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Professional, Efficient Solutions

CONTAMINATED LAND SURVEY PHASE 1

SITE: LAND AT:
GROVE VISTA
TREVARTH ROAD
CARHARRACK
REDRUTH
CORNWALL
TR16 5SE

CLIENT: MR F ANDREW
ANDREW BROS LTD
UPLANDS
GWEAL-AN-TOP
REDRUTH
CORNWALL
TR15 2DS

Our Ref: A1599/P1/JW

Date: 24th May 2019

Planning Ref: PA19/00416/PREAPP

OS Grid Ref: SW 7283/4096

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1. Introduction

Following consultation and instruction from the client, Mr F Andrew, ASI was commissioned to conduct a Phase 1 Contaminated Land Survey for the following site:

Site locality: land at, Grove Vista, Trevarth Road, Carharrack, Redruth, Cornwall.

End-use: Construction of a single residential dwelling with garden amenity area and onsite parking.

This report has been compiled utilising historical and current Ordnance Survey map information, non interpretive environmental report information, British Geological Survey maps and historical mine search reporting (where applicable). Additional data sources have been referenced in conjunction with an onsite inspection of the property and associated land.

2. Summary & Objectives

The objective of the Phase 1 Contaminated Land Survey is to identify potential contamination risk associated with the site locality and its former utilisation. To comply with current government legislation and Local Authorities planning requirements, a conceptual model needs to be defined for the site area to highlight potential pollution pathways. The conceptual model is a representation of the three-dimensional site characteristics and interaction with the surrounding environment, which identifies all possible receptors, potential contamination and contaminant migration pathways, and shows the possible relationships between them (potential pollutant linkages), taking into account the current and proposed uses of the site.

This report has been compiled in accordance with the Contaminated Land Report 11 (CLR 11 - Model Procedures) and the British Standards Institute (BSI) 10175:2011 Investigation of Potentially Contaminated Sites (Code of Practice), and should be submitted to the relevant Council Authority for assessment.

Map & Street Plan Showing Location Of Site



OS Licence: 100045900 Crown copyright 2019



OS Licence: 100045900 Crown copyright 2019

3. Definition Of Contaminated Land




The legal definition of contaminated land (from Section 78A(2) of Part IIA of the Environmental Protection Act 1990) is:

'...any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that:

(a) significant harm is being caused or there is the significant possibility of such harm being caused; or

(b) pollution of controlled waters is being, or is likely to be, caused...'

A key element of the Part IIA regime is the **Source-Pathway-Receptor** pollutant linkage concept. The meaning of each element is as follows:

SOURCE	PATHWAY	RECEPTOR
<p>The source of the contamination for example, industrial waste land with contaminated ground or water.</p> 	<p>The route that this contamination takes to reach the receptor, for instance via contaminated soil, water, vegetables.</p> 	<p>Receptors are eco-systems (plants, animals, organisms), property or controlled water bodies.</p> 

Without the clear identification of all three elements of the pollutant linkage, land cannot be identified as contaminated land under the regime. Contaminating substances may include:

- **metals and metallic compounds e.g. cadmium, arsenic, lead, nickel, chromium**
- **organic compounds e.g. oils, petrol, solvents**
- **gases e.g. methane, carbon dioxide, hydrogen sulphide**

Typical causes of land contamination include previous industrial or commercial usage, mining, and the land filling of waste. Land can also become contaminated due to its proximity to contaminated areas. However, contamination does not occur solely as a result of human activities and land can be contaminated as a result of its natural state. For example, elevated levels of arsenic in soil can result from the weathering of natural rocks and minerals.

4. Site Description

4.1 Site Location, Population, Historic/Current Use & Setting, Site Proposals

Location:

The proposed site lies within a semi-rural area at OS Grid Ref: SW 7283/4096.

Closest Main Population Centre:

Carharrack, Redruth.

Historic/Current Usage & Setting:

The historic Ordnance Survey (OS) map of 1888 shows the application area as lying within mining land belonging to Ting Tang Mine, a disused copper mine. All surrounding land consists of mine waste with shafts ranging from the north-east to the south-west. The Redruth to Chacewater mineral railway is located approximately 77m to the north-west.

1908: No significant changes occur to the site or surrounding area.

1946: This map edition indicates a small outbuilding located within the application bounds.

1974: This map shows the definitive outline of the present application area with the building still remaining within its boundaries. The mineral railway has been removed from this mapping data. Public available records indicate that the railway was closed in 1915 due to the decline of the mining industry and was finally dismantled circa 1960.

1975/1993: Sporadic residential dwellings have been constructed within the surrounding area.

No further OS mapping data is available after 1993.

Site Proposals:

Construction of a single residential dwelling with onsite parking and garden amenity area.

Please refer to section 6: Visual Site Inspection (including sub-sections 6.1 to 6.3) and Annex 2: Site Photographs for further information.

4.2 Details of Additional Site Reports

The following mine search report has been conducted on our behalf by Cornwall Consultants Ltd, Ref: RJH/CMS/121483, dated 15th May 2017.

The findings of the report state:

The property is situated within an area of extensive historic metalliferous mining activity. Our records indicate that an adit of the former Ting Tang Mine lies 47 metres east of the property. This feature is recorded or inferred from information on a mine plan. It is also recorded, or inferred from shown on a Geological Survey map.

This adit lies at a depth of approximately 30 metres and follows a crosscourse. The old Ordnance Survey maps show the area beneath the property to be covered in mine waste material which may obscure other surface mine features. A shaft is suspected to lie 10 metres northwest of the property, however, there are no records of the workings that it might be connected to.

The property does not lie within an existing Mineral Consultation Area, containing designated metalliferous mineral resources.

Risk:

Based on a detailed search and expert interpretation of our mining records archive we believe the risk to the property from subsidence relating to past extractive metalliferous mining is: **Moderate.**

We believe that the property could be affected by subsidence related to historic metalliferous mining and we are unable to dismiss this without further assessment.

The conclusions of the report state:

To further assess the risks to this property we recommend the following course of action: **Site Inspection.**

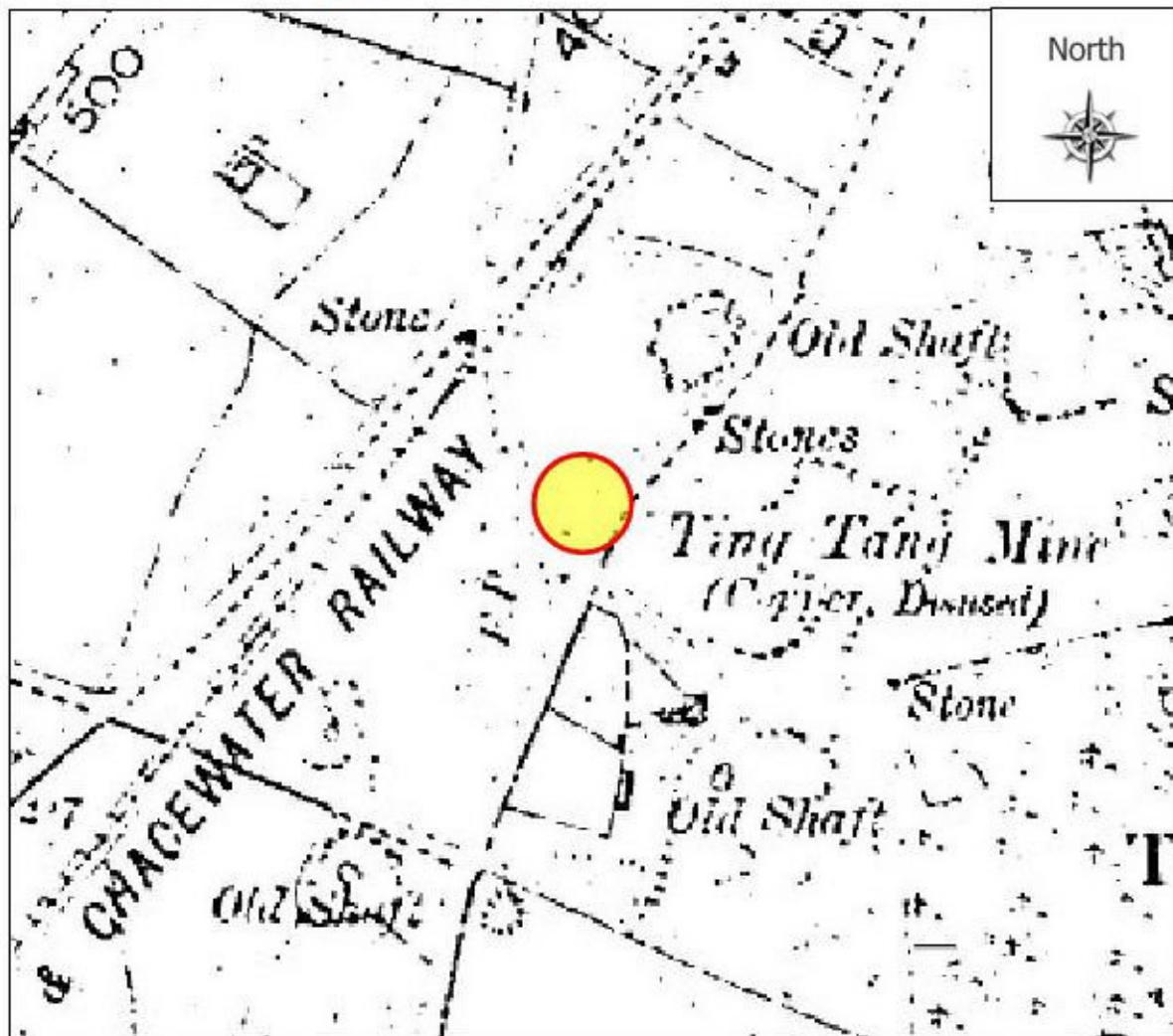
As a precautionary measure, the property should be inspected by a qualified surveyor or mining consultant to confirm the absence of any structural defects relating to ground movement. In addition, we advise that a mining consultant inspect any adverse ground conditions encountered during any development of the site.

For the full report please refer to Annex 3 of this report.

ASI would be pleased to offer a course of action should it be required.

5. Historic OS Mapping

Historical OS Map of 1909

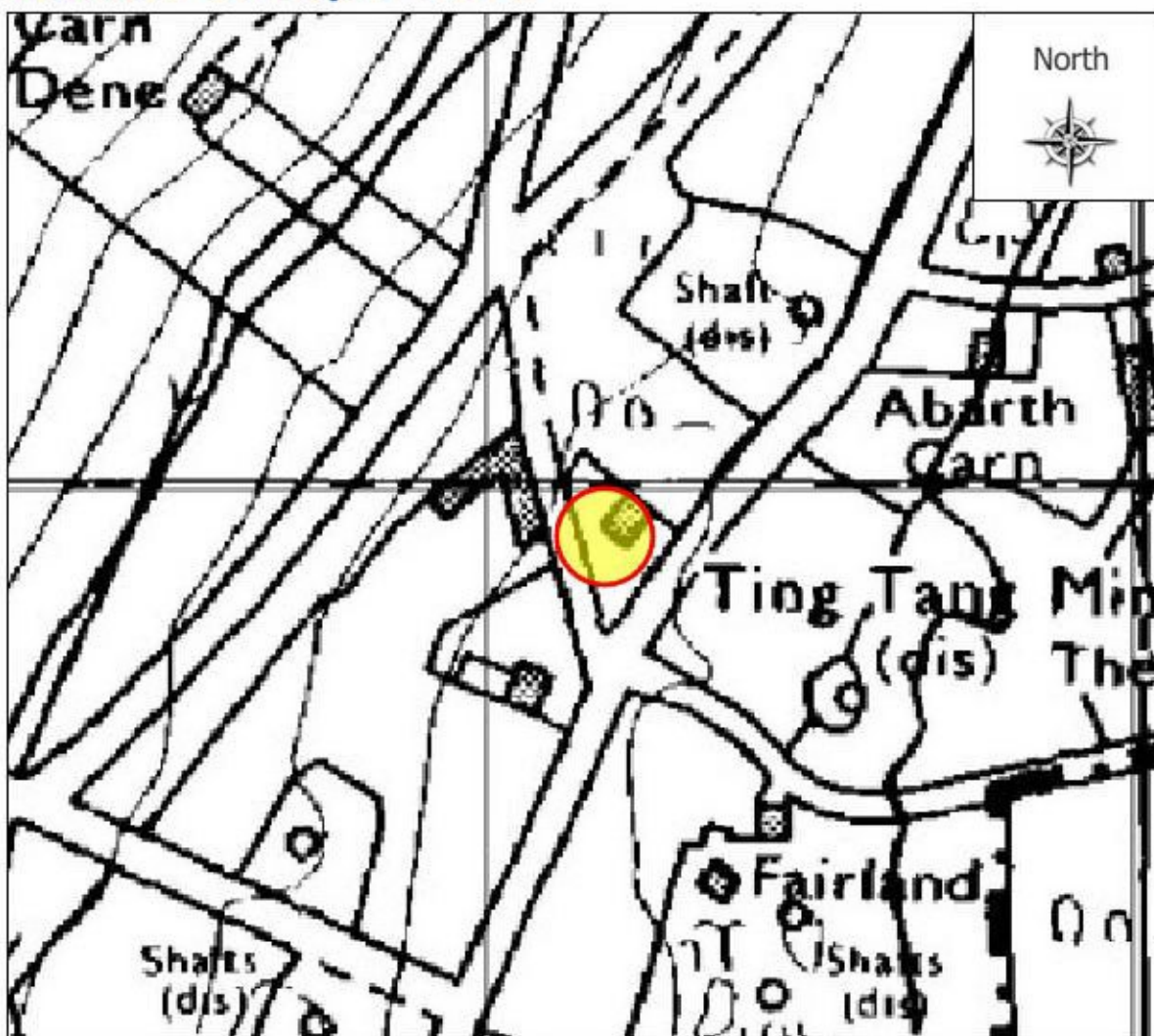


The historical OS map of 1909 shows the site as lying within mining land.

