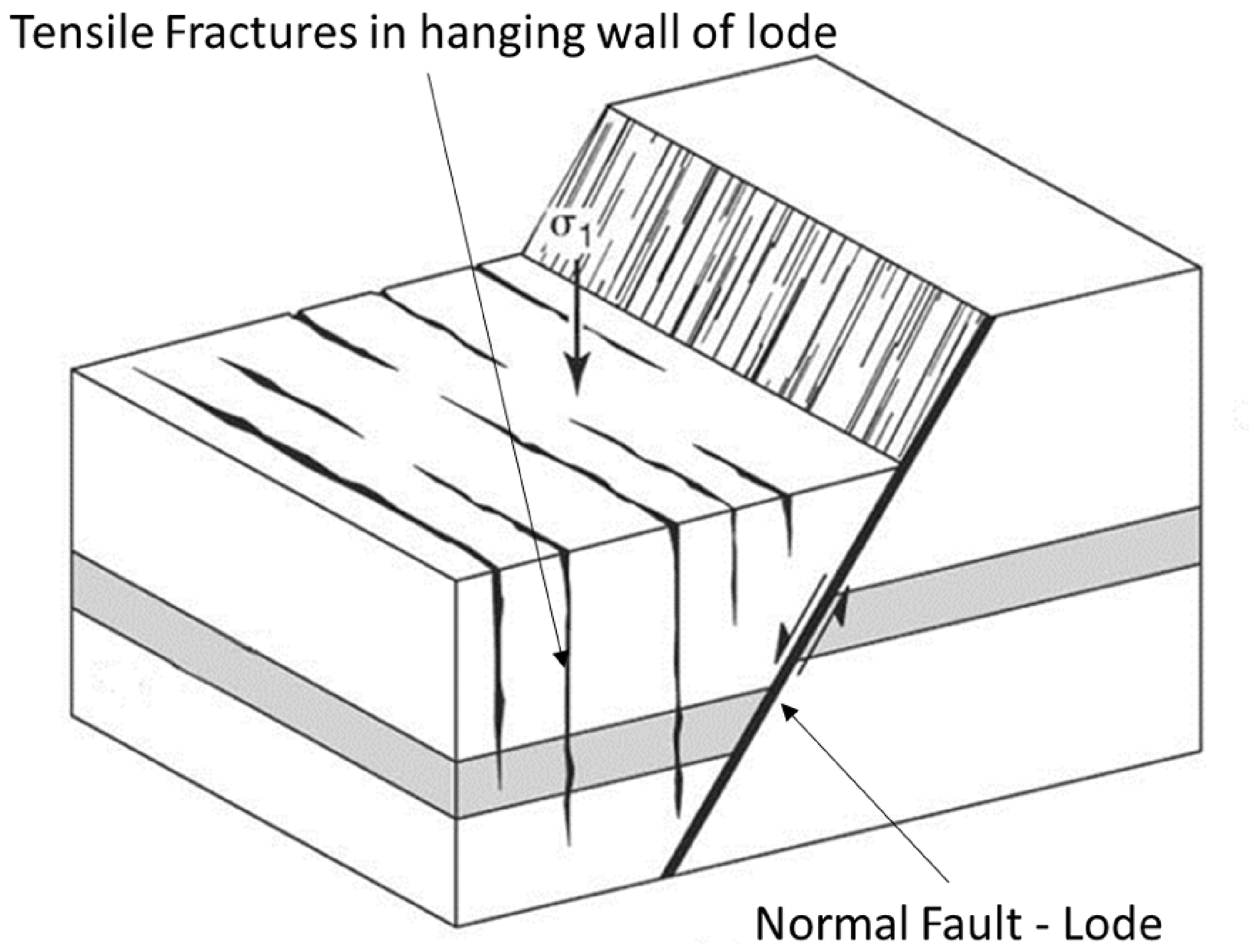
- Mineralisation occurs within **clearly defined pay shoots on nearly all of the lodes** of the Project Area. There are many examples of this, indicated by the stoping patterns on the **historic longitudinal sections held by Osprey**

- Another key control on ore formation are **hinge zones between lodes.** An example of a hinge zone between Metal Main Lode and Schneiders Lode is shown above

- The development of **high grade mineralisation in these hinge zones** is likely due to the decrease of pressure on the lode structures around the intersection point, causing boiling of the mineralising fluid and mineral crystallisation. In many Cornish tin deposits the country rock between the two lodes above the hinge zone is often mineralised by **infilled tension fractures.** These zones represent **excellent exploration targets for wide zones of high grade tin mineralisation**

MINERALISED TENSION FRACTURES

Schematic diagram of mineralised tensile fracture development in the hangingwall of a lode *(Source: Osprey Mining 2019)*



