

NEWLAND PARISH COUNCIL

newlandparishcouncil.gov.uk
Clerk Richard S Crighton CiLCA

Mr Jason Betty, Senior Planning Officer
Gloucestershire County Council
Shire Hall
GLOUCESTER
GL1 2TH

Our ref: Q550/2326

Your ref: 17/0122/FDMAJM

30 January 2019

Dear Jason

STOWE HILL QUARRY: extension of Stowe Hill quarry and retention of mineral processing plant at Clearwell quarry.

Thank you for your letter of 10 January inviting comments to the responses made by Breedon Southern Ltd (BSL) following your request for further information in support of the above planning application.

The responses provided essentially seek to address the concerns raised by Natural England (NE) and the Environment Agency (EA) in their respective OBJECTIONS to the application.

The applicant has put forward responses to the points raised by these two authorities and we have utilised the same table to add our comments (in red).

Throughout the NE and EA objections there is are multitude shortcomings, omissions, inaccuracies etc highlighted under virtually every heading leading one to the unarguable impression that BSL continues to attempt to gain permission by submitting half-truths and partial and inaccurate evidence which we remain confident that the authorities will see through.

Over the years (yes, years!) that this application has been under consideration this Parish Council has been consistent in its objections, and these remain unchanged. I suggest our most serious concerns relate to:

- the irreversible contamination of the Slade Brook,
- the level of the quarry floor and
- buffer zones.

Minds are currently concentrated on issues objected to by the EA and NE but please do not overlook the other points in our previous responses in which we have raised legitimate and substantiated objections ie:

- Hydrogeology – the evidence from Hydrogeo Ltd and Prof. Gunn's expert advice
- Dust and Noise – nowhere near adequately addressed

- Landscape – the irreversible change to the landscape adjacent to the Wye Valley AONB and various SSSIs
- Ecology – the effect of bat populations
- Buffer zones – a minimum of 250m from property thresholds
- Minerals Local Plan – the area is not included in the current (2006) plan (see below)
- Air quality – essentially ignored for Lydney, but issues in Coleford and Chepstow
- Heritage assets – Listed Buildings in Clearwell
- The local economy in and around Clearwell
- Alternative sources (as suggested by NE)
- The Twyning decision (ref 13/0017/TWMAJM) with remarkable similarities to this application
- The weight of public opinion
- The lack of enforcement of existing conditions – regularly flouted
- The Precautionary Principle
- And, if all fails, the European Convention of Human Rights.

The area of the application is not included in the extant Minerals Local Plan (2006) as a Preferred Area of Extraction, thus to grant permission would be contrary to the MPAs own policy. The emerging MLP (eMLP) (2018-2032) has recently been submitted to the Secretary of State for examination and approval and thus some account should be taken of policies within it, even though it has not been formally adopted.

This application and the previous one (ref 15/0108/FDMAJM) seek permission to expand the quarry into the exact same area as that identified in the eMLP as “Allocation Area 01”. In the light of the very strong objections submitted by Natural England, the Environment Agency, Forest of Dean District Council, this Parish Council and others to the eMLP, GCC have stated that there is a possible modification to the plan to **“Remove the reference to Allocation 01 on the introductory page ... and also the omission of pages 145 – 150 which present in full the Detailed Development Requirements for [the area]”**

In other words it is likely that the eMLP will be modified by the total exclusion of Allocation Area 01; thus until the plan is adopted surely no decision on the application would be appropriate.

There is an additional concern we have about the latest submissions by BSL which relates to a suggestion to have any permission granted subject to s.106 agreements rather than by conditions (although, we accept, they are also suggesting conditions). S.106 agreements are known as planning obligations – as opposed to conditions.

We would respectfully remind you that NPPF 54 states that **“Planning obligations [ie s.106 agreements] *should only be used where it is not possible to address unacceptable impacts through a planning condition*”**. Is there any good reason why conditions would not be appropriate in this case? If there is not, then s.106 arrangements must not be used.

The Planning Portal states that **“Planning obligations (s.106 agreements) ... can be attached to planning permissions to make acceptable development which would otherwise be unacceptable in planning terms. The land itself, rather than the developer is bound by the agreement”**. It goes on to say that **“authorities must take this guidance into account ... and must have good reason from departing from it”**.

We question why BSL would wish to suggest this approach and we can only surmise that they would find it less inconvenient and easier to avoid; bearing in mind that BSL’s recognition of

conditions to the extant permission has been and continues to be woefully lacking, as recognised in the objections by NE and EA.

We maintain that conditioning is the more appropriate - indeed only – approach should you be minded to recommend permission to the committee, if for no other reason than should BSL dispose of the land then, if a s.106 agreement is in force, they can simply walk away from it with no recourse available to the MPA against BSL.

The responses by NE and EA are primarily of a technical nature and in many cases we are not qualified to offer informed comment; nevertheless we offer comments where we feel we can.

I will deal firstly with just a few of the comments made by NE in their letter of objection dated 29 June 2018:

Restoration Strategy

Para 1:

- “We do not have confidence in the proposed restoration strategy”
- “we do not have confidence in the restoration scheme is critical to the consideration of the environmental impact of the application:
- “This type of restoration is currently untested, especially as, to our knowledge, the existing quarry has not yet been restored despite the extant conditions which apply to it”

Para 2:

- “On the matter of environmental impact assessment, as the existing quarry has not yet been restored, and timescales for the restoration are unclear, we advise that the potential impacts of this application should be considered in combination with the existing quarry”.

Para 3:

- (In respect of restoration methodology) “... the starting conditions for restoration using epikarst recreation techniques will be different, with less material available to enable the appropriate hydrogeochemical conditions to develop to support tufa dam formation in Slade Brook”.