A footpath is shown to lie on the sites western boundary with shafts belonging to Ting Tang Mine lying from the north-east to the south-west.

Historic Ordnance Survey Map copyright 2019
Dated 1909. Survey scale: 1:10,560

Historical OS Map of 1974



The historical OS map edition of 1974 shows the site as an individual plot of land.

Ting Tang Mine and its disused shafts are still visible on this mapping data.

Additional OS map data referenced:
1888 1:2,500, 1:10,000 & 1:10,560 series to present day.

No further relevant OS mapping data is available for the site following circa 1993.

Historic Ordnance Survey Map copyright 2019 Landmark Information Group
Dated 1953 - 1954. Survey scale: 1:2,500

6. Visual Site Inspection

A walk over survey of the site was conducted on the 9th May 2019, with the weather conditions at the time of the survey being dry. The site was observed from within and outside of its boundaries (where possible) to identify any areas of concern on or adjacent to the property. Any items of note were photographed and recorded.

6.1 Site Layout & Information

The application area consists of an approximately triangular shaped plot of land occupying an estimated area of 416m². Currently the site has no defined access. Proposed access will be constructed via the eastern boundary via an unnamed roadway.

At the time of the walkover survey, the proposed development area consisted of a plot of open land, which is presently overgrown with shrubs and dense grass.

No features of note were recorded within the site which would be classified as generally unremarkable.

The boundaries of the property were recorded to be comprised of overgrown Cornish hedging, bounded by a rough track to the west, an unnamed roadway to the east, a neighbouring residential property situated to the north (Grove Vista), with the southern section lying at the junction between the track and roadway.

Following the survey, no contamination sources such as fuel storage tanks, fly tipped waste material or similar features were identified that could have a detrimental impact upon future development of the site. In addition, no naturally occurring, static or running water bodies were recorded, either within or in proximity to the site.

The natural topography of the land was recorded as sloping gently from the north-west to the south-east.

Please refer to section 6.2: Site Plan and Annex 2: Site Photographs for further details.

6.2 Site Plan

<p>Proposed site plan</p>	<p style="text-align: center;">North</p>
	<p>SITE:</p> <p>Land at, Grove Vista Trevarth Road Carharrack Redruth Cornwall TR16 5SE</p>
	<p>Site Inspection Date:</p> <p>9th May 2019</p>
	<p>Site Inspected by:</p> <p>Mr J.R Williamson</p> <p>Position: Site Investigation Manager</p>

Plan supplied and copyright to: tbs Cornwall Planning

Notes:

- Not to scale for diagrammatic purposes only.
- Site area outlined in red.
- Proposed site access indicated by the green arrow.
- Site perimeter estimated at 86m.
- Total site area estimated at 416m².

6.3 Surrounding Area

North	Neighbouring residential dwelling.
East	Trevarth Road.
South	Junction of Trevarth Road with unnamed road.
West	Unnamed road.

7. Environmental Setting

7.1 <u>Geology</u>	<p>The geological survey map (British Geological Survey 1:50 000 series, sheet 352 & BGS records) show the site as lying within sedimentary bedrock comprising of Hornfelsed (heat altered/metamorphosed) Slate and Siltstone of the Mylor Slate Formation, formed during the Devonian Geological Period.</p> <p>Metalliferous lode zones (metalliferous minerals that in-fill a fissure or vein within a rock formation) that have the potential to introduce elevated heavy metal levels into the surrounding ground horizon are not indicated within the site bounds, however lie throughout the site locality.</p>
7.2 <u>Mining Information</u>	<p>The site is shown to lie within historic metalliferous mining land comprising of mine waste spoil, which is indicated throughout the application area (see report section 4.2, Homecheck report page 10).</p>
7.3 <u>Hydrogeology</u>	<p>Geological records indicate that the property is sited over rocks that can form minor aquifers of intermediate permeability. These can be fractured or potentially fractured rocks, which do not have a high permeability, or other formations of variable permeability including unconsolidated deposits. Although these aquifers will seldom produce large quantities of water for abstraction, they are important both for local supplies and in supplying base flow to rivers.</p> <p>Overlying soils classification: Soils of intermediate leaching potential. (Environment Agency: Policy & Practice for the Protection of Groundwater/ Groundwater Vulnerability of Cornwall & Devon/ 1:100,000).</p>

7.4 <u>Water Abstraction</u>	<p>BGS mapping records indicate that there are no water boreholes within 250m of the site.</p> <p>Risk to groundwater considered low.</p>
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8. Homecheck Environmental Report Information - within 250m radius of site

See Annex 1: Environmental Report For Full Reference Details up to 250m

8.1 <u>Surface Water Features</u> (reference page 3)	The environmental report indicates that there are surface water features within 250m of the site locality.	
8.2 <u>Potential Pollution Sources</u> (reference pages 4 - 6)	Registered landfill sites BGS recorded landfill sites BGS recorded mineral sites Waste transfer Registered waste treatment or disposal site Local Authority recorded landfill sites Historical landfill site	None None None None None None None
(reference pages 7 - 8)	Integrated pollution control (IPC) regulations Control of major accident hazards Storage of hazardous substances Explosive sites Radioactive Substances Register Local Authority Pollution Prevention and Controls	None None None None None None
8.3 <u>Known Pollution Incidents</u> (reference pages 7 - 9)	The environmental report has indicated that there are no known pollution incidents located within 250m of the site.	
8.4 <u>Discharges to Water</u> (reference pages 7 - 8)	There are no identified discharges to water located within 250 metres of the site.	
8.5 <u>Contaminated Land Register</u> (reference page 5)	Contaminated land register entries & notices Contraventions	None None

<p>8.6 <u>Current Industrial Land Use</u></p> <p>(reference pages 10 & 11)</p> <p>PCA Potentially Contaminated Area Ref No.</p> <p>There are no identified 'current industrial land use' within 250m of the property.</p>	<p>None identified</p>
<p>Commercial/industrial land uses within 100m of the site have been considered within the Conceptual Site Model, located within section 9 of this report (area of highest risk). Should a land use be recorded that lies outside of 100m and has been identified to present a contamination risk to the property, such activities will be delineated within the CSM where appropriate.</p>	

<p>8.7 <u>Past Industrial Land Use</u></p> <p>(reference pages 10 & 11)</p> <p>PCA Potentially Contaminated Area Ref No.</p> <p>There are 3 identified 'past industrial land use' within 250m of the property.</p>	<p>PCA 4 Mining & quarrying (on site)</p> <p>PCA 5 Railways (north-west 77m)</p> <p>PCA 6 General quarrying (west 205m)</p>
<p>(reference pages 10 & 11)</p> <p>PIL Potentially Infilled Land Ref No.</p> <p>The Environmental Report has indicated that there are 2 recorded PIL areas within 250m of the property.</p>	<p><u>Non-water</u></p> <p>PIL 2, 3 Unknown filled ground (on site, west 205m)</p>
<p>Historic land uses within 100m of the site have been considered within the Conceptual Site Model, located within section 9 of this report (area of highest risk). Should a land use be recorded that lies outside of 100m and has been identified to present a contamination risk to the property, such activities will be delineated within the CSM where appropriate.</p>	

<p>8.8 Flooding (reference pages 12 - 14)</p>	<p>The site is not indicated to be affected by any type of flooding within 25m of the site area.</p> <p>Further information relating to flood risk zones can be located on the Environment Agency web site.</p>
<p>8.9 Radon Affected Zones (reference page 15)</p>	<p>The site lies within a radon affected area, it is indicated that over 30% of homes are at or above the action level.</p> <p>Radon is a natural gas found in soil and rocks. It has no colour, taste or smell. Levels vary from country to country, region to region and from house to house in the same street. In open spaces, when radon mixes with air, it is quickly diluted into the atmosphere. When air containing radon gas rises from the soil and rocks beneath your property it is possible it may migrate internally, primarily through cracks in floors, walls and gaps around service pipes.</p> <p>Generally a membrane of 300 micrometre (1200 gauge) polyethylene sheet (correctly installed) will be adequate to stop radon migration. Possible prevention measures may require the installation of an active radon ventilation system. We would recommend that advice is obtained from the Local Authorities regarding monitoring & protection.</p>
<p>8.10 Ground Stability Findings (reference page 16)</p>	<p>The British Geological Survey has identified the site as having a 'very low' potential for natural ground instability within 50 metres.</p>

9. Preliminary Environmental Risk Assessment/Conceptual Model: Showing Potential 'Source-Pathway-Receptor Linkage' Modes

POTENTIAL SOURCE	
See tables below - Potential Contamination Source.	
POTENTIAL PATHWAY	
Inhalation of dust & soil particles, inhalation of vapours, direct ingestion of soil & dust particles, dermal absorption (soil exposure), private water abstraction, ground water, aquifers, consumption of fruit & vegetables, radon gas (ground source migration pathways).	
POTENTIAL RECEPTOR	
Humans, eco-systems (plants, animals, organisms), property or controlled water bodies.	

9.1 Potential 'Onsite' Contamination Sources: Current & Past

See section 7.1 & 8.9 - Geology and Radon Affected Zones for additional information.

CURRENT/PAST CONTAMINATION SOURCES : ONSITE	(1,2,3) number of entries/features identified HC - Homecheck Ref	0m (onsite)
POTENTIAL CONTAMINATION SOURCE	POTENTIAL CONTAMINANTS & PATHWAY LINKAGE	POTENTIAL RISK TO RECEPTORS
Local geology	Naturally occurring heavy metals: potential migration via soil & water. Probability: potential exists due to site lying within mineralised zone (Ref: BGS 1:50 000 series, sheet 352 BGS records, report section 4.2).	Low/medium
Mining & quarrying (1) HC Ref: 4	Heavy metal contaminants: potential migration via soil & water. Probability: potential exists due to historic mining activity.	Medium/high
Infilled land (1) HC Ref: 2	Unknown fill material, probable mine spoil: potential migration via soil & water. Probability: potential exists due to historic mining activity.	Medium/high
Potential radon affected area, HC Ref: section 3	Radon gas migration within buildings: potential migration via air. Probability: over 30% of homes above action level, recommend 'Full Radon Protection Measures necessary'.	High

9.2 Potential 'Offsite' Contamination Sources: Current

See Section 8.6 - Current Industrial Land Usage for additional information.