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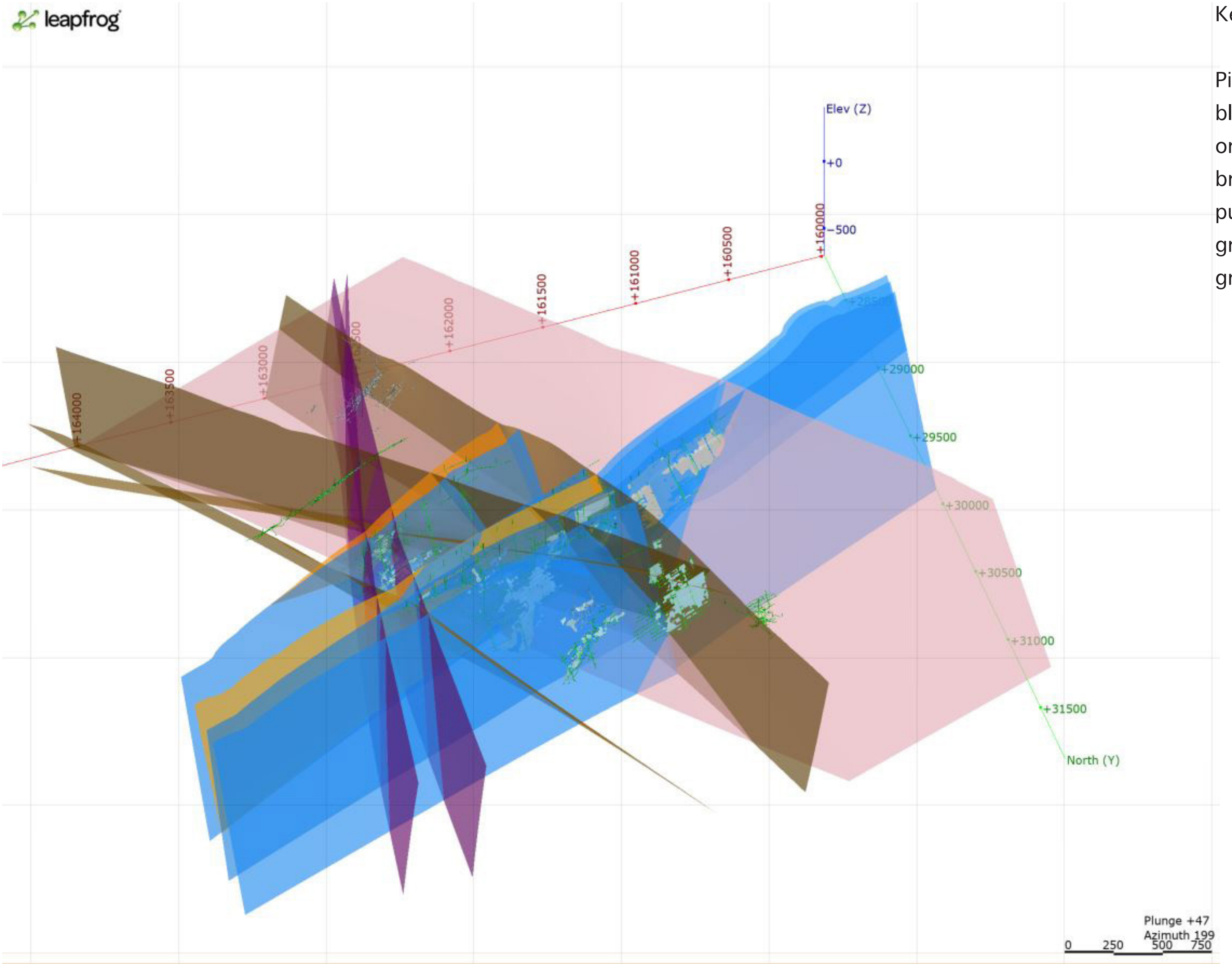

3D Leapfrog model of the Project Area showing mine workings, principal lodes, crosscourses and underlying granite, viewed looking SSE *(source: Osprey Mining 2019)*

Key

Pink= granite contact
blue= lode
orange= secondary lode / splays
brown= early crosscourse faults
purple= late crosscourse faults
green= mine workings
grey= stopes

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EXPLORATION TARGETS

- On the basis of its desktop research, Osprey has identified a **substantial number of exploration targets** in the Project Area, associated with the **known lodes of the old mines** based on the historic mine plans
- Mineralisation in the Project Area has a **strong structural control:** Osprey has identified **key lode intersections** within many of the mines which **controlled high grade formation**
- Osprey has taken into account in planning its exploration targets the original **unpublished data and exploration recommendations (not yet implemented) of Jack Trounson,** relating to his work for Camborne Tin Limited (CTL) in the 1960s. CTL was materially hampered from the start by mineral ownership issues, and only carried out a limited drill program on secondary targets, but Osprey has evaluated the **original drill hole logs and assay information, for the purposes of its exploration program**
- Osprey has identified the **principal ore shoots** on most of the worked lodes, the extensions to which will form key exploration targets: **shallow extensions of ore shoots** including within Wheal Metal and Wheal Vor are **primary targets** for initial exploration
- Other key targets include a number of **identified hinge zones and hangingwall splays** which are considered highly prospective
- **A dynamic drill program (Phase 1 – Phase 3) now modelled in 3D** with verified collar locations. Over 100 drill holes have been plotted, to enable a dynamic approach to achieve an **Inferred resource** as speedily as possible. Phase 1 planned as approx. 6 months diamond drilling of **30-40 relatively shallow holes, total approx - 7500 m**
- Osprey has concluded on the basis of its research that extensions to the east of the historic mine workings are likely to be prospective: therefore the drill program includes **targets to the east,** and Osprey has **secured additional mineral rights blocks to the east** of the original mining area. **The Project Area now covers significantly more ground than the historic mining works.**

Sally Norcross-Webb MA LLM (Cantab)
Founder and CEO

Corporate finance lawyer and mining consultant, specialising in mining deals, mineral rights, and the financing, permitting, development and operation of mineral projects in the UK and internationally: (Slaughter and May, London; Allens, Sydney). Has worked in-house in the mining industry; co-founded a specialist law firm and sold it to a regional firm. Based in Cornwall since 2011: consultant to Stephens Scown LLP, legal adviser to Cornish Metals, (South Crofty) and Cornwall Resources (Redmoor); 50% shareholder in a company commercialising mineral rights in Cornwall. UK Mineral Rights Legal Adviser to the UK Critical Minerals Association; serves on the CMA Working Group for UK Domestic Mining. Extensive experience in corporate strategy, negotiating transactions, obtaining necessary consents and approvals, legal and regulatory compliance, liaising with regulators, governmental bodies and NGOs, and taking a mining project through development to commercial production.

Jeff Harrison BSc, MSc, FAusIMM, MIoD, MIQ
Planning and Communication Adviser

A highly experienced mining engineer with over 40 years senior management experience in mining and minerals processing globally, with over half in Devon and Cornwall. Amongst his many accomplishments Jeff was instrumental in establishing Wolf Minerals Drakelands Mine, the first new metal mine in the UK for 45 years. More recently he has been a consultant for the Redmoor Project near Callington, Cornwall, and became a Non- Executive Director of Strategic Minerals plc in 2017. He has lived with his family in Cornwall since 1983.

Mark Owen BSc, MSc, CGeol, EurGeol, FGS
Independent Geological Adviser

Competent Person under UK regulatory requirements and Qualified Person under the regulations of N43.101. 40 years experience in mining and exploration around the world, and an expert in Cornish mines and minerals: served as Chief Geologist of South Crofty prior to suspension of mining; Chief Mine Geologist of Wheal Jane, Senior Project Geologist at Carnon Resources (UK). As Technical Director of Wardell Armstrong International, Mark worked on a large number of exploration and mining related contracts through to technical audits and Competent and Qualified Person's Reports for AIM and full listings on The London Stock Exchange, and Venture and full listings on the Toronto Stock Exchange. Based in Cornwall.

Jeremy Cole BSc (HONS), MSc, MCSM
Geologist

Depth of experience working in mineral projects around the world, now an Exploration Geologist with SRK. Jeremy has carried out extensive desktop research on the Great Wheal Vor project and has modelled Osprey's proposed drilling program, with Mark Owen. A Cornishman, Jeremy has acquired an encyclopaedic knowledge of Cornish mining and minerals. He has worked with Cornwall Resources in recent years in relation to its drill programs at Redmoor, and resource statements.

