



General

🔼 Specified Site

Specified Buffer(s)

X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg





Order Details

Order Details:328189058_1_1Customer Ref:23273National Grid Reference:169810, 42660Slice:ASite Area (Ha):0.28Search Buffer (m):1000

Site Details

Redruth RF C, Lower Cardrew Lane, REDRUTH, TR15 1SY





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General

🔼 Specified Site

Specified Buffer(s)

X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg





Estimated Soil Chemistry Nickel - Slice A

Order Details

Order Details:328189058_1_1Customer Ref:23273National Grid Reference:169810, 42660Slice:ASite Area (Ha):0.28Search Buffer (m):1000

Site Details

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Geology 1:50,000 Maps Legends

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	UDP	Unnamed Dyke, Permian	Felsite	Not Supplied - Permian
	CAIN	Carnmenellis Intrusion	Granite	Not Supplied - Carboniferous
	MRSL	Mylor Slate Formation	Hornfelsed Slate and Hornfelsed Siltstone	Not Supplied - Frasnian
	MRSL	Mylor Slate Formation	Metabasaltic-rock	Not Supplied - Frasnian
	POAN	Porthtowan Formation	Metamudstone and Metasandstone	Not Supplied - Eifelian
	POAN	Porthtowan Formation	Mudstone and Sandstone	Not Supplied - Eifelian
/		Faults		



Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps. The various geological layers - artificial and landslip deposits, superficial

geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

	· ·	
Map ID:	1	
Map Sheet No:	352	
Map Name:	Falmouth	
Map Date:	1990	
Bedrock Geology:	Available	
Superficial Geology:	Available	
Artificial Geology:	Available	
Faults:	Not Supplie	ed
Landslip:	Available	
Rock Segments:	Not Supplie	ed

Geology 1:50,000 Maps - Slice A



Slice:

23273 169810, 42660 National Grid Reference: А Site Area (Ha): Search Buffer (m): 0.28

1000

Site Details: Redruth RF C, Lower Cardrew Lane, REDRUTH, TR15 1SY

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Artificial Ground and Landslip

Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground man-made deposits such as embankments and spoil heaps on the natural ground surface. - Worked ground - areas where the ground has been cut away such as
- quarries and road cuttings.

- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.

 Landscaped ground - areas where the surface has been reshaped.
 Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details: Order Number: 328189058 1 1 Customer Reference: 23273 National Grid Reference: 169810, 42660 Slice: А Site Area (Ha): Search Buffer (m): 0.28 1000

Site Details:

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RABR

Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



 Order Details:

 Order Number:
 328189058_1_1

 Customer Reference:
 23273

 National Grid Reference:
 169810, 42660

 Slice:
 A

 Site Area (Ha):
 0.28

 Search Buffer (m):
 1000

 Site Details:
 Interview

Site Details: Redruth RF C, Lower Cardrew Lane, REDRUTH, TR15 1SY







Bedrock and Faults

Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.





Order Details: Order Number: Customer Reference: National Grid Reference: Silce: Site Area (Ha): Search Buffer (m):	3281890 23273 169810, - A 0.28 1000	58_1_1 42660		
Site Details: Redruth RF C, Lower Cardro	ew Lane, R	EDRUTI	H, TR15 1SY	
	*	Tel: Fax: Web:	0844 844 9952 0844 844 9951 www.envirocheck.co.uk	
v15.0 12-Dec-2023			Page	4 of



Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey Kingsley Dunham Centre Keyworth Nottingham NG12 5GG Telephone: 0115 936 3143 Fax: 0115 936 3276 email: enquiries@bgs.ac.uk website: www.bgs.ac.uk

INFORMATION GROU v15.0 12-Dec-2023

Combined Geology Map - Slice A



Order Number: Customer Reference: National Grid Reference: Slice: Site Area (Ha): Search Buffer (m):	328189058_ 23273 169810, 426 A 0.28 1000	_1_1 60		
Site Details: Redruth RF C, Lower Card	rew Lane, RED	RUTI	H, TR15 1SY	
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Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:





British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL





Envirocheck reports are compiled from 136 different sources of data.

Client Details

Miss L Quick, Karn Geoservices Ltd, 9 Broad Street, Truro, Cornwall, TR1 1JD

Order Details

 Order Number:
 328189058_1_1

 Customer Ref:
 23273

 National Grid Reference:
 169800, 42690

 Site Area (Ha):
 0.28

 Search Buffer (m):
 1000

Site Details

Redruth RF C, Lower Cardrew Lane, REDRUTH, TR15 1SY

Full Terms and Conditions can be found on the following link: http://www.landmarkinfo.co.uk/Terms/Show/515



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APPENDIX 5

HISTORICAL MINING SEARCH

WESTCOUNTRY MINES

<u>& property surveys</u>

MINING SUBSIDENCE CONSULTANTS Grove Farm, East Hill, Blackwater, Truro, Cornwall TR4 8EG Tel & Fax: 01872 562837 E-mail: info@westcountrymines.co.uk

Your Ref: 10459

Karn-GeoServices Ltd

FURTHER ACTION RECOMMENDED

West Langarth Farmhouse Penstraze, Truro, Cornwall TR4 8PH Dear Sirs,

13th December 2023

Thank you for your instructions to carry out a metalliferous tin mining archive search for which we are pleased to present the following report.

