

## Hazard Assessment for Cae Coch Sulphur Mine in the Gwydyr Forest

Cae Coch is a fairly safe mine to visit, however the chambered area is quite extensive and so it is easy to get disorientated. The main workings are spacious and were worked by leaving pillars of material to support the roof. In some areas the roof was less stable and the miners have used baulks of timber as shoring. Some of these are now in poor condition, but generally speaking the mine is stable and safe to explore. The plan given in Book 7 of the Mine of the Gwydyr Mine serial by Bennett and Vernon provides a useful explorers guide. There is a safety handline in situ to the lower levels.

Note: while a through trip from level 2 exiting via level 4 might be possible, it will be a **very wet experience** and the acidic water might make it quite uncomfortable.

Hazard	Description	Mitigation
Trip Hazards	The floor is uneven and there may be some debris underfoot. This can be a trip hazard. Some areas have fallen timber-work.	Because of the size of the mine it is easy to avoid areas with collapse material. Pick a route around fallen material
Falling Rocks	Some areas of mine roof are unstable. This is obvious as there will be rock and debris on the floor.	Look out for signs of fallen material and keep well clear. Do not interfere with any timber supports or shoring which may dislodge loose material.
Acidic Pools	The mine was worked for Iron Sulphide. This can be attacked by various chemical and biological processes and produces acidic residues dissolve to form reddish pools of liquid which are very acidic (pH ~2) This could be extremely hazardous if splashed in a person's eyes. Skin reactions are also possible.	Avoid splashing and wear suitable clothing. Carry some bottled water as an eye-wash. Wash clothing after a trip.
Deep water and ochre	There are passages in the lower sections which have deep water with ochre mud at the bottom. This may make movement awkward and cause loss of balance.	Avoid going in deep water unless suitable clothing is worn. Make sure you wash well afterwards to remove any traces of acid. Take care to keep your footing.
Bad Air and Radon Gas	The mine is fairly well ventilated. There is a low concentration of sulphurous compounds e.g. sulphur dioxide in the air. The level is unlikely to cause problems, but some susceptible individuals may experience eye or throat irritation or breathing difficulties.	If people notice breathing, throat or eye irritation then they should leave the mine immediately. The symptoms should disappear once in fresh air.
Bats	The mine is a known roost for lesser horseshoe bats. These are protected as are all bats in the UK.	The mine should not be visited when the bats will be hibernating during the winter months. The bats will use the mine in the summer and care should be taken to avoid getting too close or shining bright lights on roosting bats.