Adam Weatherall BSc, ACSM
Digital Mapping Technician
Adam is very experienced in researching and digitally mapping the mineral rights of Cornwall, and has been working in the mining and minerals sector for 6 years. He consults to Osprey, carrying out digital mapping and mineral rights research. Based in Cornwall.

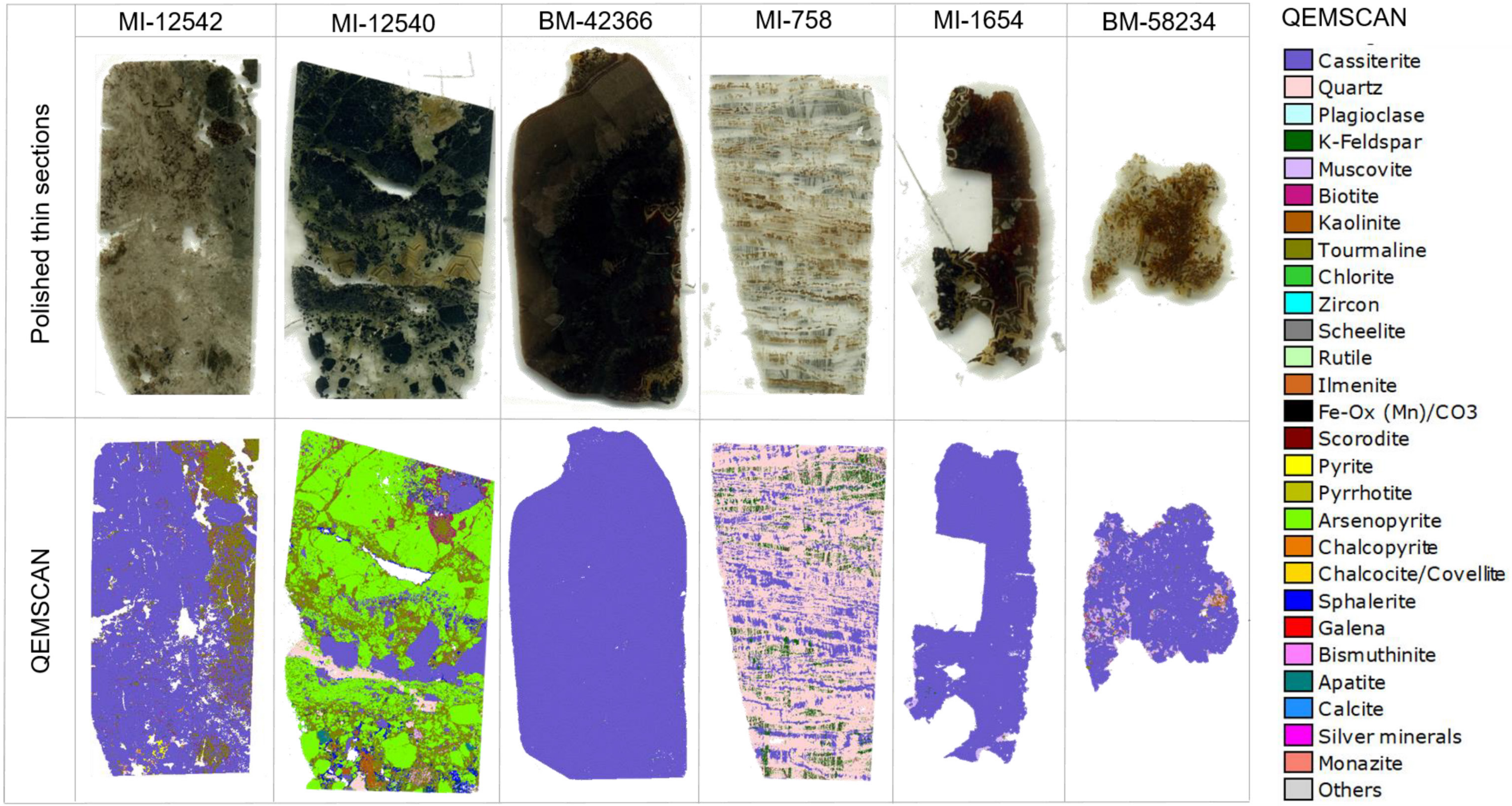
Poppy Edgecombe BSc, MSc
Geologist
Poppy gained her BSc at the University of Plymouth, and in August 2019 completed her MSc dissertation at the Camborne School of Mines (University of Exeter) on the Great Wheal Vor Exploration Project, with a focus on mineral characterisation and controls on grade variation. This research project, supervised by Dr Robin Shail of CSM, contributed much valuable insight into identifying/verifying Osprey's exploration targets.

Dr Robin Shail BA, PhD
Senior Lecturer in Geology, Camborne School of Mines, University of Exeter
Robin is an expert on the geology of Cornwall and, in addition to supervising Poppy's MSc research project, contributes greatly to our understanding of the local geology around Wheal Vor and its regional context. Based in Cornwall.

Dr Chris Yeomans MSci, MSc, PhD
Postdoctoral Research Fellow, Camborne School of Mines, University of Exeter
Chris has also participated in the 2019 research project making valuable contributions. His area of research covers machine learning for mineral exploration with a focus on tin, tungsten, lithium, copper and uranium. Chris has a keen interest in the geology of SW England. Based in Cornwall.

Tony Bennett CEng, BSc, ACSM MIMMM
Author of the book "GREAT WHEAL VOR: a study of the history and working of one of the richest tin mines in Cornwall" published 2015
Tony is a renowned expert on Great Wheal Vor, and Cornish mines and mining generally. He is a valued consultant to Osprey, and his extensive research findings and knowledge of Great Wheal Vor greatly contribute to the research effort. He is involved in mining heritage and mineral exploration in Cornwall, particularly in geothermal energy projects. Based in Cornwall.