CURRENT CONTAMINATION SOURCES : OFFSITE		(1,2,3) number of entries/features identified HC - Homecheck Ref	Increasing distance from site
POTENTIAL CONTAMINATION SOURCE	POTENTIAL CONTAMINANTS & PATHWAY LINKAGE		POTENTIAL RISK TO RECEPTORS
None identified	None identified		None identified
Commercial/industrial activities lying beyond 100m distance (where identified) have been considered to be of negligible risk and are not included within the conceptual site model.			

9.3 Potential 'Offsite' Contamination Sources: Past

See Section 8.7 - Past Industrial Land Usage for additional information.

PAST CONTAMINATION SOURCES : OFFSITE		(1,2,3) number of entries/features identified HC - Homecheck Ref	Increasing distance from site
POTENTIAL CONTAMINATION SOURCE	POTENTIAL CONTAMINANTS & PATHWAY LINKAGE		POTENTIAL RISK TO RECEPTORS
Railways (1) HC Ref: 5	Heavy metals, hydrocarbons, PAHs: potential migration via soil & water. Probability: unlikely due to distance from site.		Low (NW 77m)
Historic activities lying beyond 100m distance (where identified) have been considered to be of negligible risk and are not included within the conceptual site model.			

10. Conclusions & Recommendations

Having conducted an onsite inspection and research relating to land contamination at the site locality, we can conclude that the potential for contamination does exist, with the property being classified as at medium to high risk from the ground horizon and at high risk from probable radon gas migration.

For determinations relating to possible source contaminants within and in proximity to the site, please refer to section 9: Preliminary Environmental Risk Assessment/Conceptual Model Showing Potential Source-Pathway-Receptor Linkage Modes.

As possible risks have been established, we have the following recommendations to make with regards the sites future development.

Soil Horizon

A contamination risk has been identified within the ground horizon at the application site, due to the site lying within an area which has witnessed extensive historic mining activity associated to the abandoned Ting Tang Mine. Historic mining records and information from the Homecheck environmental report have indicated that the site was once overlain by former mining spoil and it is therefore probable that mine waste remains onsite. For further details please refer to report section 4.2: Details of Additional Site Reports and page 10 of the Homecheck report.

We would therefore advise, due to the sensitive end-use being for a residential development, that a preliminary soil sampling investigation is undertaken to assess the level of potential contaminants, with the primary risk being from a likely excess of heavy metal contaminants associated to the above source. This should be in the form of a Phase 2 Site Investigation report. Should this demonstrate that the site is not contaminated then no further works will be required.

If the additional Phase 2 reporting demonstrates that the property is at risk, further reporting and additional testing may be required before the development can progress.

We do not recommend that ground water samples be obtained due to all potable water being supplied via mains water supply. However, should mobile contaminants be identified within the surface profile (oils, or similar), additional testing will be required. Where contamination is confirmed, we would consider it advisable to install contaminant resistant PE/Barrier water supply pipes set within suitable ducting.

On completion of the Phase 2 on-site testing works and in conjunction with the proposed site layout, a Phase 3 Remediation Strategy Report will be required to demonstrate how the site can be safely developed in respect of the end users.

Please note that a Phase 4 Site Verification and completion inspection will need to be undertaken upon finalisation of all building works. This will be issued upon completion of the development works in order to establish that the Phase 3 recommendations have been satisfied.

Radon Gas

We would recommend that due to the site lying within a potential radon affected zone where over 30% of homes are above the action level, that full radon gas protection be incorporated within any new building designs. Such measures would require the installation of a passive system such as a radon proof membrane with adequate under floor ventilation to disperse possible radon gas migration, or an active fan based ventilation system.

Excess Soil Disposal

Under government legislation, following the completion of the Phase 2 Site Investigation works and where contamination has been identified, a Waste Classification Assessment (WCA) will need to be undertaken should excess waste be generated for landfill disposal. The WCA report will classify whether the waste material is 'non hazardous' or 'hazardous' for landfill disposal purposes, and can be utilised within the phased land assessment process.

It should be noted that any removal of material, classified as contaminated or suitable for use, must be by a licensed haulier and disposed of at an accredited landfill facility, unless otherwise agreed. All waste transfer notes must be kept for future reference.

Unexpected Contamination

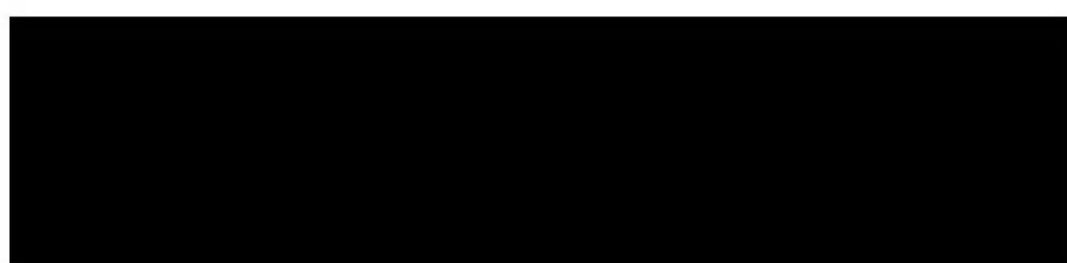
Should unrecorded contamination be encountered during the properties continued development phase, in the form of buried tanks, additional buried waste material, olfactory odours or obvious pollutants, we would advise that all works must stop within the suspect area and contact with ourselves and the Local Authorities be established before work is initiated within the area of concern.

Following the above recommendations, we have no further comments to make within the scope of this report.

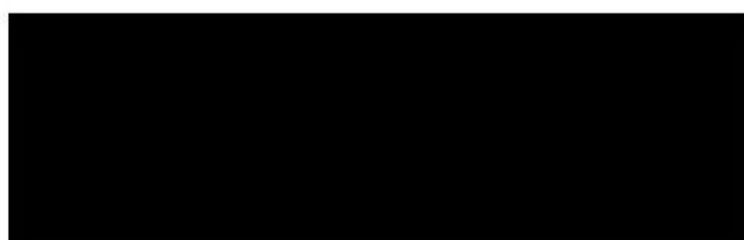
11. Notes

1. The conclusions and recommendations sections of this Phase 1 Contaminated Land Survey relates to the form and extent of development outlined herein for this specific property only and they should not be taken as suitable for any other form or extent of development within the boundaries of this property without further consultation with Approved Site Investigations Ltd.
2. This report only relates to the area defined in the attached environmental report.
3. The report should not be used in any way in connection with adjacent properties.
4. In respect of the archival mining report (if supplied) and the environmental report (Landmark/Groundsure data), the information is subject to the limitations and terms as defined in those reports. The supplier cannot guarantee the accuracy or completeness of the data provided, nor does the supplier guarantee to identify all the factors that may be relevant.
5. Approved Site Investigations Ltd cannot be held liable for contamination sources that may be introduced to the site, either within, or outside of the site boundaries subsequent to the writing of this contaminated land survey report.
6. This report is confidential to the named client(s) and we have no liability toward any person not party to commissioning this report.
7. This report may not be reproduced or distributed to third parties without our prior permission other than to directly facilitate the sale or development of the property concerned.

Unless otherwise expressly stated, nothing in this report shall create or confer any rights or other benefits pursuant to the Contracts (Rights of Third Parties) Act 1999 in favour of any person other than the person commissioning this report.



Approved Site Investigations Ltd



Verified by:

Mr. J.R Williamson
(Managing Director)
HND Science (Industrial Mining Geology), Dip CSM

12. Annexes

- Annex 1 - Environmental Report**
- Annex 2 - Site Photographs**
- Annex 3 - Historic Mine Search**
- Annex 4 - References & Planning Procedure Guide**

Annex 1 - Environmental Report

Homecheck Environmental



Contamination Risk FURTHER ACTION

Professional Opinion

In the opinion of Argyll Environmental Consultants, this report requires Further Action. Please refer to the Professional Opinion page and Section 1 for further information.



Flood Risk: None Identified

Refer to Section 2 for further information

Conveyancer Guidance

While this report may have identified areas at risk of flooding within 250m of the search centre, we consider there to be no significant risk of flooding to the property. Please refer to Section 2 for further information.



Radon: IDENTIFIED

Refer to Section 3 for further information



Ground Stability: None Identified

Refer to Section 4 for further information



Other Influential Factors:

Refer to Section 5 for further information

Environmental Constraints: None Identified

See Section 5a

Report issued for the property at
**Grove Vista, Trevarth Road
Carharrack
REDRUTH
TR16 5SE**

Report Reference
203495215_1_1

National Grid Reference
172830 40970

Customer Reference
A1599_HCP

Report Date
10 May 2019

Contact Details

If you require assistance please contact your Search Provider or phone Customer Services on 0844 844 9966 or email helpdesk@homecheck.co.uk

Landmark Contribution

By purchasing this report, the recipient may be eligible for Remediation Contribution of up to £60,000 if served with a Remediation Notice by the Local Authority. Such a notice may require the homeowner to pay for all, or contribute to, the remediation of the property. For more information see Landmark's Terms and Conditions.



Professional Opinion

Contamination Risk

FURTHER ACTION

The Homecheck Professional report dated 10th May 2019 and reference 203495215_1_1, A1599_HCP has been prepared for

**Grove Vista, Trevarth Road
Carharrack
REDRUTH
TR16 5SE**

A review of the available historical map data has identified that the centre of the search is located on or within 25 metres of unknown filled ground.

The data examined in this risk assessment indicates that there may be a potential source of contamination which may have implications for the property.

In our opinion, there is the potential that the property could be described as "contaminated land" as defined by Part 2A of the EPA 1990.

The professional opinion refers to Section 1 of this report and should always be read in conjunction with the full text of that report. No physical site inspection or survey has been carried out or is proposed.

Approved by

Argyll Environmental Ltd



Next Steps

A re-review of the report can be requested if you have further information relating to the site. See below for instructions on how to submit this and for further information.

Submit Further Information and Request a Re-Review

In completing this report Argyll Environmental Ltd have undertaken a review of data made available to them. No site inspection, further enquiries or investigation of ground conditions has been completed as part of this assessment.

1) In order to potentially revise the risk assessment provided, additional information will need to be reviewed. This could include:

NHBC, LABC or Premier Guarantee Certificates where contaminated land cover has been provided.

Local Authority Environmental Health Department: obtain recent information regarding relevant details under the Council's Part 2A strategy including, any past industrial land uses, pollution incidents/records of contamination, past site investigations/remediation, and any other concerns regarding ground conditions on and adjacent to the property.

Local Authority Planning Department: obtain information on the development of the property (i.e. a summary planning history) identifying any existing reports/information on any environmental conditions attached to planning permissions (e.g. a site investigation or remediation work) confirming that these conditions have been satisfied.

Petroleum Licensing Officer / Trading Standards Department: for information on a property with potential bulk fuel storage (i.e. former petrol filling station) obtain information to confirm if there are any records held including details of storage tank numbers, volumes, dates of integrity testing, details of any past leakages or spills and subsequent decommissioning of former storage tanks.

If you have obtained any of the above further information and would like to take advantage of our free re-review service, please send it to helpdesk@landmark.co.uk or alternatively by post to **Customer Services, Landmark Information Group, Imperium, Imperial Way, Reading, Berkshire RG2 0TD.**

Any relevant information will be reviewed within 2 working days and a revised risk assessment opinion issued. (Note: a time charge will be discussed in advance for any significant volumes of information).

2) If you do not have any additional information, a follow up report can be obtained from Argyll Environmental Ltd, who will carry out further enquiries on your behalf. This report will cost £250+ VAT. This cost includes the Local Authority's own search fees and may take up to 25 working days, dependant on the Authority's response time. Please email: orders@argyllenviro.com quoting the report reference number so that we can process your request efficiently.

3) After the above enquiries, if further information is still required to address the potential contamination issue on site, a Sampling Investigation Report could be considered. This report includes a site visit, soil sampling and a quantitative risk assessment. The cost is dependent on location, scope and timescale and is usually completed within 15-25 working days. Please email helpdesk@landmark.co.uk with your specific requirements.

If you have any questions please don't hesitate to contact us on **0844 844 9966** or helpdesk@landmark.co.uk.

