

Earth Science Partnership

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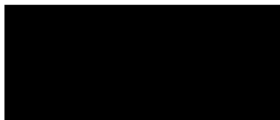
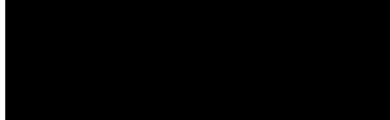
Godre'r Graig Village Executive Summary; Preliminary Landslide Hazard and Risk Assessment

Prepared for:

Neath Port Talbot County Borough Council
The Quays, Baglan Energy Park,
Brunel Way, Briton Ferry,
SA11 2GG



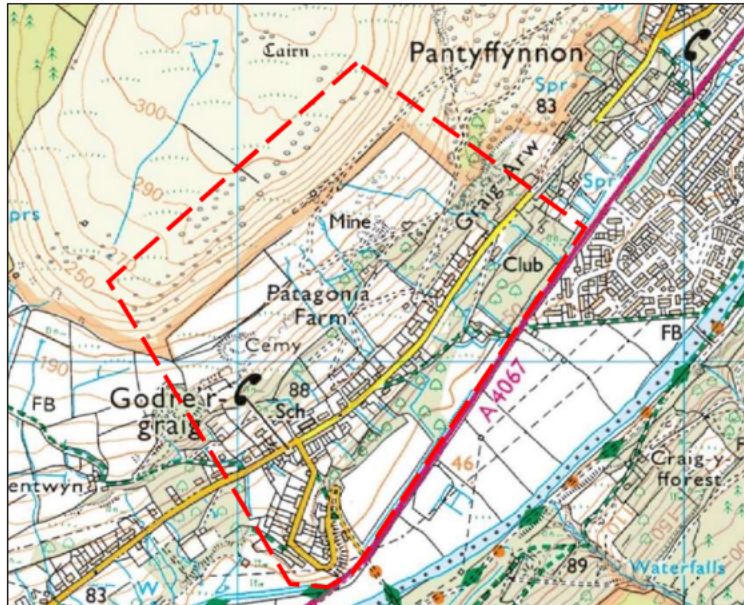
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Rev	Status	Date	Written by	Checked and Approved by
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1 Introduction

Neath Port Talbot County Borough Council (NPTCBC), hereafter known as the Client, instructed ESP to develop this Executive Summary on a Preliminary Landslide Hazard and Risk Assessment for the village of Godre'r Graig, located in the Tawe Valley. The full report should be viewed for details, reference ESP.7372e.3331 Rev 2.

This assessment does not consider the risks to the school, only residential properties in Godre'r Graig. If risks to the school would like to be understood, these can be read in ESP reports, refs. 7234e.3221 and 7234e.02.3302. The general location of the study area is shown on Insert 1.



Insert 1: General Study Area 1:10,000 (Ordnance Survey License No.: AL100015788).

2 Desk Study and Walkover

A review of the historical maps shows a large amount of mining carried out in the surrounding area, with tips and spoils mounds from rock quarries and coal mines. The No. 2 Rhondda and Upper Pinchin seams are located above the village and were worked.

There are several springs and streams in the area, which flow downhill toward the east or southeast. Water has been noted issuing out of adits.

There is evidence of small landslides, instability associated with former adit locations. Shallow depressions associated with springs may be the 'shallow slips' noted on the geological map.

An Engineering Geomorphological Map of the area is provided as Figure 1.

3 Hazard Types and Risk Assessment

The assessment showed five hazard types, which are detailed below and shown on Figure 2. It should be noted that the hazard types occur in different areas, and they do not represent a hazard to each individual house in the village; for example Hazard Type 2a and 2b will not impact all of the village, only the school or houses near the school as they are proximal to those hazards.