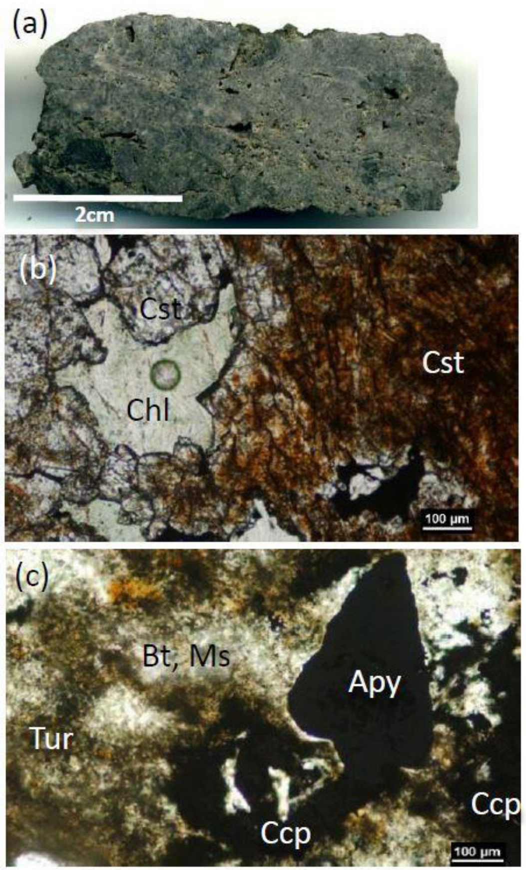
QEMSCAN RESULTS FROM CSM RESEARCH PROJECT 2019



QEMSCAN analysis by Dr Gavyn Rollinson, Camborne School of Mines, University of Exeter
Vein samples from the collections of the Natural History Museum, London

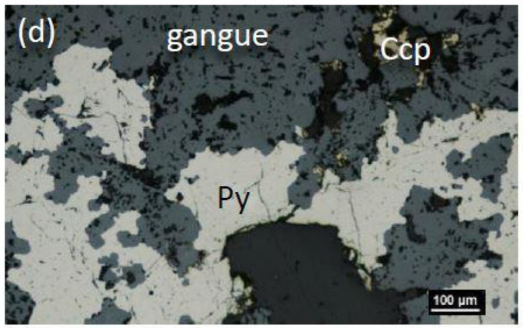
Sample MI-12542 - Huel Vor

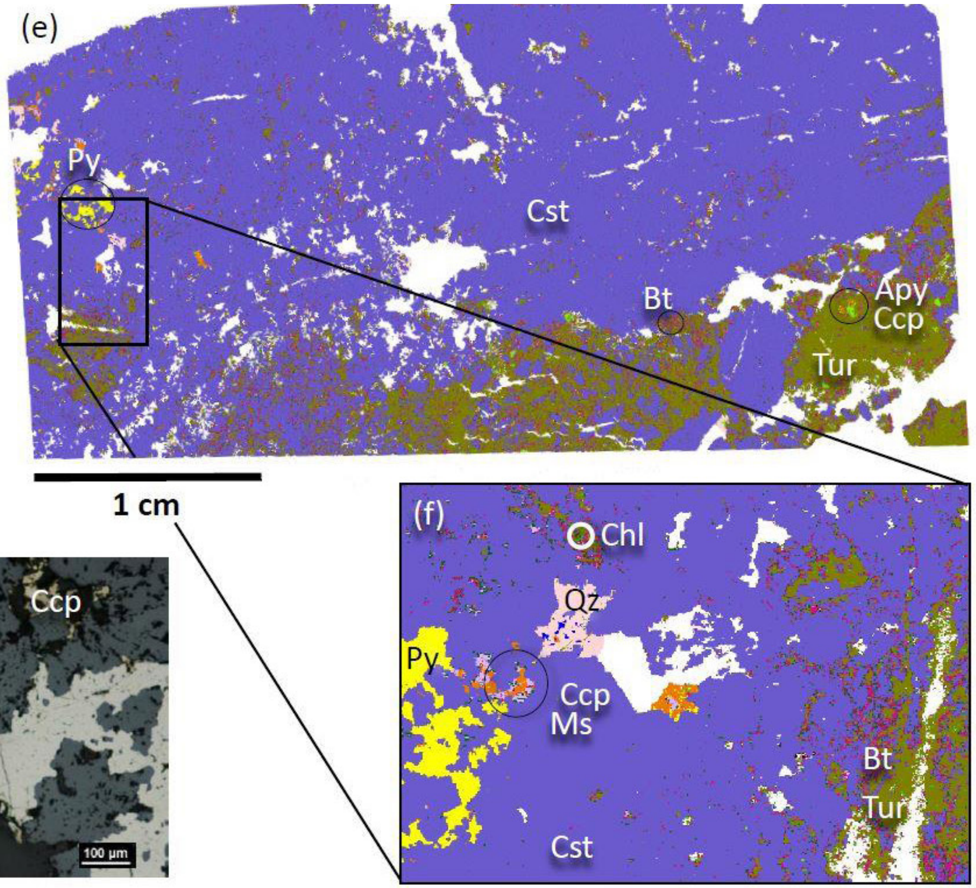
(a) Scanned photograph of cut sample . (b) Photomicr ograph taken in transmitted light (ppl) displaying massive cassiterite of two colour variations, with interstitial fanned chlorite . (c) Photomicrograph taken in transmitted light (ppl) displaying early arsenopyrite and chalcopyrite, with a later fine grai ned mass of tourmaline, biotite, and muscovite . (d) Photomicrograph taken in reflected light (ppl) displaying gangue in dark grey, with later pyrite and chalcopyrite . (e) QEMSCAN with appropriate table, much of the sample is voided in a vein like nature , indicating potential breakdown of sulphide veins . (f) Zoomed section of (e), highlighting associations between tourmaline and biotite, as well as chalcopyrite and muscovite . Chlorite is only present disseminated in tourmaline.



Mineral	% Area
Cassiterite (Cst)	79.9
Tourmaline (Tur)	12.7
Biotite (Bt)	3.8
K-feldspar (Kfs)	1.4
Chlorite (Chl)	
Quartz (Qz)	
Muscovite (Ms)	
Pyrite (Py)	
Chalcopyrite (Ccp)	
Arsenopyrite (Apy)	

Trace

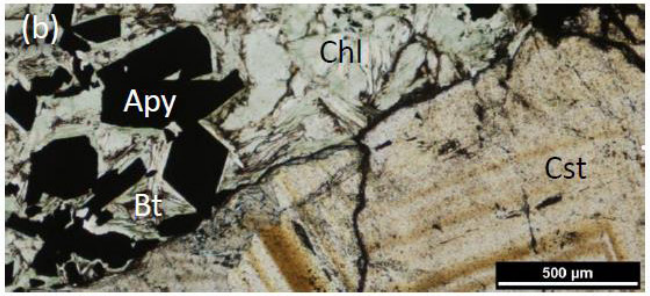


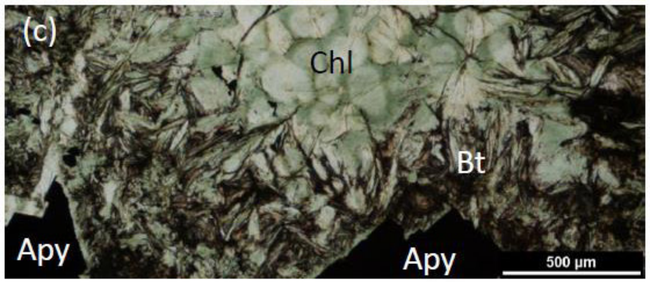


QEMSCAN analysis by Dr Gavyn Rollinson, Camborne School of Mines, University of Exeter
Vein sample from the collections of the Natural History Museum, London