Contents and Summary of Findings



Site Location



Section 1: Contamination Risk Findings

Contamination Risk	0-25m	25-250m	250-500m	See Section
Designated Contaminated Land	No	No	No	1a
Landfill and Waste	No	No	Yes	1b
Potentially Contaminative Activities	No	No	No	1c
Known Pollution Incidents	No	No	No	1d
Other Potential Contaminative Land Uses	Yes	Yes	n/a	1e



Section 2: Flood Findings

Flood	0-25m	25-250m	See Section
River Flooding	No	No	2a
Coastal Flooding	No	No	2b
Surface Water Flooding	No	Yes	2c



Section 3: Radon Findings

Radon	Result	See Section
Radon Affected Property	Yes	3



Section 4: Ground Stability Findings

Ground Stability	Result	See Section
Man-Made Factors	No	4a
Natural Factors	No	4b



Section 5: Other Influential Factors

Other Influential Factors	Result	See Section
Environmental Constraints	No	5a

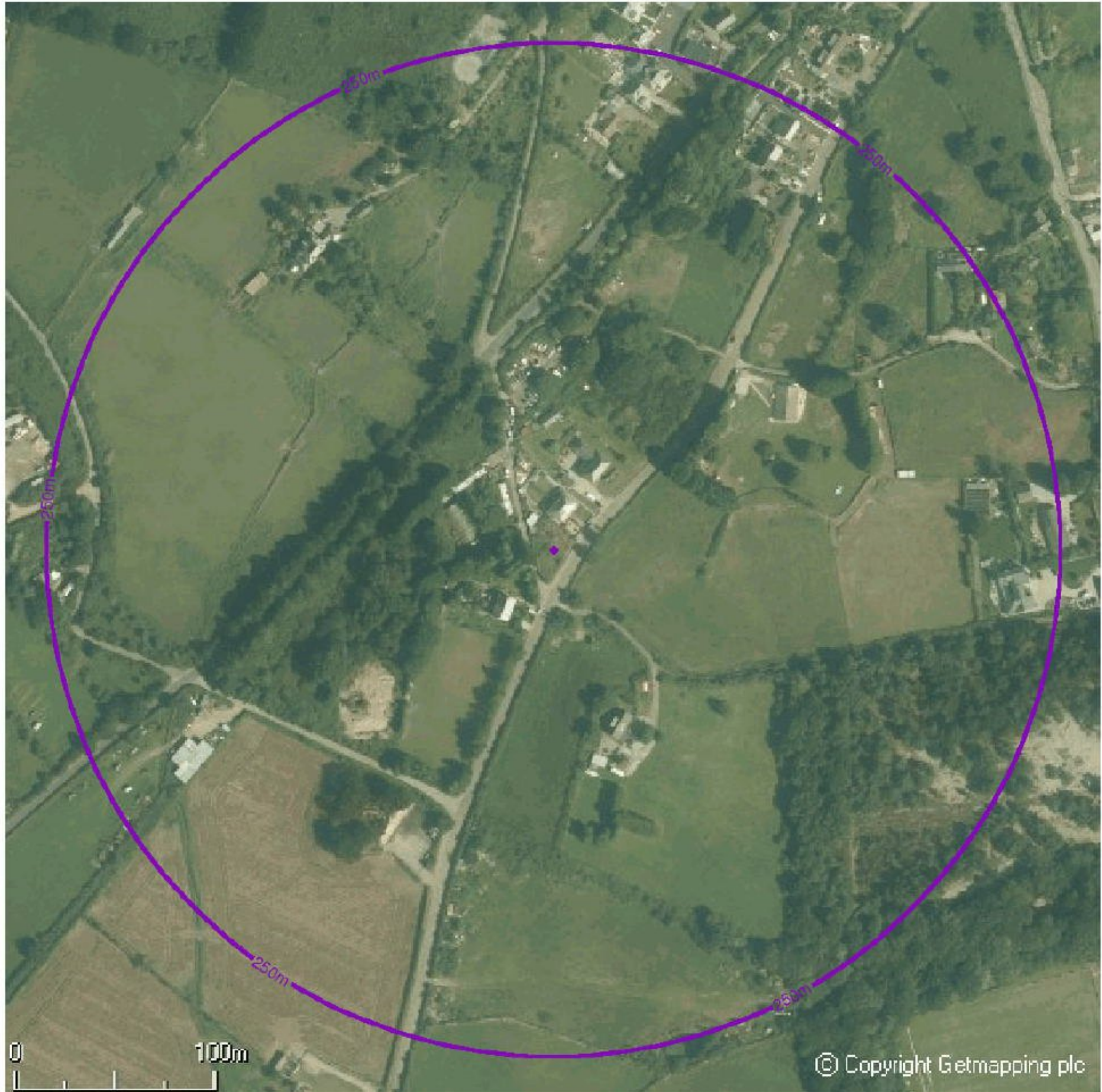


Site Location



Aerial Photograph

The photograph below shows the location of the site to which this report relates.



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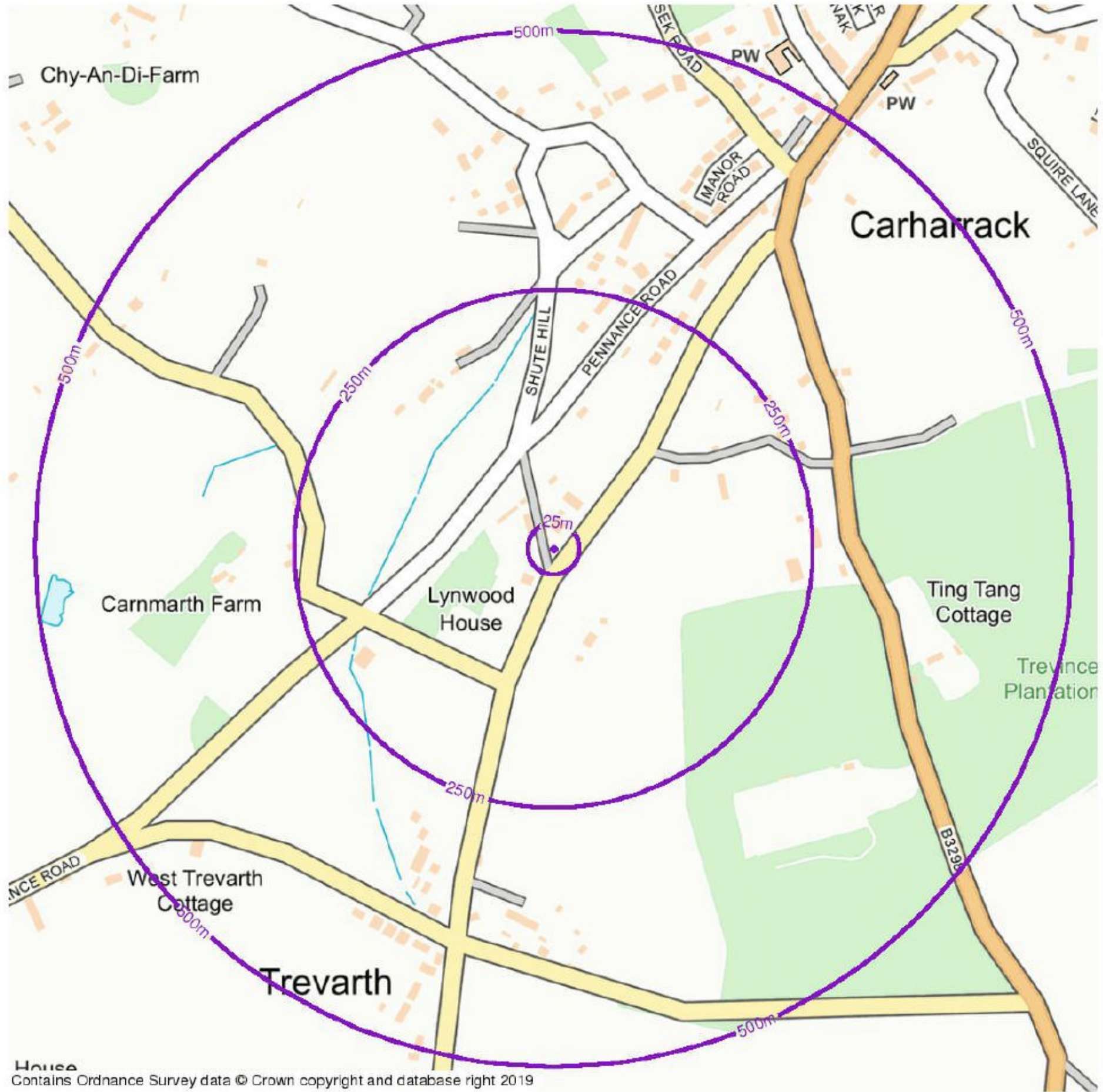
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Location Map

The map below shows the location of the site to which this report relates.



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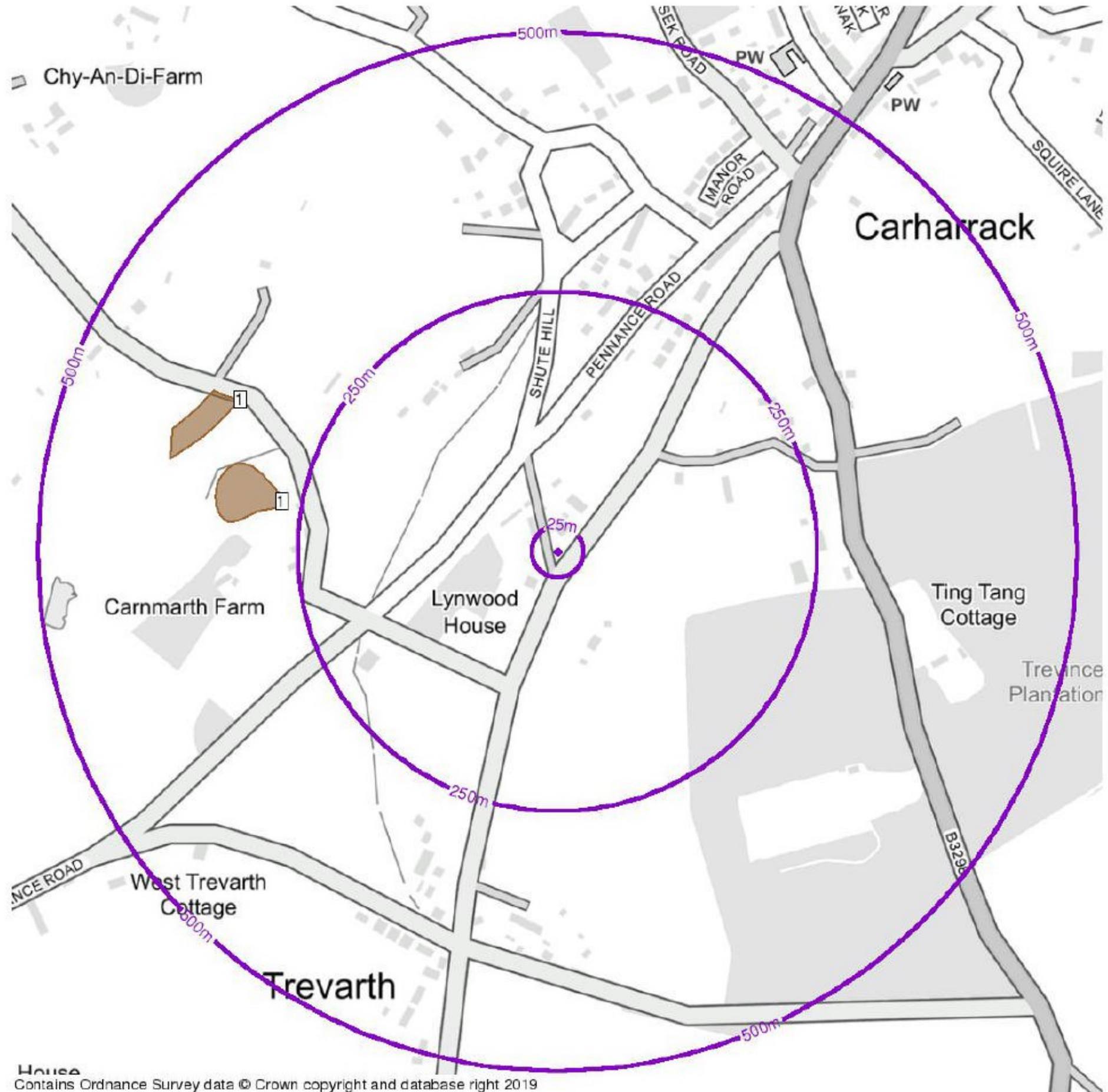
Section 1: Contamination Risk Findings

The whole of section 1 deals with potential sources of contamination and provides the information by which this report has either been passed or referred for assessment.