- Hazard Type 1 - Rock fall initiating from outcrops of the Rhondda Sandstone
- Hazard Type 2a – impact from debris avalanche initiating from quarry spoil
- Hazard Type 2b – Impact from debris avalanche initiating fom colliery spoil
- Hazard Type 3 – Impacts from debris avalanches originating from over steep slopes assoicated with the workings of the Upper Pinchin Seam
- Hazard Type 4 – Shallow earth slides

The risk assessment information is included in our main report, however, the findings of the assessment are presented in Table 1 below, and the Risk Map is presented as Figure 3.

Table 1: Summary of Estimated Level of Risk to Property

Hazard Type	Likelihood Designation	Consequence Descriptor	Risk
Hazard Type 1 - Rock fall	Unlikely	Minor	Low
Hazard Type 2a – Quarry spoil landslide	Unlikely to barely credible*	Medium	Low to Very Low*
Hazard Type 2b - Colliery spoil landslide	Unlikely to barely credible*	Medium	Low to Very Low*
Hazard Type 3 - Landslides associated with the working of the Upper Pinchin seam	Unlikely (likely for a single property)	Insignificant	Very low (low for a single property)
Hazard Type 4 - Shallow earth slides	N/A	N/A	N/A
Notes: 1. Based on AGS qualitative risk analysis matrix. *Depending on travel angle to element at risk.			

Based on the above it has been assumed that the risk to residential properties to the south of Graig Road is very low.

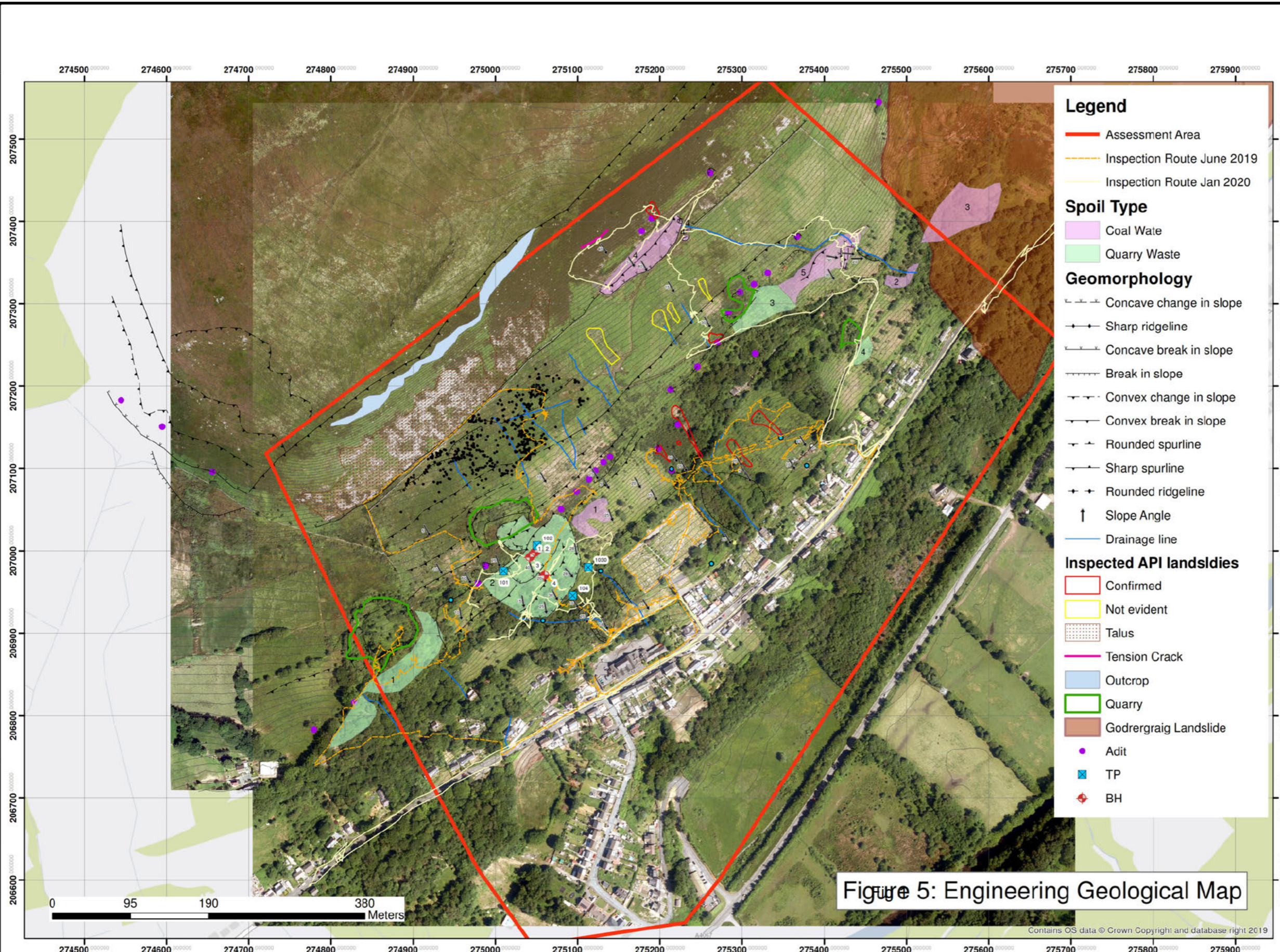
No specific assessment has been carried out to assess the risk to members of the public using/visiting the cemetery. However, given that the cemetery will have a lower temporal usage than the surrounding residential houses, and that the shallow earth landslides are very slow to slow moving and appear to be limited in depth, risks to cemetery users is likely to be lower.