Sample MI-12540 - Huel Vor

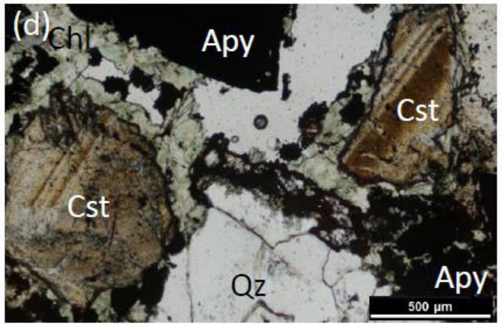
(a) Scanned photograph of cut sample . (b) Photomicrograph taken in transmitted light (ppl) displaying zoned cassiterite, with later arsenopyrite, and interstitial chlorite with biotite . Replacement of biotite by chlorite is consistent throughout . (c) Photomicrograph taken in transmitted light (ppl) displaying arsenopyrite, with later biotite and chlorite, replacement of biotite by chlorite . (d) Photomicrograph taken in transmitted light (ppl) displaying brecciated cassiterite, with later arsenopyr ite, and interstitial quartz and chlorite . (e) QEMSCAN with appropriate table, much of the sample is highly fractured/brecciated . Both zoned massive cassiterite, and zoned brecciated cassiterite are present . Veins are predominantly occupied by either q uartz or tourmaline/biotite . (f) Zoomed section of (e), highlighting a zone of acicular tourmaline/ biotite . Arsenopyrite is interstitial to the acicular groundmass.

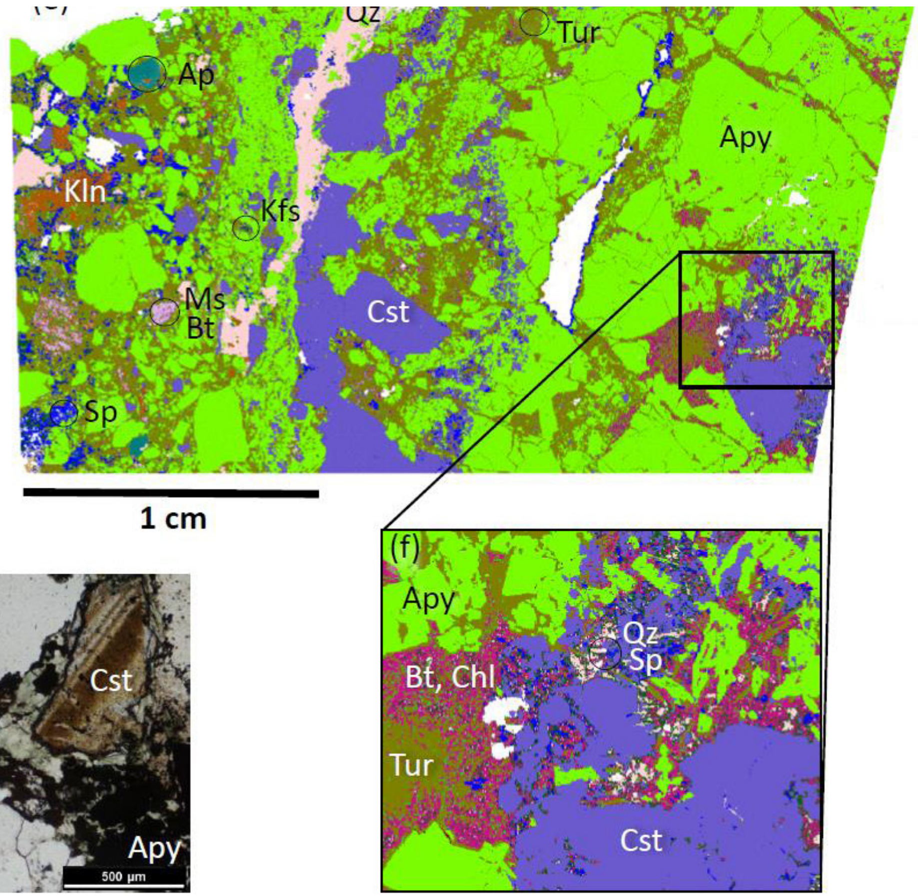




Mineral	% Area
Arsenopyrite (Apy)	51.0
Tourmaline (Tur)	20.4
Cassiterite (Cst)	13.8
Chlorite (Chl)	3.4
Quartz (Qz)	2.8
Biotite (Bt)	2.8
Sphalerite (Sp)	2.73
Kaolinite (Kln)	1.2
K-feldspar (Kfs)	1.1
Muscovite (Ms)	
Scorodite (Sc)	
Pyrite (Py)	
Apatite (Ap)	

Trace





QEMSCAN analysis by Dr Gavyn Rollinson, Camborne School of Mines, University of Exeter
Vein sample from the collections of the Natural History Museum, London