REFERENCE

REDRUTH RFC, THE RECREATION GROUND, REDRUTH, CORNWALL. NATIONAL GRID REFERENCE SW 697427 REPORT REF: 70293.

INTRODUCTION

The property, located on the northern outskirts of Redruth lies within an historic mining area with intensive underground and surface activity. This report undertakes to advise only on possible untoward past metalliferous mining features likely to present a future risk to ground and structural stability.

In general for Cornwall and Devon, the main risk to ground stability is not associated with the deeper metalliferous mine workings but with the connection at surface such as shafts, worked lode outcrops, trial pits or quarries, etc. Subsidence is therefore usually caused by gradual backfill movement or sudden collapse of old support near to the surface. Except for later deep shafts the majority of subsidence problems are related to early workings prior to the mid-19th Century for which there are very few records. While these shallow workings can often be identified from surface features or projected from the deeper recorded levels they are often associated with lodes for which there are no remaining features, knowledge or later underground development. Therefore totally unrecorded or unindicated workings can exist within any mineralised area.

GEOLOGY

The country rocks are metamorphosed slates and shales of the Devonian Porthtowan Formation. The Carn Marth granite outcrops to the east and underlies the area at depth. Mineralised lode structures, mostly in the form of narrow and steeply dipping veins, irregularly traverse the area with a general trend of ENE-WSW. Intrusions of greenstone and elvan dykes also occur and run parallel with the lodes while crosscourses or faults, some of which are mineralised, cut and displace the lodes at approximate right angles to their trend.

MINING HISTORY

The property lies within the north eastern boundary of the East Wheal Tolgus mining sett. East Wheal Tolgus was started during the 1850's but the mine was earlier known as Redruth Consols and the local area is believed to have been worked by a Wheal Alice in the 18th Century. The mine was intermittently worked until the late 19th century. The only recorded production was during the last reworking when small tonnages of tin, copper and zinc ores were sold.

MINING APPRAISAL

There is little information and no mine plans of the very early underground workings in the Redruth area. However, the attached compilation plan helps to identify the known, indicated and suspected mining and geological features within this locality.

- It is indicated from an early mining map that a lode structure lies immediately to the west of the properties west central boundary. Although significant and extensive workings would not be expected, very often these features may indicate the presence of early and unrecorded trial or exploratory workings. If shallow workings should underlie or encroach within the property there could be a risk to ground stability.
- The 19th Century small scale mining maps of the district record a crosscourse as passing approximately 40 metres to the east of the properties eastern boundaries.
- Small disused quarries surround the search plan area, the nearest example being located long and within the north western boundaries of the property, a second example is recorded approximately 10 metres to the south of the properties southernmost boundary. While these features are not confirmed, or in this instance believed to be mining related, very often within mining areas old abandoned mining features were later recorded as quarries, wells or ponds.
- The geological plans show an elvan dyke passing immediately north of the properties northern boundary, certain elvans are often extensively quarried for stone while some are metalliferous and have been worked for tin.
- A number of wells are located within the search area and while this feature is not confirmed to be mining related, very often within mining areas old abandoned shafts were later used for a local water supply.
- Any deep underground workings underlying the local area should not affect ground stability however the presence of unrecorded and unsecured shallow mining activity cannot be entirely ruled out.

Where possible the original plans and mining maps have been correlated with the Ordnance Survey 1:2500 scale. The 1880 and 1907 editions of the Ordnance Survey have been studied when necessary to help identify surface features relevant to past mining and quarry activity. Reference has also been made to the 6 inch Geological Survey published 1906 and the 1974 British Geological Survey 1:50 000 scale.

LIMITATIONS

Although this report is based on the extensive collection of plans, records and archive material, including reference to all our Abandoned Mine Plans for the mines of the West Country, it has to be recognised that these plans and records are often conflicting and incomplete. Also there are no records or plans for most of the mining carried out prior to the mid 19th Century. This early and unrecorded mining activity is considered to be extensive throughout the zones of mineralization. Where more than one source is available for the same information the most reliable source or our interpretation has been used. While every effort is made to reasonably search the archives and plans, Westcountry Mines & Property Surveys cannot accept liability for any inaccuracies or omissions there may be with respect to those records.

This report does not include a site visit and is not a structural survey although in any mineralised area it would be prudent to have one carried out. The property is situated within a historically mined area and as such the ground area maybe subject to contamination, this report does not comment on non-metalliferous mining features; environmental, financial or contaminated land issues related to past mining activity. The report and plan is provided for the sole use of the client and Westcountry Mines & Property Surveys will not accept responsibility or liability to any persons other than the client or their professional advisers.