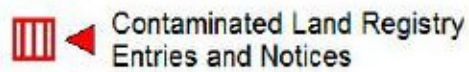
Section 1a and 1b: Information Map

The map detailed below shows the location of the Designated Contaminated Land and Landfill and Waste features highlighted within sections 1a and 1b of this report.



House
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Section 1a



Section 1b

- Registered Landfill Sites
- Registered Landfills (Potential Buffer)
- BGS Recorded Landfill Sites
- Local Authority Recorded Landfill Sites
- Historical Landfill Sites

- Permitted Waste Sites - Authorised Landfill Site Boundaries
- Environmental Permitting Regulations - Waste
- Integrated Pollution Control Registered Waste Sites
- Registered Waste Treatment or Disposal Sites
- Registered Waste Transfer Sites

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Section 1a: Designated Contaminated Land

The data within this section tells you whether your property or surrounding area has been identified by the Local Authority as "Contaminated Land" under the Environmental Protection Act 1990. Should there be an indication of contamination, it is not necessarily a cause for concern. Your report will be assessed by our professional environmental consultants who will advise you what, if any, considerations need to be made should you proceed with the property purchase.

Enquiry	Result
Has any contaminated land been identified within 500m of the property?	No

Map ID	Reference	Location	Details	Distance	Contact
--------	-----------	----------	---------	----------	---------

Contaminated Land Register Entries and Notices

No factors identified for this property

Section 1b: Landfill and Waste

The information in this section is telling you about active and historic landfill and waste sites within 500 metres of the property. Having a landfill or waste site near your property does not necessarily mean that you or the property will be affected. However, it is something you need to be aware of, because landfill and waste can have a detrimental effect on the surrounding environment, house value and health. A closed landfill/waste site should be given equal consideration to an active site, because of landfill by-products. For instance, landfill with lots of organic material can continue to produce odours and gas for many years.

Enquiry	Result
Have any landfill and waste sites been identified within 500m of the property?	Yes

Map ID	Reference	Location	Details	Distance	Contact
--------	-----------	----------	---------	----------	---------

Registered Landfill Sites

No factors identified for this property

BGS Recorded Landfill Sites

No factors identified for this property

Local Authority Recorded Landfill Sites

No factors identified for this property

Local Authority Recorded Landfill Coverage

The following list details the Local Authorities that cover the search area who have made landfill data available:

Kerrier District Council	- Has no landfill data to supply	3
Cornwall County Council	- Had landfill data but passed it to the relevant environment agency	4
Carrick District Council	- Has supplied landfill data	5

For further information regarding the availability of Local Authority Recorded Landfill data you may wish to forward enquiries to one or more of the contacts indicated above.

Historical Landfill Sites

1	Name: Carnmarth Reference: EAHLD08366	Lanner, Redruth	Specified Waste Type: Not Supplied Date of Issue: Not Supplied First Input Date: 31st December 1985 Last Input Date: Not Supplied Boundary Quality: As Supplied Positional Accuracy: Positioned by the supplier	271m	1
---	--	-----------------	--	------	---

Permitted Waste Sites - Authorised Landfill Site Boundaries

No factors identified for this property

Environmental Permitting Regulations - Waste

No factors identified for this property

Integrated Pollution Control Registered Waste Sites

No factors identified for this property

Registered Waste Treatment or Disposal Sites

No factors identified for this property

Registered Waste Transfer Sites

No factors identified for this property

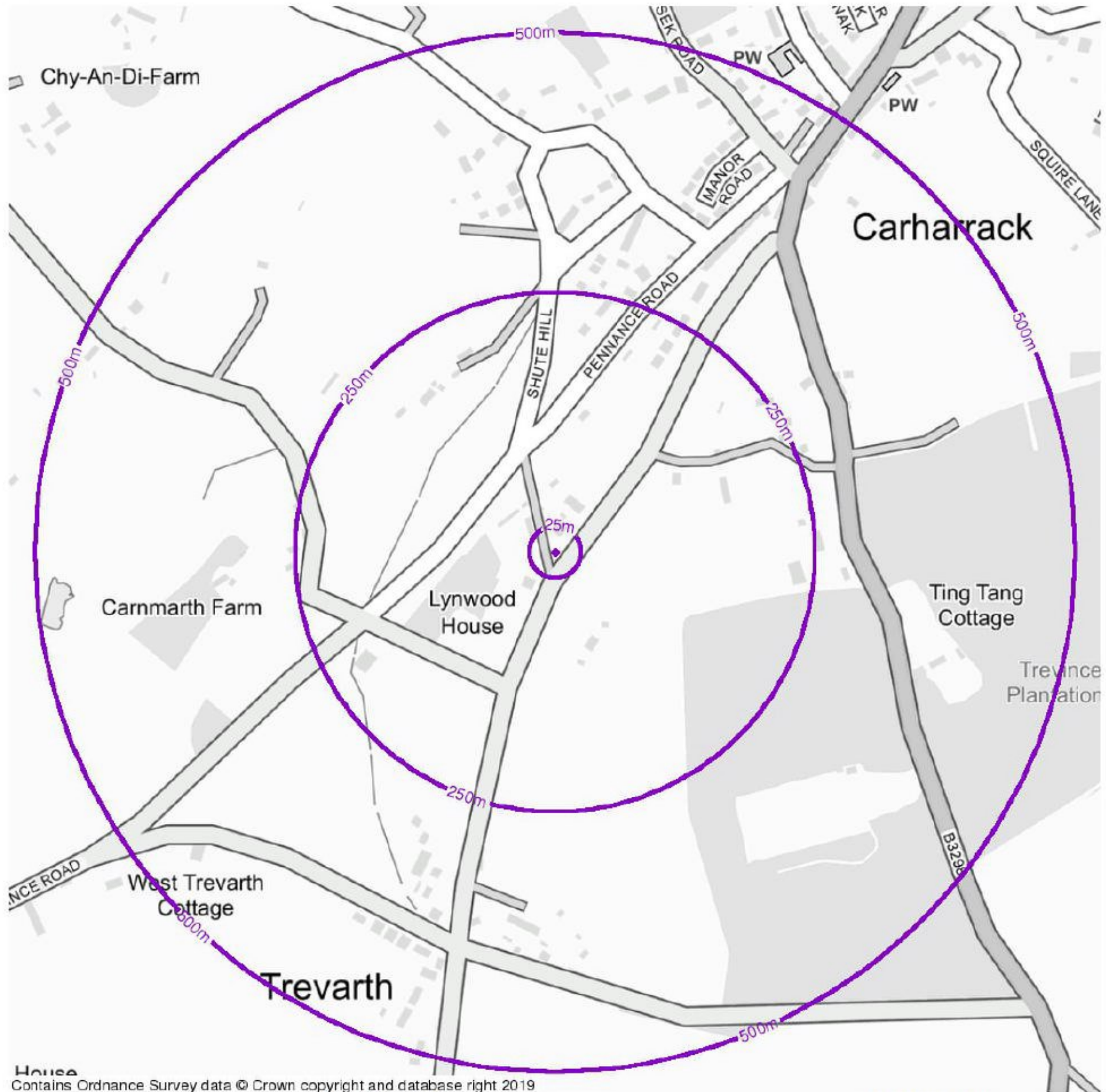
Next Steps

If you would like any further information in respect of the above findings we recommend that you get in touch with those listed in the 'Useful Contacts' section. Each contact reference shown in the above table relates to detailed contact information contained near the back of this report. Further information is also available in the 'Useful Information' section.



Section 1c and 1d: Information Map

The map detailed below shows the location of the Potentially Contaminative Activities and Known Pollution Incidents features highlighted within sections 1c and 1d of this report.



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Section 1c

- Local Authority Pollution Prevention and Controls
- Local Authority Integrated Pollution Prevention and Control
- Integrated Pollution Controls
- Environmental Permitting Regulations - Industry
- Consent to Discharge to Controlled Waters

- Radioactive Substances Register
- Planning Hazardous Substance Consents
- Control of Major Accident Hazards Sites (COMAH)
- Notification of Installations Handling Hazardous Substances (NIHHS)
- Explosive Sites

Section 1d

- Local Authority Pollution Prevention and Control Enforcements
- Enforcement and Prohibition Notices
- Planning Hazardous Substance Enforcements
- Prosecutions Relating to Authorised Processes
- Environmental Pollution Incidents
- Prosecutions Relating to Controlled Waters

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Section 1c: Potentially Contaminative Activities

This section describes current and historic licensed activities within 500 metres of the property, which have the potential to cause contamination or have an impact on the environment. The licensed activities could range from pollution to air, land or water; storage or disposal of radioactive substances; or storage of hazardous or explosive materials. Licences may no longer be active, but the nature of the past activity means it could still have an impact.

Enquiry	Result
Have any potentially contaminative activities been identified within 500m of the property?	No

Map ID	Reference	Location	Details	Distance	Contact
--------	-----------	----------	---------	----------	---------

Local Authority Pollution Prevention and Controls

No factors identified for this property

Local Authority Integrated Pollution Prevention And Control

No factors identified for this property

Integrated Pollution Controls

No factors identified for this property

Environmental Permitting Regulations - Industry

No factors identified for this property

Consent to Discharge to Controlled Waters

No factors identified for this property

Radioactive Substances Register

No factors identified for this property

Planning Hazardous Substance Consents

No factors identified for this property

Control of Major Accident Hazards Sites (COMAH)

No factors identified for this property

Notification of Installations Handling Hazardous Substances (NIHHS)

No factors identified for this property

Explosive Sites

No factors identified for this property

Section 1d: Known Pollution Incidents

The data within this section describes unpermitted activity in your area (e.g. polluting incidents, or exceedance of permitted allowance) where the activity led to a prosecution or enforcement of regulations. Whilst all of these records are historic, the nature of the incident may have long term effects.

Enquiry	Result
Have any known pollution incidents been identified within 500m of the property?	No

Local Authority Pollution Prevention and Control Enforcements

No factors identified for this property

Enforcement and Prohibition Notices

No factors identified for this property

Planning Hazardous Substance Enforcements

No factors identified for this property

Prosecutions Relating to Authorised Processes

No factors identified for this property

Environmental Pollution Incidents

No factors identified for this property

Prosecutions Relating to Controlled Waters

No factors identified for this property



Section 1e: Information Map

The map detailed below shows the location of the Other Potential Contaminative Land Uses features highlighted within section 1e of this report.



- | | |
|--|---|
| ✘ Fuel Station Entries | ☑ Potentially Infilled Land (Non-Water) |
| ★ Contemporary Trade Directories | ☑ Potentially Infilled Land (Water) |
| ⊕ Former Marshes | ☑ Potentially Contaminative Industrial Uses (Past Land Use) |
| ▼ Historical Tanks and Energy Facilities | |

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Section 1e: Other Potential Contaminative Land Uses

This section describes either current or historic activity, which could be considered to be contaminative. This section makes no statement about whether the activity requires a licence; however our environmental experts deem that the activities described in this section could lead to potential contamination. The information is taken from a variety of sources including trade directories, Landmark's extensive historical map collection and analysis of historic activity. Records are highlighted due to the potential for contamination to exist.

Enquiry	Result
Have any other potential sources of contamination been identified within 250m of the property?	Yes

Map ID	Reference	Location	Details	Distance	Contact
--------	-----------	----------	---------	----------	---------

Fuel Station Entries

No factors identified for this property

Contemporary Trade Directory Entries

No factors identified for this property

Former Marshes

No factors identified for this property

Potentially Infilled Land (Non-Water)

2	Not Supplied	Not Supplied	Unknown Filled Ground (Pit, quarry etc) Map Published Date: 1993	0m	-
3	Not Supplied	Not Supplied	Unknown Filled Ground (Pit, quarry etc) Map Published Date: 1993	205m	-

Potentially Infilled Land (Water)

No factors identified for this property

Potentially Contaminative Industrial Uses (Past Land Use)

4	Not Supplied	Not Supplied	Class: Mining & quarrying general Map Published Date: 1888	0m	-
5	Not Supplied	Not Supplied	Class: Railways Map Published Date: 1888 - 1938	77m	-
6	Not Supplied	Not Supplied	Class: General quarrying Map Published Date: 1888	205m	-

Historical Tanks And Energy Facilities

No factors identified for this property

Next Steps

If you would like any further information in respect of the above findings we recommend that you contact our Customer Services Team, whose details can be found in the 'Useful Contacts' section of this report. Further Information is also available in the 'Useful Information' section.