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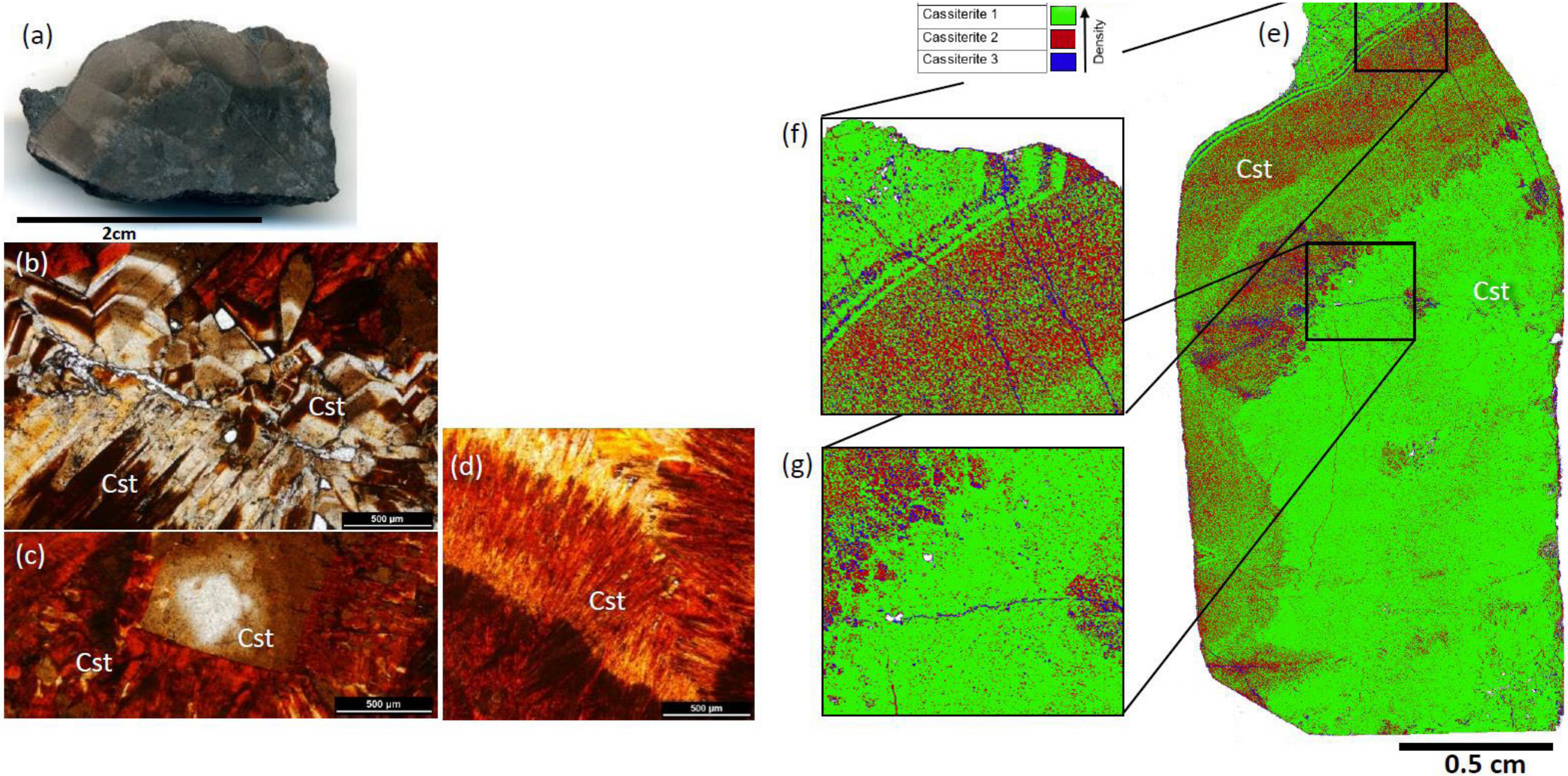
Sample MI-42366 - Wheal Metal

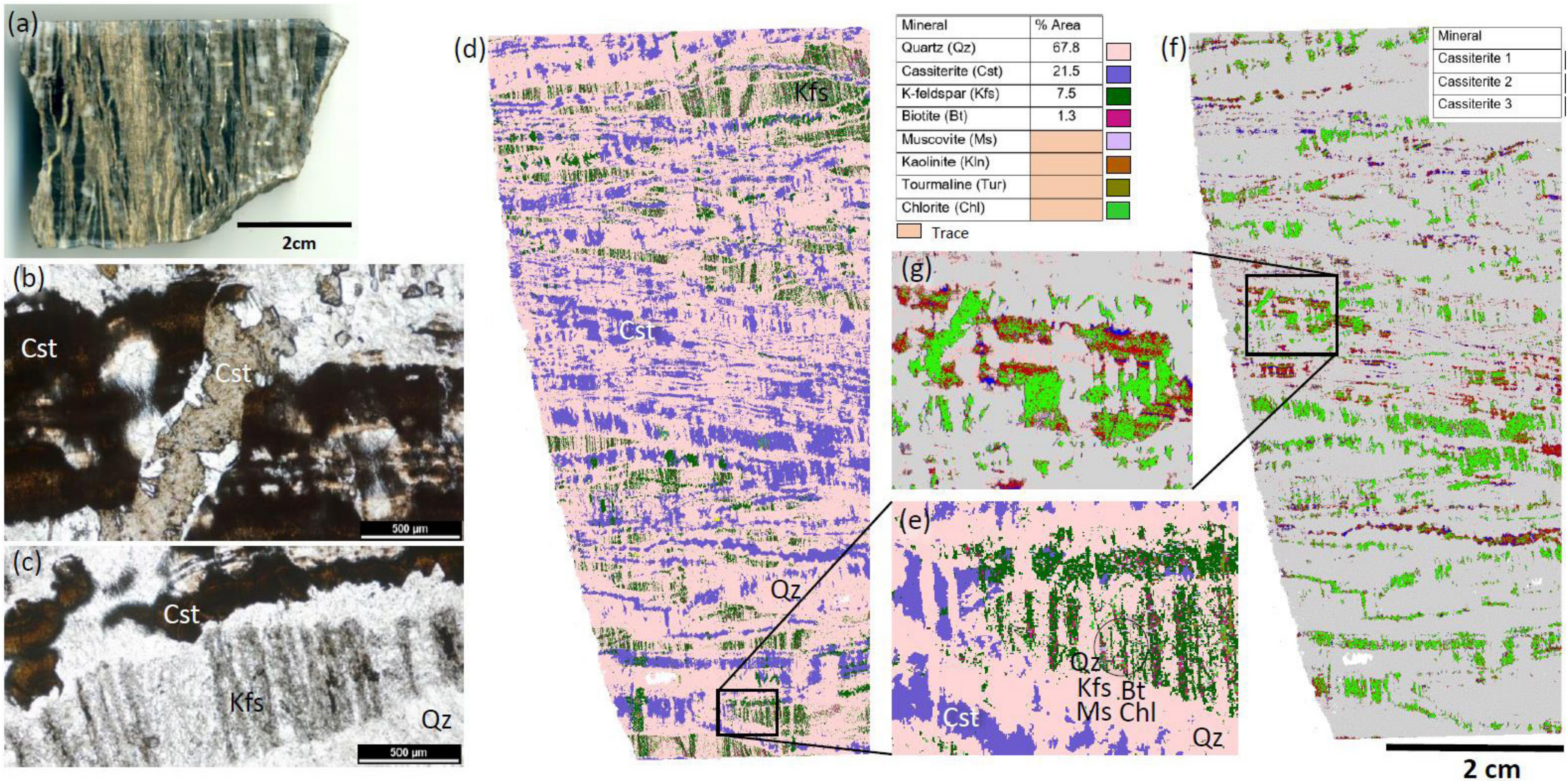
(a) Scanned photograph of cut sample . (b) Photomicrograph taken in transmitted light (ppl) displaying zoned cassiterite, surrounded by acicular cassiterite . (c) Photomicrograph taken in transmitted light (ppl) displaying rectangular zoned cassiterite, its irr egular shape likely due to the orientation of cutting . (d) Photomicrograph taken in transmitted light (ppl) displaying radial wood tin which appears to be banded . (e) QEMSCAN with appropriate table, due to the high cassiterite content a density map has been calculated for cassiterite . (f) Zoomed section of (e), highlighting colloform banding from different densities of cassiterite . (g) Zoomed section of (e), highlighting later fractures of either less dense cassiterite, or of background/resin, it is im possible to identify this from the image, and it will require a higher level of QEMSCAN imagery to determine the accuracy of the data provided.



