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SPECIALISTS IN: MINING SEARCHES, PROPERTY INSPECTIONS, MINING INVESTIGATIONS, CONCRETE (MUNDIC) TESTS & SOIL CONTAMINATION SURVEYS  
VAT REGISTRATION NO: 591 1098 37

## EXAMPLE OF BATH STONE SEARCH

Your Ref:  
Our Ref:

Dear Sirs

### MINING SEARCH

**Re:**  
**NG Ref: ST**

We thank you for your letter of. Accordingly, we have carried out a mining activity search on the above property and are able to report as follows:-

#### **Mining Activity**

The property is situated in an area which has witnessed historic activity for the underground extraction of limestone (Bath Stone) for building purposes. It is recorded that significant mining activity in this area commenced in the early eighteenth century and ceased by 1860.

The Bath Stone deposits in the locality occur in planar beds or stratigraphic units. In the vicinity of the property this is a Jurassic age limestone rock referred to by the stratigraphic term of Combe Down Oolite. The worked deposits within these mines may be in the order of 1 to 8 metres thick. Generally these stratigraphic units are either horizontal or shallow dip.

These deposits were exploited either by tunnels (adits) driven along their plane from surface outcrop or from former opencast quarries or by means of inclined or vertical shafts. The underground mining of these deposits was by means of an extractive technique known as "room and pillar". Such workings require a minimum thickness of competent overlying strata to prevent surface subsidence.

The property lies just within the western boundary of an unnamed Bath Stone Mine according to the British Geological Survey maps. According to the Bath City Council it is suspected that further unrecorded underground workings extend beyond this boundary to the west and southwest. The thickness of the supporting ground between the roof of the old workings and surface is not known. Generally a thickness of less than 6 metres would be considered to

present a "significant hazard". The closest suspected air shaft (well) is shown 45 metres southeast of the property.

The first and second editions of the Ordnance Survey maps show former open quarries from 10 metres to the southwest and 40 metres southeast of the property which have been infilled.

## **Discussion**

Mining related subsidence in the Bath area is usually caused by the collapse of the collars of shafts; or the collapse of shallow workings brought close to the surface; or where there is insufficient bedrock cover; or the subsidence of overlying strata due to collapse of pillars within mine workings; or by the slumping of backfilled material into any of the aforementioned features.

Strata overlying collapsing mine workings is prone to 'sagging' and the creation of voids which migrate upwards. Such affects cause surface lowering or subsidence or the formation of significant depressions known as 'crown holes'. Experience dictates that longevity in any building unfavourably located, in relation to an underlying mine working, is no guarantee that the building is free from the risk of subsidence, within the foreseeable future.

The Bath City Council states "*The most likely mode of failure in the Combe Down mines is that of a sudden, unforeseen and probably "large" collapse. In view of the thinness of roof cover over much of the workings, it must be assumed such a collapse may be manifest at the surface. Although it is not possible to obtain sufficient accurate and appropriate data to provide a realistic basis for a mathematical/statistical analysis of the probability of ground failure, the risk to persons and property should not be underestimated. It is considered that the whole of the mined area poses, or will pose, a sufficient risk that remedial action needs to be taken in the near future.*"

## **Conclusions**

The documentary evidence indicates that the property is situated above an area of mine workings in the Combe Down Oolite. The depth of these workings has not been recorded, however, they may be present at shallow depth (ie, within 5-6 metres of surface). The extent and condition of supporting pillars in these workings and the competency of the strata between these workings and surface is not known, however, it is believed that the property is within an area which may be at risk of subsidence.

With consideration to the available information it appears that the subject property, similar to many other properties in this part of Bath, may be at risk of subsidence. It is recommended that enquiries are pursued with the Engineering Department of Bath and North East Somerset Council (Trimbridge House, Trim Street, Bath, BA1 2DP) who may be able to provide further information and reassurance on the condition of these workings or any proposed remedial works to stabilise these workings. Otherwise a full structural survey may assist in quantifying the indicated risk.

We are not aware of any plans to resume mining or quarrying for Bath Stone in the immediate locality.

## **Limitations**

This mining activity search has been carried out with reference to 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, taking into account that such records may not be wholly complete or accurate, we cannot accept liability for any inaccuracies or omissions there may be with respect to those records. This report and any mining features described are applicable to the subject property only, the location or boundaries of which have been indicated by the client. We cannot be held liable for the accuracy of the subject property boundaries as supplied by the client or provided on their behalf. 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 and the client's solicitor and/or mortgage lender and may not be reproduced or further distributed 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. We have not visited the property.

We trust this report is to your satisfaction and enclose a receipted invoice herewith.

Yours faithfully  
for **Cornwall Consultants**

Dr T Cotton, BSc, PhD  
Senior Mining Geologist

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