Section 2: Flood Findings

The whole of this section deals with potential sources of flooding that may impact the property.



Section 2a and 2b: River and Coastal Flood Map

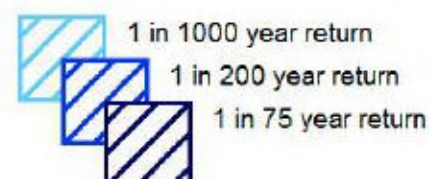
The map detailed below shows the location of potential river and coastal flood risk. The potential risk has been modelled on the basis of an event occurring on average every 75, 200 or 1000 years.



River Flooding



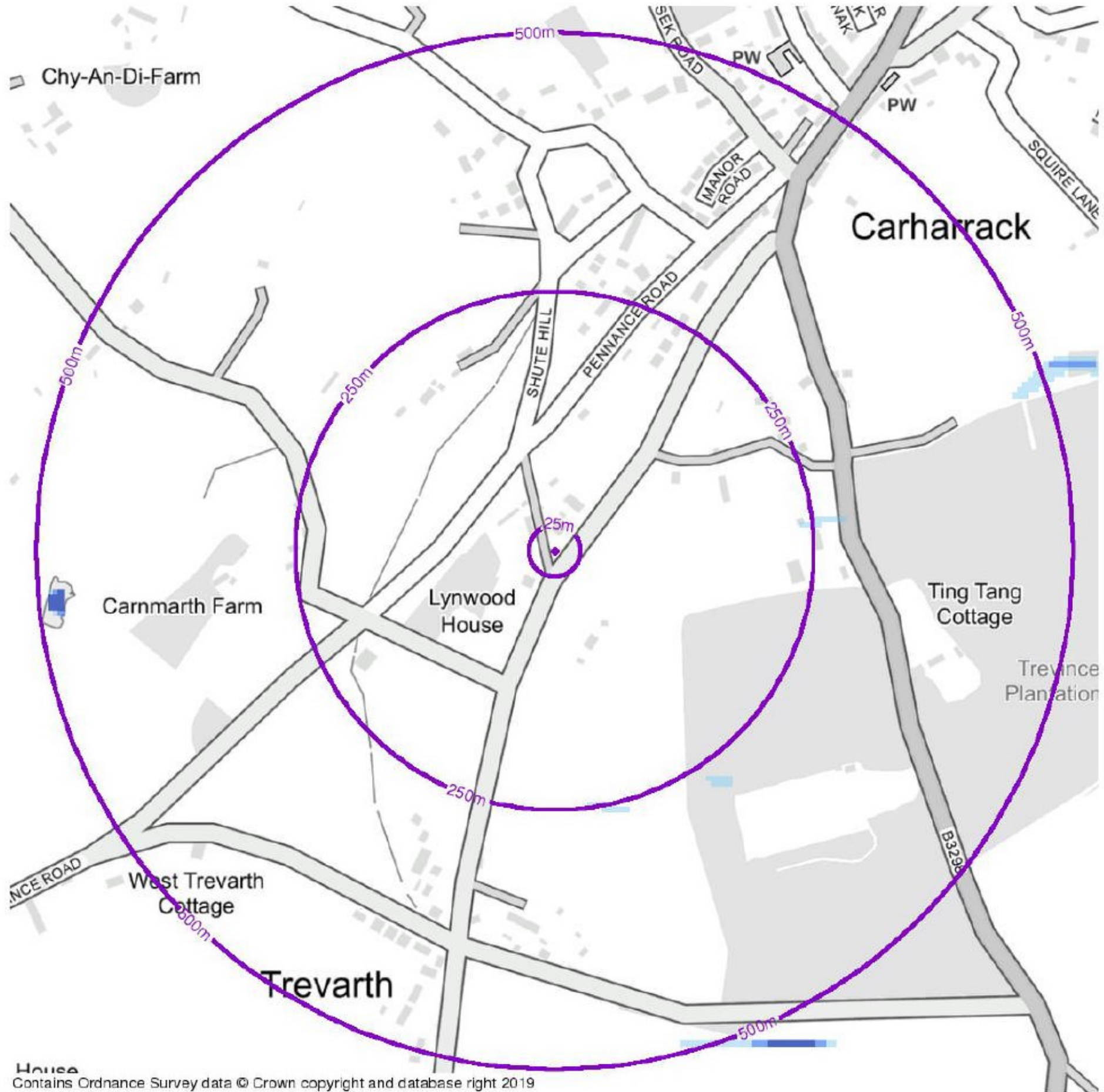
Coastal Flooding





Section 2c: Surface Water Flood Map

The map detailed below shows the location of potential surface water flood risk. The potential risk has been modelled on the basis of an event occurring on average every 75, 200 or 1000 years.



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Surface Water Flooding



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Section 2a: River Flooding

River flooding mainly happens when the river catchment (that is the area of land that feeds water into the river and the streams that flow into the main river) receives greater than usual amounts of water (for example through rainfall or melting of snow). The amount of runoff depends on the soil type, catchment steepness, drainage characteristics, agriculture and urbanisation as well as the saturation of the catchment. The extra water causes the level of the water in the river to rise above its banks or retaining structures.

Enquiry	Result	Contact
Is there a potential risk of river flooding within 250m of the property?	No	-

Section 2b: Coastal Flooding

Coastal flooding is the inundation of land areas along the coast caused by sea water rising above normal tidal conditions. Coastal flooding can arise from a combination of high tides, wind induced tidal surge, storm surge created by low pressure and wave action.

Enquiry	Result	Contact
Is there a potential risk of coastal flooding within 250m of the property?	No	-

Section 2c: Surface Water Flooding

Surface water flooding results from rainfall running over ground before entering a watercourse or sewer. It is usually associated with high intensity rainfall events (typically greater than 30mm per hour) but can also occur with lower intensity rainfall or melting snow where the ground is already saturated, frozen, developed (for example in an urban setting) or otherwise has low permeability.

Enquiry	Result	Contact
Is there a potential risk of surface water flooding within 250m of the property?	Yes	-

Next Steps

In order to gain more detailed information on the type and likelihood of your property being impacted by a flood event, and the potential impact on insurance, we recommend that you purchase our Homecheck Professional Flood Report.

If you would like more information please contact your Search Provider or our Customer Services Team on **0844 844 9966** or email **helpdesk@homecheck.co.uk**.

Flood data provided by JBA Risk Management Limited. © Copyright JBA Risk Management Limited 2008-2019



Section 3: Radon Findings

The information within this section tells you whether the property is located in a radon affected area. Radon is a radioactive gas which occurs naturally in rocks and soils. You cannot see, hear, feel or taste it. Exposure to particularly high levels of radon may increase the risk of developing lung cancer, and is therefore something you need to be aware of or should consider.

Enquiry	Result	Contact
Is the property in a radon affected area?	The property is in a radon affected area, as over 30% of homes are above the action level	2
What level of radon protection measures for new dwellings or extensions to existing ones is required for the property?	Full radon protective measures are necessary in the construction of new dwellings or extensions	2

Next Steps

The level of radon concentration can only be established by having the building tested. Action should be taken if the indoor radon level is measured and found to be above 200 becquerel's per cubic meter. If you would like any further information we recommend you contact Public Health England whose details can be found in the 'Useful Contacts' section of this report.

Further Action

Airtech Environmental Systems can advise on radon testing kits, which cost £39.36 including VAT and can run from 7 days to 3 months. They also have a team of surveyors on hand to provide recommendations and advice for any properties above the target level of 100 becquerel's per cubic meter or action level of 200 becquerel's per cubic meter. Airtech Environmental Systems can provide a report, recommendations and a quotation for any recommended works. For more detailed information please call their free-phone number 0800 378017.



Section 4: Ground Stability Findings

This section provides summary information on factors that could affect the ground stability of the property. It considers both man-made factors (e.g. mining activity) and natural hazards (e.g. geological stability).

Section 4a: Man-Made Factors

Enquiry	Result	Contact
Is the property within 25m of a Coal Mining Affected Area?	No	-

Section 4b: Natural Factors

Enquiry	Result	Contact
What is the potential for natural ground instability in the area within 50m of the property?	Very Low	-
<p>Comment: The British Geological Survey has assessed the area of search as having very low potential for natural ground instability. This does not necessarily mean there is cause for concern in terms of the property's stability. Active subsidence will be dependent on local conditions, such as the proximity of trees or areas where trees have been removed, which require an inspection of the site to identify the nature of the ground on which the property is built. A house buyers survey is advised to look for signs of property damage that may indicate poor natural ground conditions.</p>		



Section 5: Other Influential Factors

The following section provides information on a variety of factors which may have an influence on the property or surrounding area.



Section 5a: Environmental Constraints

Enquiry	Result
Is the property within 250m of an area likely to be impacted by Environmental Constraints?	No

Map ID	Reference	Location	Details	Distance	Contact
--------	-----------	----------	---------	----------	---------

Areas of Outstanding Natural Beauty

No factors identified for this property

Local Nature Reserves

No factors identified for this property

National Nature Reserves

No factors identified for this property

National Parks

No factors identified for this property

Ramsar Sites

No factors identified for this property

Sites of Special Scientific Interest

No factors identified for this property

Special Areas of Conservation

No factors identified for this property

Special Protection Areas

No factors identified for this property

Useful Contacts

Contact 1 - Environment Agency - National Customer Contact Centre (NCCC)

PO Box 544 Templeborough Rotherham S60 1BY	Tel: 03708 506 506	enquiries@environment-agency.gov.uk
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Contact 2 - Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards

Chilton Didcot Oxfordshire OX11 0RQ	Tel: 01235 822622 Fax: 01235 833891	radon@phe.gov.uk www.ukradon.org
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Contact 3 - Kerrier District Council (now part of Cornwall Council) - Environmental Health Department

County Hall Treyew Road Truro Cornwall TR1 3AY	Tel: 0300 1234 100	enquiries@cornwall.gov.uk www.cornwall.gov.uk
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Contact 4 - Cornwall County Council (now part of Cornwall Council)

County Hall Treyew Road Truro Cornwall TR1 3AY	Tel: 0300 1234 100	enquiries@cornwall.gov.uk www.cornwall.gov.uk
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Contact 5 - Carrick District Council (now part of Cornwall Council) - Environmental Health Department

County Hall Treyew Road Truro Cornwall TR1 3AY	Tel: 0300 1234 100	enquiries@cornwall.gov.uk www.cornwall.gov.uk
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Legal and Financial Imperium Reading Berkshire RG2 0TD	Tel: 0844 844 9966 Fax: 0844 844 9980	helpdesk@homecheck.co.uk www.landmarkinfo.co.uk
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The Landmark website contains links to many of our data suppliers which may prove useful.

Please note that the Environment Agency/Natural Resources Wales/SEPA have a charging policy in place for enquiries.

Landmark works in association with:



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Useful Information

The following explanatory notes may be of assistance to users of the Homecheck Professional report. Practitioners are reminded that full guidance notes are contained in the Practitioners Guide.

Professional Opinion

A Professional Opinion in relation to Part 2A of the Environmental Protection Act 1990 is provided by Argyll Environmental Consultants. In many cases the report will be PASSED without referral. However, in some cases, entries that may be of concern are revealed by the search, in which case the report is REFERRED free of charge for more detailed consideration, although this will not include a physical site inspection. After such referral the report may be PASSED or suggestions made of some FURTHER ACTION that could be taken, in the form of questions to ask of the appropriate authorities. When responses to these questions are received it is the responsibility of the client and their professional advisors to decide if they are happy to proceed.