QEMSCAN analysis by Dr Gavyn Rollinson, Camborne School of Mines, University of Exeter
Vein sample from the collections of the Natural History Museum, London

Sample MI-758 - Depth of 278m, Wheal Metal Shaft

(a) Scanned photograph of cut sample . (b) Photomicrograph taken in transmitted light (ppl) displaying a coarse cassiterite vein cut ting a fine radial cassiterite vein . (c) Photomicrogr aph taken in transmitted light (ppl) displaying a vein of host rock, which is perpendicular to the foliation of the host, the host has been replaced by K feldspar and quartz after numerous dilational events . (d) QEMSCAN with appropriate table, where vein s of host rock are represented by K feldspar, in between masses of quartz and veins of cassiterite . (e) Zoomed section of (d) focussing on the host rock vein, which contains foliations of k feldspar and quartz, with minor biotite, muscovite, and chlorite (f) QEMSCAN density map of cassiterite, where numerous densities occur in different styles of veins . (g) Zoomed section of (f) highlighting cross cutting relationships of veins with differing densities of cassiterite.



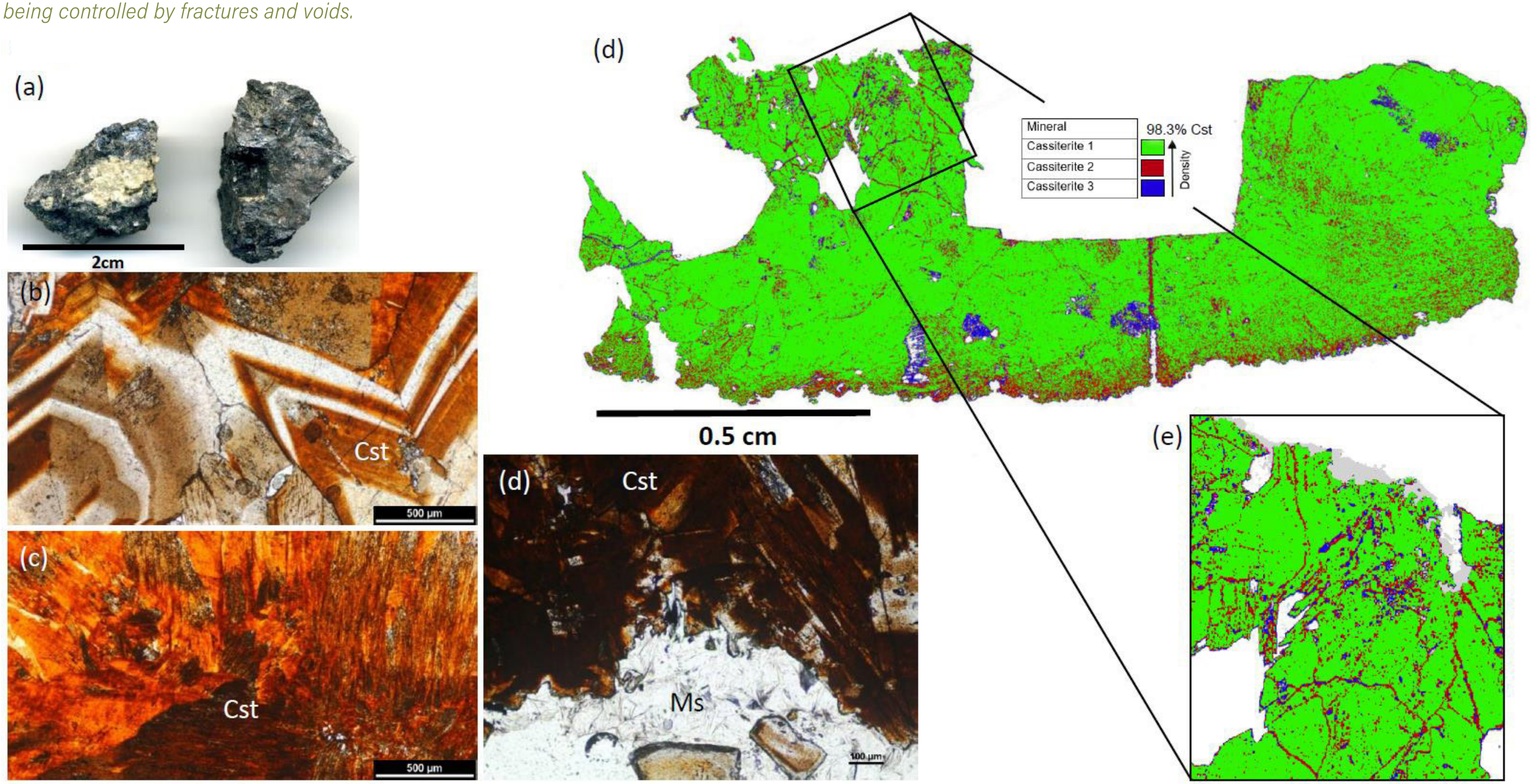
Mineral	% Area
Quartz (Qz)	67.8
Cassiterite (Cst)	21.5
K-feldspar (Kfs)	7.5
Biotite (Bt)	1.3
Muscovite (Ms)	
Kaolinite (Kln)	
Tourmaline (Tur)	
Chlorite (Chl)	

Trace

QEMSCAN analysis by Dr Gavyn Rollinson, Camborne School of Mines, University of Exeter
Vein sample from the collections of the Natural History Museum, London