4 Conclusions and Recommendations

The assessment has shown that there is a very low to low risk to residential properties in Godre'r Graig, which is normally “usually acceptable to regulators” (AGS, 2007). No specific remedial or mitigation recommendations are considered necessary. Risks to cemetery users is likely to be lower than the risks to residential properties surrounding the cemetery.

Recommendations in the ESP 2020 report associated with Godre'r Graig School (ref. 7234e.02.3302) are not replicated here and that report should be read in full.

End of Executive Summary



Legend

- Assessment Area
- Inspection Route June 2019
- Inspection Route Jan 2020

Spoil Type

- Coal Waste
- Quarry Waste

Geomorphology

- Concave change in slope
- Sharp ridgeline
- Concave break in slope
- Break in slope
- Convex change in slope
- Convex break in slope
- Rounded spurline
- Sharp spurline
- Rounded ridgeline
- Slope Angle
- Drainage line

Inspected API landslides

- Confirmed
- Not evident
- Talus
- Tension Crack
- Outcrop
- Quarry
- Godrergraig Landslide
- Adit
- TP
- BH

Notes:

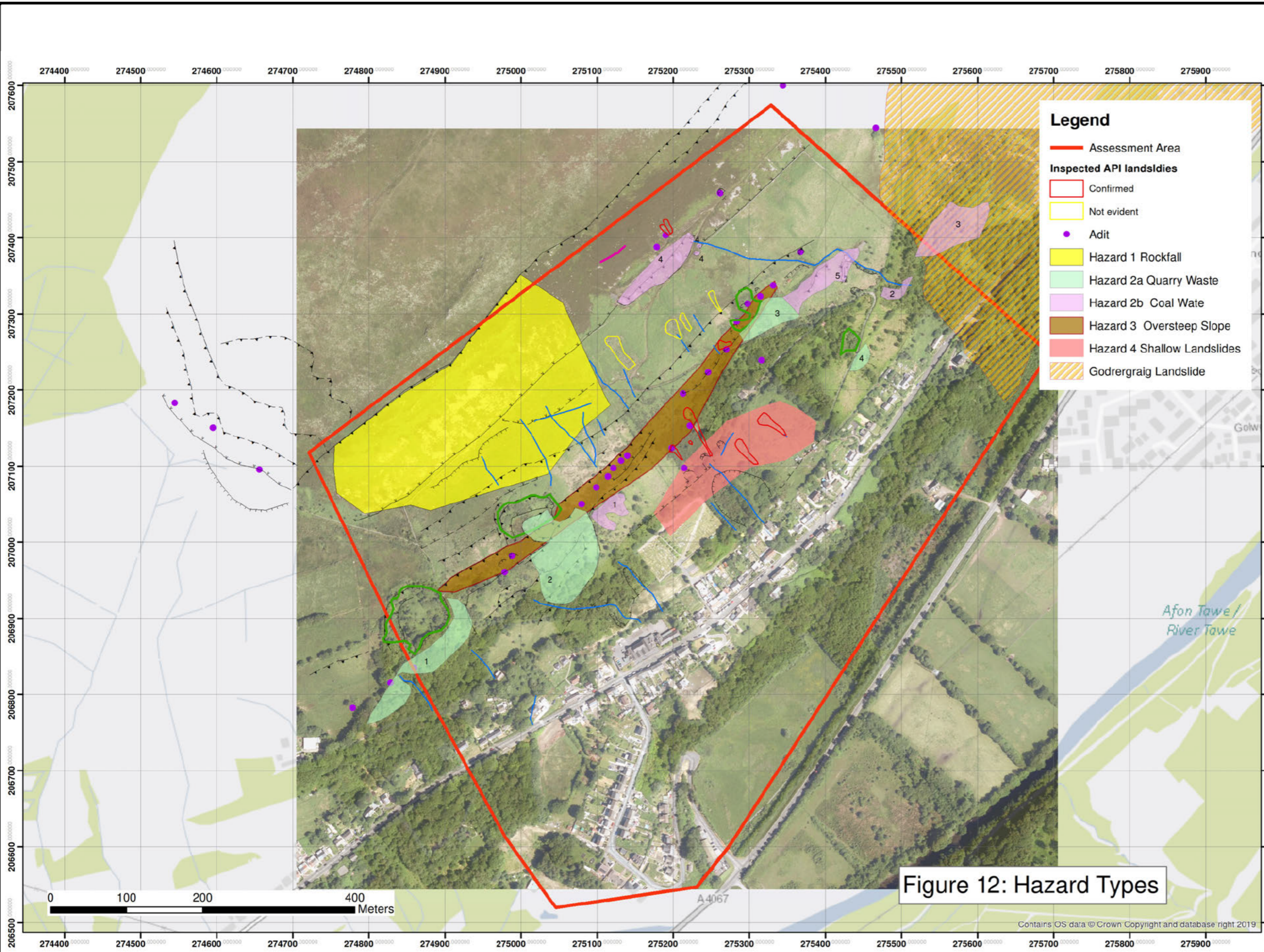
Figure 5: Engineering Geological Map

PROJECT:
 GODRE'R GRAIG VILLAGE, TAWE
 VALLEY

Scale: AS SHOWN

FIGURE 1:
 ENGINEERING GEOLOGICAL MAP

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Legend

- Assessment Area
- Inspected API landslides**
- Confirmed
- Not evident
- Adit
- Hazard 1 Rockfall
- Hazard 2a Quarry Waste
- Hazard 2b Coal Waste
- Hazard 3 Oversteep Slope
- Hazard 4 Shallow Landslides
- Godre'r Graig Landslide

Notes:

Figure 12: Hazard Types

PROJECT:
 GODRE'R GRAIG VILLAGE, TAW
 VALLEY

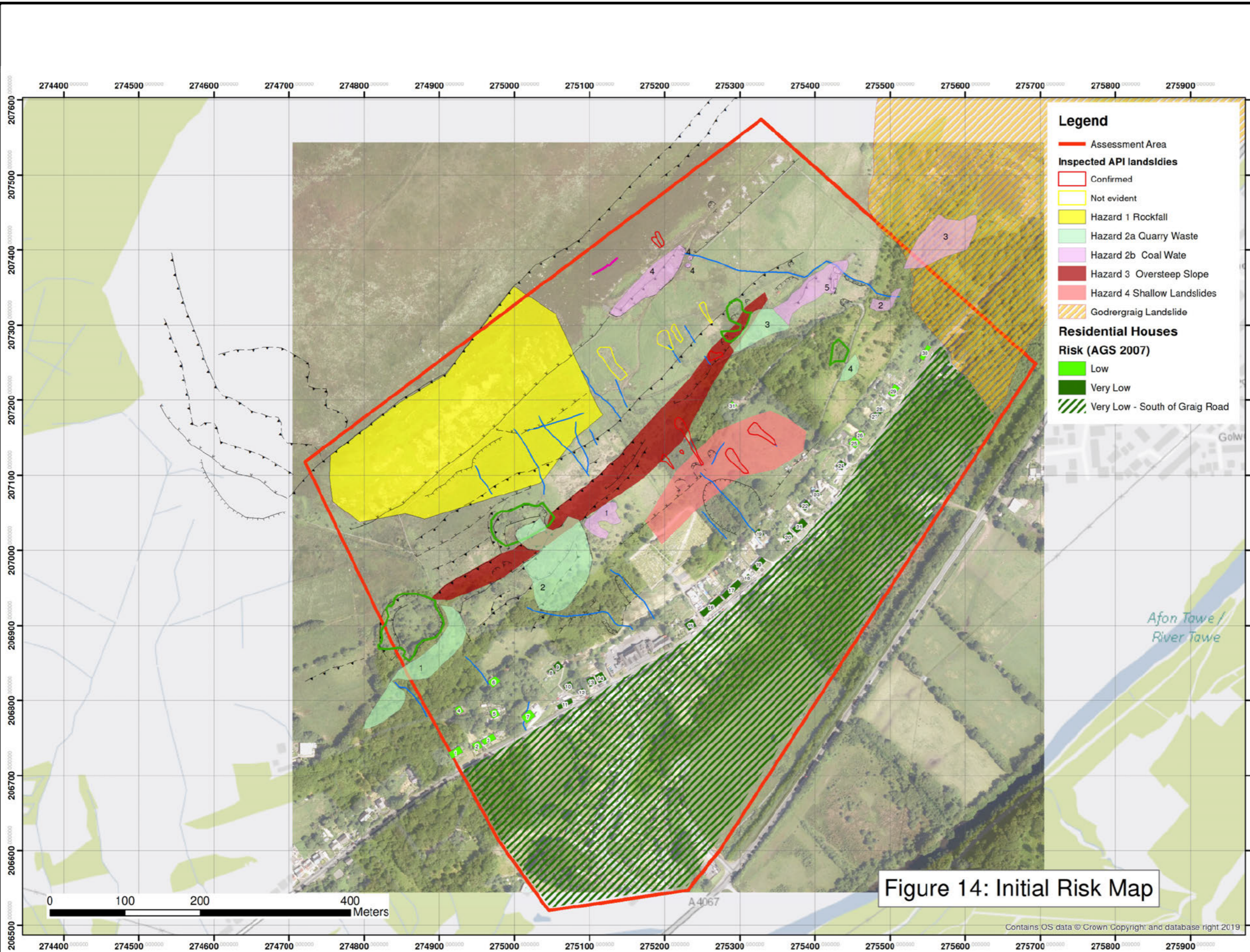
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FIGURE 2:
 HAZARD TYPES

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Notes:

Risks to Cemetery visitors considered to be low. See report for details.



Legend

- Assessment Area
- Inspected API landslides**
- Confirmed
- Not evident
- Hazard 1 Rockfall
- Hazard 2a Quarry Waste
- Hazard 2b Coal Wate
- Hazard 3 Oversteep Slope
- Hazard 4 Shallow Landslides
- Godrergraig Landslide
- Residential Houses**
- Risk (AGS 2007)**
- Low
- Very Low
- Very Low - South of Graig Road

Figure 14: Initial Risk Map

PROJECT:
 GODRE'R GRAIG VILLAGE, TAW
 VALLEY

Scale: AS SHOWN

FIGURE 3:
 INITIAL RISK MAP

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