Flood Risk

A limited flood risk screening exercise is included in this report designed to satisfy basic flood risk screening due diligence including consideration of river, coastal and surface water flooding. Where a potential flood risk is "Identified" you may wish to consider commissioning a more detailed flood risk screening report. When there is "None Identified" this does not indicate that there is not risk of flooding at the property, but that the risk of flooding from the sources screened (river, coastal and surface water) within the vicinity of the property is such that the risk may not be considered significant.

Location Map

The Ordnance Survey location map may show features which are not necessarily otherwise included in this report. You are advised to supplement the information contained in the report with the descriptive text shown on the map.

Positional Accuracy

We locate data in a variety of ways according to information provided to us and subsequent in-house research. If data is provided as a point on the ground, we provide a "positional accuracy" which tells you how confident we are of the actual location.

Section 1b: Landfill and Waste

At present no complete national data set exists for landfill site boundaries, therefore, a point grid reference, provided by the data supplier, is used for some landfill sites. In certain cases the point grid references supplied provide only an approximate position, and can vary from the site entrance to the centre of the site. Where the exact position of the site is unclear for Registered Landfill data, Landmark construct either a 100 metre or 250 metre "buffer" around the point to warn of the possible presence of landfill. The size of this "buffer" relates to the positional accuracy that can be attributed to the site. The "buffer" is shown on the map as a red hatched area. For further information regarding landfill sites identified in the report, please contact the relevant environment agency or authority referenced in the Useful Contacts section.

The BGS holds records of over 3,000 landfill sites that accepted waste prior to the Control of Pollution Act (COPA) 1974. These were not subject to any strict regulation or monitoring.

Permitted Waste Sites and Environmental Permitting Regulations - Waste cover current or recently current consents issued for landfill sites, waste transfer, treatment or disposal sites by the Environment Agency/Natural Resources Wales, under Section 64 of the Environmental Protection Act 1990 (Part 2) and prescribed by regulation 10 of SI No. 1056 of the Waste Management Licensing Regulations 1994.

Section 1c: Potentially Contaminative Activities

Identified discharge consents could be for storm water discharges, soakaways or septic tanks.

If a radioactive substance licence has been identified the consent band will be given under enquiries and replies. Consents fall into one of four bands: Band 1 and 2 Nuclear licensed sites authorised by the Nuclear Installations Inspectorate e.g. nuclear power stations Band 3 Site registered/authorised to accumulate and dispose of radioactive materials, only non-nuclear operations are carried out on site e.g. hospitals Band 4 Sites registered to keep and use radioactive material e.g. laboratories, universities, commercial premises using appliances such as monitoring equipment, alarm systems, tritium lighting etc.

Data supplied for Explosive Sites, Control of Major Accident Hazards Sites (COMAH) and Notification of Installations Handling Hazardous Substances (NIHHS) contains public sector information published by the Health and Safety Executive and licensed under the Open Government Licence.

Section 1e: Other Potential Contaminative Land Uses

This section relates to categories of potentially contaminative land uses that have been identified by the analysis of selected Ordnance Survey historical mapping. The published date (range of dates) of the map (s) and the distance from the centre of search to the nearest point of the feature is given. Further details of the extent of the site or its activities are not available. Should you wish to examine the Ordnance Survey maps these are normally available for public inspection at the local archive or local major library. Alternatively, extracts of editions of Ordnance Survey maps are available on www.old-maps.co.uk

Potentially infilled land has been identified when a 'cavity' (a hole made by an extractive industry or natural occurrence e.g. pond) was indicated on a historic map but there was no evidence of its existence in the last available map for the area. No details of what may have been used to fill the cavity or exactly when or if it was filled are available from the mapping.

The point locations of historical tanks and energy facilities are identified from the text on Ordnance Survey 1:1250 and 1:2500 scale mapping published between 1943 and 1996, based upon a predetermined list of abbreviations, e.g. El Sub (Electricity Sub-station) and F Stn (Filling Station). The position of the point has been located at the centre of the identified text so that it would be within approximately 30 meters of the feature it was describing. The features themselves are related to energy and petroleum storage and cover the following: tanks, petrol storage, potential tanks (at depots etc.), electricity sub stations and related features, gas and gas monitoring related features, oil related features and miscellaneous power features. NB: It should be noted that the Ordnance Survey abbreviation for tank (tk) is the same as that for tracks. Therefore some of the captured text may relate to tracks and not tanks when the exact nature of the feature is not clear from the mapping.

Section 2: Flood Findings

Sections 2a, b and c of the report provide data on modelled extents of river, coastal and surface water flooding generated by JBA Risk Management, a market leader in flood risk assessment commonly engaged by insurers to assess flood risk. The data has been modelled for several perils or return periods: 1 in 75, 1 in 200 or 1 in 1000 which relate to areas with a 1.3%, 0.5% and 0.1% annual probability of flooding in any one year respectively. Properties at risk of flooding during a 1 in 75 year event are typically considered to be at a high risk of flooding. The data has been generated to provide a UK wide screening tool and as a result may have inherent limitations. In addition, there may be areas of the country which are modelled to varying degrees of accuracy based on currently available topographical information.

Section 3: Radon Findings

Due to the nature of way the information is gathered, your property/site may have more than one probability of radon attributed to it. We report the worst case scenario on the property/site you have provided. This information is an estimate of the probability that a property /site in Great Britain is at or above the "Action Level" for radon (the level at which Public Health England recommends that radon levels should be reduced, those with an average of 200 Bq m⁻³ or more). This information satisfies CON29 Standard Enquiry of Local Authority; 3.13 Radon Gas: Location of the Property in a Radon Affected Area. Where the property/site is a new build, this information provides information on the level of protection required for new buildings under BR211 (Scivyer, 2007) Radon: Guidance on protective measures for new buildings.

Disclaimer: "Some of the responses contained in this section are based on data and information provided by the Natural Environment Research Council (NERC) or its component bodies the British Geological Survey (BGS). Your use of any information contained in this report which is derived from or based upon such data and information is at your own risk. Neither NERC, BGS nor Public Health England where applicable, gives any warranty, condition or representation as to the quality, accuracy or completeness of such information and all liability (including liability for negligence) arising from its use is excluded to the fullest extent permitted by law."

Section 5a: Environmental Constraints

The Local Nature Reserves national dataset is "indicative" not "definitive". Definitive information can only be provided by individual local authorities and you should refer directly to their information for all purposes that require the most up to date and complete dataset.

General

If after reading the details in this report regarding the sites identified, you still require further information, please contact the relevant environment agency or authority indicated in the Useful Contacts section quoting the corresponding reference given in the text of the report.

The contacts in the Useful Contacts section may be able to provide further information relating to items identified in the report, however they are not in a position to advise how these might affect the value of a property. The findings of the report should be discussed with your professional advisor.

The Purpose and Scope of the Report

The report is designed to satisfy the concerns raised by the Law Society warning card and has been prepared to assist conveyancing professionals who may be advising clients when they sell or buy a property, obtain a mortgage, seek further mortgage advice, or commence any building works. It is designed to bring information to their attention and help them decide whether they need to seek any further specialist advice. As the report is so detailed, this information can cause concern, but professional advisors will see that further action is suggested on all issues that have been identified.

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Insurance

Houses registered between 1st April 1999 and 31st December 2002 and covered by the NHBC Buildmark scheme probably have insurance against certain costs if contamination occurs within ten years of their construction. From 1st January 2003, NHBC will only provide this cover if building control has been carried out by NHBC Building Control Services Limited.

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Search Code

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The Search Code:

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- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

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- display the Search Code logo prominently on their search reports
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TPOs Contact Details:

The Property Ombudsman Scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP Tel:
01722 333306
Fax: 01722 332296
Web site: www.tpos.co.uk
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE



Search Code

COMPLAINTS PROCEDURE

If you want to make a complaint, we will:

- Acknowledge it within 5 working days of its receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt. - Liaise, at your request, with anyone acting formally on your behalf.

Complaints should be sent to:

Head of Customer Relations
Landmark Information Group Ltd
Landmark UK Property
Imperium
Imperial Way
Reading
RG2 0TYD

Telephone: 0844 844 9966

E-mail: helpdesk@landmark.co.uk

Fax: 0844 844 9980

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman Scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk.

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision.

Annex 2 - Site Photographs

Photograph 1.



View: north

Looking to site from Trevarth Road.

Photograph 2.



View: north

Western boundary of the site with neighbouring track.

Photograph 3.



View: north-north-east

Eastern boundary of the site with neighbouring roadway.

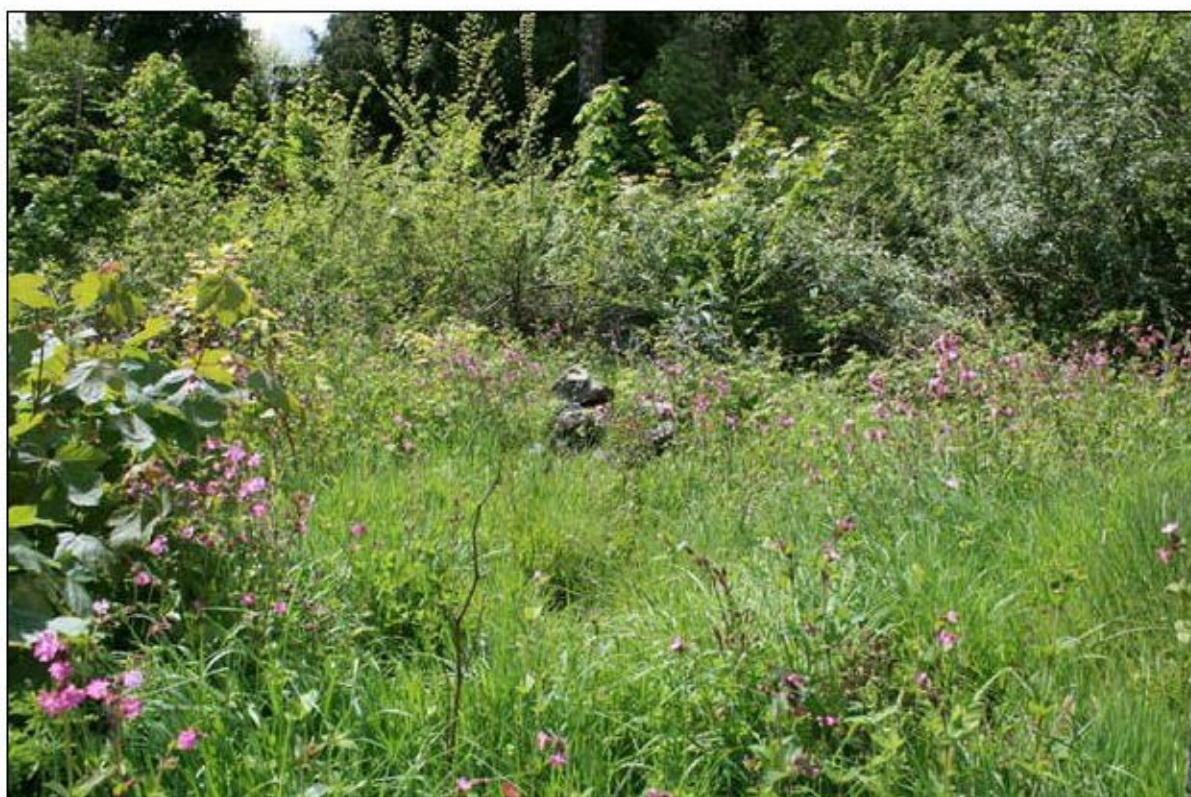
Photograph 4.



View: north-north-east

Main site area viewed from the southern corner of the plot.

Photograph 5.



View: west

Looking across the site from the eastern boundary.

Photograph 6.



View: north-west

Northern extent of the plot as viewed from the eastern boundary.