Sample MI-1654 - Great Wheal Vor, 160 fathom level, Huel Metal Shaft

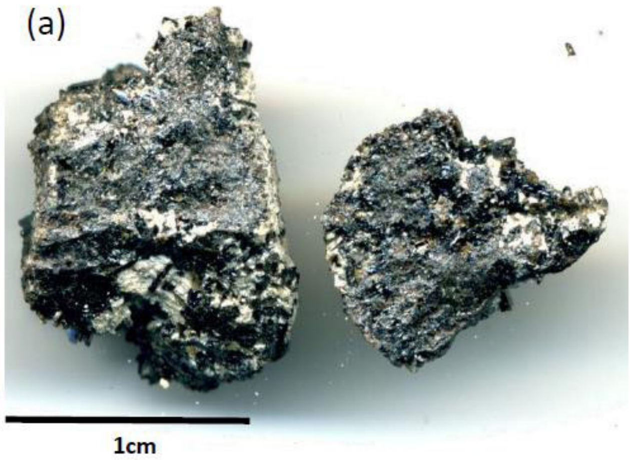
(a) Scanned photograph of cut sample . (b) Photomicrograp h taken in transmitted light (ppl) displaying zoned cassiterite . (c) Photomicrograph taken in transmitted light (ppl) displaying coarse radial cassiterite . (d) Photomicrograph taken in transmitted light (ppl) displaying zoned acicular cassiterite, with i nterstitial muscovite . (e) QEMSCAN with appropriate table, due to the high cassiterite content a density map has been calculated for cassiterite Much of the density variation will be boundary definition, however it does seem some low density cassiterit e is present in enclosed sections . (f) Zoomed section of (e) highlighting density variation in cassiterite, which could just be being controlled by fractures and voids.



QEMSCAN analysis by Dr Gavyn Rollinson, Camborne School of Mines, University of Exeter
Vein sample from the collections of the Natural History Museum, London

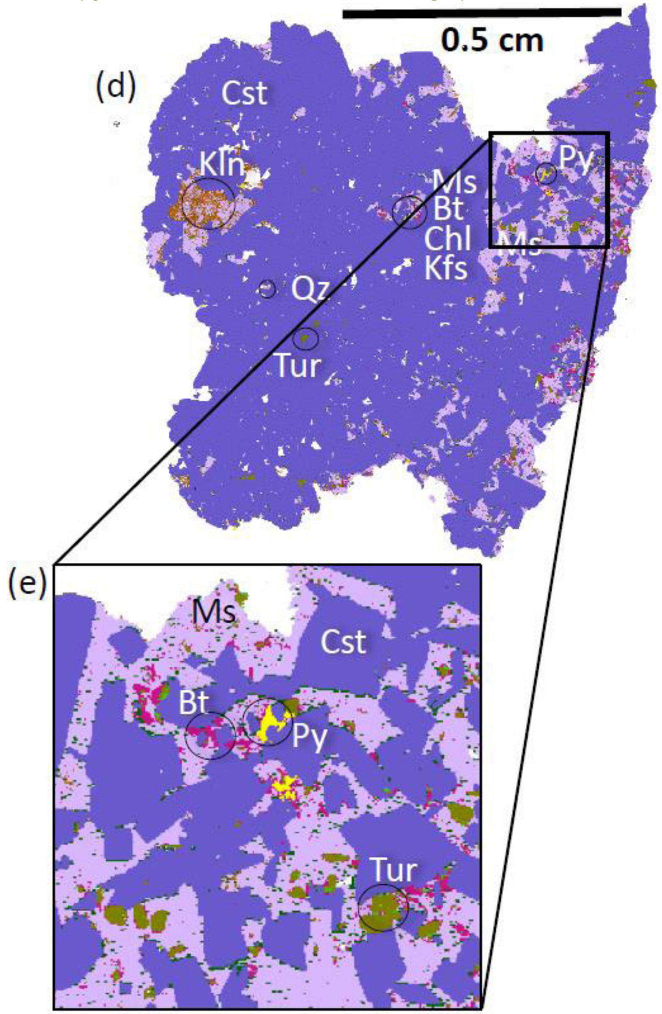
Sample BM-58234 - Great Wheal Vor

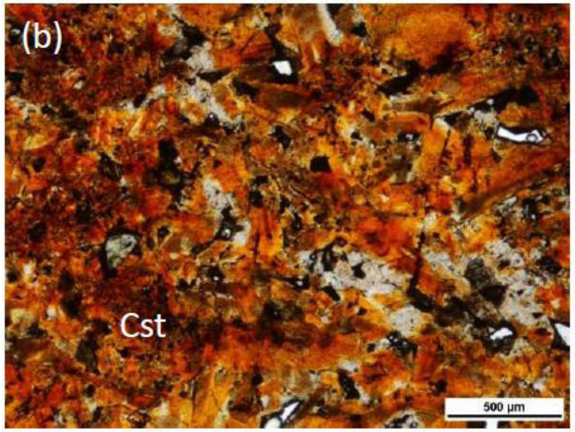
(a) Scanned photograph of cut sample . (b) Phot omicrograph taken in transmitted light (ppl) displaying massive cassiterite . (c) Photomicrograph taken in transmitted light (ppl) displaying large zoned cassiterite, with interstitial muscovite and chlorite . (d) QEMSCAN with appropriate table, massive c assiterite dominates, with interstitial muscovite, biotite, tourmaline and chlorite . (e) Zoomed section of (d) focussing on interstitial minerals, in particular pyrite which seems to be in filling space .

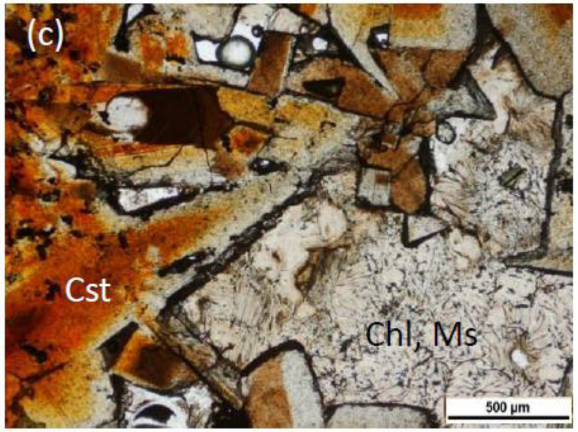


Mineral	% Area
Cassiterite (Cst)	85.7
Muscovite (Ms)	9.8
K-feldspar (Kfs)	1.2
Biotite (Bt)	1.0
Kaolinite (Kln)	1.0
Tourmaline (Tur)	
Quartz (Qz)	
Chlorite (Chl)	
Pyrite (Py)	

Trace







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Vein sample from the collections of the Natural History Museum, London

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