CONCLUSIONS

It is indicated that the property should be is clear of known significant metalliferous mining activity, as in any mineralised area, there is always a possibility of further unrecorded or unsecured mining related activity. however in this instance we feel that this can be considered an acceptable mortgage risk.

<u>RECOMMENDATIONS</u>

If the property were to be developed or excavated further it would be recommended, that any works should be inspected by a suitable person as a precautionary measure due to the possible risk of backfill or untoward features occurring within the site.

For further advice please contact our Geological and Survey Department. info@westcountrymines.co.uk. 01872 562 837

We trust that the above is of assistance, and assure you of our prompt attention to any future requirements. Please contact us should you need further help or have any queries or problems you would like to discuss.

Yours faithfully,

West County Mins . Frysty

Westcountry Mines and Property Surveys

GLOSSARY

Adit: horizontal tunnel driven from low ground to drain or ventilate mine workings Alluvium: sand, clay, and rock debris deposited by a river Burrow: mine waste dump Caunter Lode: lode running in different direction to general lode trend Crosscourse: sheet like geological feature striking across the general direction of the lodes Dip: angle of inclination of lode or rock structure from the horizontal Drive: horizontal tunnel (verb) meaning to advance a tunnel Elvan: intrusive igneous rock (quartz-porphyries) occurring in the form of veins and dykes Granite: igneous rock, crystalline compound of quartz, feldspar and mica Greenstone: Cornish term "blue elvan" igneous intrusion genetically related to granite Huel: ancient name for mine corrupted into "Wheal" Kaolinisation: alteration of granite to clay and sand from solid rock Killas: general Cornish term given to sedimentary rocks Level: underground horizon on which tunnels are driven Lode: mineralised vein producing ore Leat: water course Mundic: iron pyrites, arsenic and sulphur - arsenopyrite Open Cast: where minerals are worked on surface Outcrop: surface penetration of geological features such as lodes or rock formations Sett: area of ground leased for mining Shaft: vertical excavation to connect underground workings to surface, providing access Stope: underground excavation from which ore is extracted Streaming: extraction of tin ore (cassiterite) from alluvium Tailings: waste products of ore-dressing Underlie: angle of inclination from the vertical of a geological structure

BIBLIOGRAPHY

British Regional Geology, South West England 1969 Brooke, Justin. Tin Streams of Wendron 1994 Buckley, J.A., Tudor Tin Bounds 1987 Collins, J.H., the Hensbarrow Granite District 1878 Collins, J.H., Observations on the West of England Mining Region 1912 Cornwall County Council. Minerals Local Plan Consultation Draft. 1994 Dines, H.G., The Metalliferous Mining Region of Southwest England 2 vols, 1956 Exeter University, Cornwall, Devon & Somerset Mineral Statistics 1845-1913 1987 Hamilton Jenkin, A.K., Mines and Miners of Cornwall Vols 1-16 & Devon Mines 2 Vols Henwood, W.J., Metalliferous Deposits of Cornwall & Devon 1843 Morrison, T.A., Cornwall's Central Mines 1810-1895 2 Vols 1980-83 Noall, C., St. Ives Mining District 2 Vol Noall, C., St. Just Mining District - Botallack - Geevor - Levant Thomas, R., Report on the Survey of the Camborne to Chacewater Mining District 1819 Trounson, J.H., Cornish Mineral Industry - Cornwall's Future Mines 1937-1951 Spargo, T., Statistics and Observations on the Mines of Cornwall and Devon 1865 Watson, J.Y., Compendium of British Mining 1843

MINING SEARCH PLAN REDRUTH RFC, THE RECREATION GROUND, REDRUTH, CORNWALL



WESTCOUNTRY MINES & PROPERTY SURVEYS GROVE FARM, EAST HILL BLACKWATER, TRURO CORNWALL TR4 8EG Tel/Fax: 01872 562837

MINE SEARCH PLAN

Nat Grid Ref SW 697427

E-mail: info@westcountrymines.co.uk

Not to Scale

DRAWN BY: NAP

Plan Ref: 70293 Date 132/12/2023

	KEY
Accurate & approximate locations of known, indicated and suspected shafts/wells and their zone of influence.	•
Accurate & approximate locations of lodes and crosscourses outcropping at surface.	
Possible locations of lodes & crosscourses with unknown or uncertain elevations.	<u>+</u>
Underground levels or adits (where relevant).	
Areas used for mine waste or dumps.	
Disused quarries & possible surface mining activity.	
Property boundary	

THE MINING FEATURES SHOWN ON THIS PLAN ARE BASED ON READILY AVAILABLE INFORMATION AND CANNOT BE CONSIDERED AS EITHER BEING TOTALLY ACCURATE OR COMPLETE. BASED ON ORDNANCE SURVEY 1:2500 PLANS WITH PERMISSION OF THE CONTROLLER OF HIS MAJESTY'S STATIONARY OFFICE. COPYRIGHT LICENCE No: AL815772.



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