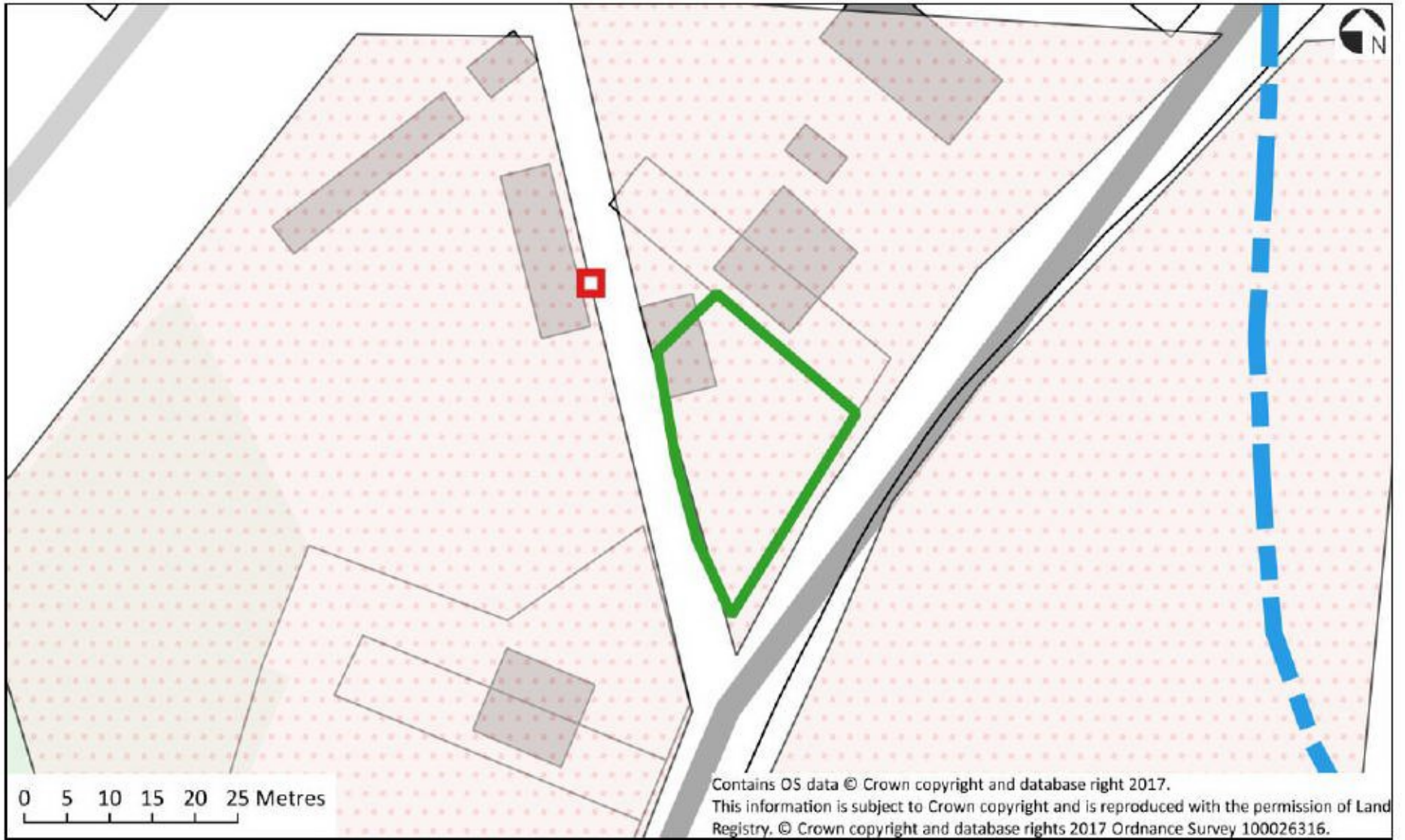
Annex 3 - Historic Mine Search

Mining Search: METALLIFEROUS MINERALS



Property Address	Garden Belonging to: Grove Vista Trevarth Road Trevarth Carharrack			Redruth	Cornwall
Postcode	TR16 5SE	National Grid Reference:	172833	40964	
Client Reference	Approved Site Investigations Ltd				
Report reference	RJH/CMS/121483				
Date	Monday, May 15, 2017				

Registered Office: Parc Vean House, Coach Lane, Redruth, TR15 2TT.
Registered in England & Wales.
Registered No: 4578850



Key

Property Boundary	Recorded Lode (Surface)	Recorded Shaft	Surface Workings
Land Registry Boundaries	Suspected Lode (Surface)	Suspected Shaft	Underground Workings
Building	Lode at Other Elevation	Subsidence	Mine Waste
Former Structure	Geological Fault	Well/Spring	Alluvium/Tin Streaming
Elvan	Adit/Tunnel	Adit Portal	Quarry

Risk Rating

MODERATE

Further Action

SITE INSPECTION

We believe that the property could be affected by subsidence related to historic metalliferous mining and we are unable to dismiss this without further assessment. As a precautionary measure, the property should be inspected by a qualified surveyor or mining consultant to confirm the absence of any structural defects relating to ground movement. In addition, we advise that a mining consultant inspect any adverse ground conditions encountered during any development of the site.

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Mining Search: METALLIFEROUS MINERALS

This Mining Search provides an assessment of the subsidence risk presented to the property from historic metalliferous mining. The report findings are based on factual information from maps, plans and records in Cornwall Consultants Ltd private archive and external datasets, as well as the results of relevant on-site investigations. This information has been interpreted by experts to predict the existence, location and severity of any risk from unrecorded mine workings.

The Findings

The property is situated within an area of extensive historic metalliferous mining activity. Our records indicate that an adit of the former Ting Tang Mine lies 47 metres east of the property. This feature is recorded or inferred from information on a mine plan. It is also recorded, or inferred from shown on a Geological Survey map.

This adit lies at a depth of approximately 30 metres and follows a crosscourse. The old Ordnance Survey maps show the area beneath the property to be covered in mine waste material which may obscure other surface mine features. A shaft is suspected to lie 10 metres northwest of the property, however, there are no records of the workings that it might be connected to.

The property does not lie within an existing Mineral Consultation Area, containing designated metalliferous mineral resources.

The Risk

Based on a detailed search and expert interpretation of our mining records archive we believe the risk to the property from subsidence relating to past extractive mining is

MODERATE

We believe that the property could be affected by subsidence related to historic metalliferous mining and we are unable to dismiss this without further assessment.

The Next Steps

To further assess the risks to this property we recommend the following course of action:

SITE INSPECTION

As a precautionary measure, the property should be inspected by a qualified surveyor or mining consultant to confirm the absence of any structural defects relating to ground movement. In addition, we advise that a mining consultant inspect any adverse ground conditions encountered during any development of the site.

If further information is required regarding the potential for future metalliferous mineral extraction, we would recommend that enquiries are pursued with the local Mineral Planning Authority and /or operator as applicable.

If further assessment has been recommended or you would just like to discuss the findings of this report, we would be happy to assist by phone on 01209 313511 or by email to mining@cornwallconsultants.co.uk or at a site meeting as required. Further explanation of the mining search process can be found on the attached information sheet and our website www.cornwallconsultants.co.uk.

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Mining Search: METALLIFEROUS MINERALS

Geology

Metallic mineralisation in the South West mainly occurs in lodes (veins), which are sheet-like structures occupying former fissures in the bedrock. Lodes are typically about 1 metre (m) wide but some reach 5m or more and are either vertical or inclined at steep angles. Mineral lodes containing tin, copper and other metalliferous minerals, typically course in an east-northeast to west-southwest direction, while those containing lead and silver often course approximately north to south. Localised variations can occur and lodes are also affected by other geological structures, such as crosscourses (geological faults) and elvans (wide, planar igneous intrusions that are occasionally mineralised).

Mining Methods & History

The extraction of metalliferous minerals in the South West has taken place for thousands of years, throughout which shallow prospecting was widespread. This involved excavating costean (trial) pits in order to discover mineral lodes, often in areas where earlier tin-streaming had taken place. Once discovered, lodes were often mined by openworks (linear excavations) along the lode outcrop and later by means of shafts, adits (drainage tunnels) and levels (tunnels) driven away from the shafts. The ore was extracted from between the levels to leave stopes (narrow chasms). By the 19th century steam pumping engines enabled the workings to be deepened. During the tin and copper mining heyday, in the 18th and 19th centuries, the South West was one of the most productive mining regions in the world with over 2000 active mines. Thousands of shafts were sunk and hundreds of miles of underground workings were driven along the lodes. However, by the end of the 19th century, the discovery of larger mineral deposits elsewhere led to the industrial decline in the South West and the closure of most mines. A lack of funds and regulations meant that mine workings were often left abandoned without being secured.

Mining Archive & Unrecorded Workings

The surviving officially deposited abandoned mine plans of most mines in the South West do not show the full extent of the underground workings, especially at shallow depth. It did not become a legal requirement for metal mines to keep comprehensive plans of the underground workings, and to deposit these upon abandonment until 1872. This law did not apply to mines that employed less than 12 people underground and neither did it require mines to survey any unused older workings. As a result, most of the old and shallow workings and smaller mines remain poorly recorded. We use a vast archive of other mining and geological records; maps; plans; books and datasets, along with our knowledge of the geology and mining methods, to predict where workings could exist and might present a risk.

Subsidence Risks

Any near-surface mine working that has not been properly secured poses a potential subsidence risk at surface. Mine shafts present a high risk of localised subsidence; often these features were capped with timber when mining ceased and all evidence of them became obliterated. Shallow adits can collapse or cause flooding and mine waste tips/dumps can cause differential settlement. However, one of the main causes of mining related subsidence is the collapse of near-surface mine workings on lode outcrops. These workings, in the form of small pits, openworks or shallow stopes, were often backfilled with unconsolidated waste rock and are not evident at surface until they collapse, thereby presenting a high risk of subsidence. There is no legal imperative to report subsidence to a central body and so no comprehensive database of historic subsidence events exists. Therefore, it is not possible to conclude whether a property has previously been affected; but we include comment on subsidence at a property if we are aware of it.

Limitations of Mining Search

This Mining Search has been produced following a search and review of the extensive collection of abandoned mine plans, maps, records and archives in our possession and from this material we have endeavoured to provide as accurate a report as possible. However, considering that such records may not be wholly complete or accurate, we cannot accept liability for any inaccuracies or omissions with respect to those records. This Mining Search does not include an assessment of soil contamination risks. This report and any mining features described are applicable to the subject property only, the location or boundaries of which have been approved by the client in instructing and receiving this report. We cannot be liable for any erroneous or omitted information as portrayed on any plan supplied to us for this Mining Search. The report must not be relied upon for neighbouring properties, as any adjacent mining features may have been omitted for clarity. This report is confidential to the client, client's solicitor and/or mortgage lender or those acting through a conveyance service provider (as per the quoted reference number) and may not be reproduced or further distributed, re-sold or reassigned without our permission. We shall be under no liability whatsoever to any person who has not been party to the commissioning and fee paid for this report or any undisclosed third party. We have not visited the property.

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Annex 4 - Reference & Planning Procedure Guide

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 Ordnance Survey Maps/historical & current

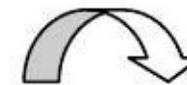


General Planning Procedure Chart

PHASE 1 Desktop Site Report (Contaminated Land Survey)

Environmental survey listing site history
 Identify any contaminants of concern/conceptual model
 Mine search (historic survey)
 Walk-over survey

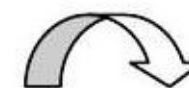
Submit planning application & desktop report



PHASE 2 Site Investigation & Risk Assessment

Ground investigations often in the form of:
 Soil sampling, trenching investigation/drilling
 Undertake risk evaluation & recommendations
 Proceed to Phase 3 should contamination be identified

Submit report for approval



PHASE 3 Remediation Strategy

Remediation strategy report for the development of the site

Submit report for approval



PHASE 4 Site Monitoring

Monitor site development
 Verification of remedial works





ASI Core Services:

- ✓ **Contaminated Land Surveys (Phase 1)**
- ✓ **Soil & Water Analysis Reports (Phase 2)**
- ✓ **Land Remediation Reports (Phase 3)**
- ✓ **Site Verification & Completion Reports (Phase 4)**
- ✓ **Drilling & Ground Profiling Investigations**
- ✓ **Trenching & Foundation Inspections**
- ✓ **Shaft & Mining Feature Securing Works**
- ✓ **Waste Classification Assessments**
- ✓ **Historic Mine Searches (arranged upon request)**
- ✓ **Non Interpretive Environmental Reports**

Our client commitment is to provide you with:

- **Professional, efficient solutions.**
- **To liaise with you at each step of your project.**
- **Provide competitive pricing tailored to your site requirements.**

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