Para 4:

- “... we consider that there is a risk of impact to Slade Brook SSSI”
- “The extension is in the proximity of at least one known direct link to Slade Brook, Longley Farm sink, so the potential for hydrological connections cannot be ignored”.

Para 5:

- “The groundwater monitoring data does not currently support workings to 170mAOD in the proposed extension, given the high water levels recorded in April 2018”.
- “... we still have concerns about the limited depth of limestone remaining if the full depth is worked”.

Para 6:

- "... no analysis has been provided of the 2018 rainfall".

Monitoring

Para 1:

- "There are a number of elements that are of concern" (examples quoted)

Ecology

- We have concerns that the ecology of Slade Brook has not been considered in enough detail. While the SSSI is notified for the actively forming tufa dams, additional biological features have been identified such as alkaline fen".

Local Plan

Para 1:

- (Quoting the GCC Local Plan) "Mineral development will only be permitted where the applicant has demonstrated, to the satisfaction of the MPA in consultation with other relevant pollution control agencies, that any potentially adverse environmental and / or pollution effects are capable of satisfactory control and / or mitigation, or elimination."

I will now deal with some the comments made by EA in their letter of objection dated 29 June 2018:

- "The main issues of concern are:
 - (1) The proposed operational working depth versus ground water table high depth and what is an appropriate realistic operational working depth to leave an appropriate unsaturated zone;
 - (2) Restoration proposals such as the epikarst recreation is an unproven mitigation measure ... with the potential for irreversible impact..."
 - (3) Cumulative impacts from having a large existing quarry and now an extension within the defined slow flow catchment of Slade Brook springs".
- "On the basis of current key concerns there may be irreversible adverse environmental impacts in EIA terms".
- "... there may be more suitable locations / sites of future extraction purposes, noting the shortfall in aggregates supply".

ANNEX 1 General comments on Chapter 10 v3 and Technical Appendix 10A

Data Quality

Within this Annex are many examples of where the EA casts serious doubts over issues:

Para 1: "The issue of data quality particularly concerning the flow data within the Slade Brook and lack of baseline groundwater data within the extension area has always been an issue here... ...it is far from an ideal situation at this stage in the process".

Para 2: (Slade brook) “The limitations discussed do fundamentally bring the ongoing assessments in to some question and provide uncertainties with this assessment and there are still issues which require clarification, specifically:

Para 3: (Slade brook Data sets 1 to 3) “these types of inconsistencies in the data interpretation might be oversights but they bring the assessment in to question with obvious issues such as these in the reports”.

Para 5: (Pipe hydraulics...) “Another comment concerns the full pipe depth is never achieved at the sensor. In previous reporting, pipe full conditions have been reported, so we would query why this is so?”

Para 6: (CO₂ survey) “We would question if field CO₂ data collection has been robust enough to make informed decisions?”

And so and so on, with numerous further comments such as:

“Too few data sets exist to make any meaningful interpretation”,
“we would have expected a more robust investigation”,
“the analysis provided cannot be fully accepted”,
“it is difficult to make any interpretation”,
“the proposed working depth to 170m AOD is not appropriate”,
“we find this approach unacceptable”,
“the data clearly shows that the groundwater high would inundate the quarry floor”,
“it is our view that the working depth proposed carries too high a risk”,
“very little detail is provided on restoration”.

On the point of restoration, the EA quite rightly highlights the fact the BSL has not restored the existing quarry in accordance with the conditions attached to the extant permission. Thus BSL is unable to demonstrate that the proposed method of restoration for the existing and enlarged quarry will be effective and work as intended. The EA goes on to say that “permission for the existing quarry has been in place since 2007 and [restoration] has still not been implemented which does concern us”.

To summarise the Parish Council’s view – this is a shoddy attempt to gain permission by way of applications and supplementary submissions which are less than full and frank and which, as acknowledged by the regulatory authorities, are misleading, inaccurate, incomplete and in some cases make unsubstantiated claims. We understand that there have been at least three meetings which BSL has held with the EA and NE in, we assume, attempts to get those authorities to remove or dilute their objections.

We have every confidence in the EA and NE that they will maintain their objections; it is, after all, the stated purpose of Natural England to “ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations; thereby contributing to sustainable development”. The Environment Agency “has responsibilities relating to the protection and enhancement of the environment”.

We repeat our strong **OBJECTION** to this application and request that in the light of all the evidence there is no alternative other than to **REFUSE** this application once and for all.

Yours very truly

A handwritten signature in black ink, appearing to read "Richard S. Crighton", with a horizontal line underneath.

**RICHARD S CRIGHTON CiLCA
CLERK**

The following tables present responses to the points raised by the Environment Agency and Natural England in their formal responses dated 29th June 2018. The structure of the tables broadly follows the 'Regulation 25 Request for Further Information' (the Request) from Gloucestershire County Council made by email on 18th December 2018. The information in these tables should be read in conjunction with all the documents submitted in the response to the Request.

Response to points raised by the Environment Agency

Comment	Response	Proposal/ Newland Parish Council comments
<p>Data Quality</p> <p>Slade Brook Data sets 1 to 3 Page 8 Appendix 10A Set 2 does not fully represent winter months; Set 3 does not cover the dry winter of 2016</p>	<p>It has always been acknowledged that there are gaps in the data and these have been discussed at length during face to face meetings.</p> <p>These sets have been used to calibrate the recharge calculations / water balance. They are event based not seasonally based.</p>	<p>-</p> <p>We cannot know what was discussed in the various meetings, however the EA have stated “the issue of data ... within the Slade Brook ... has always been an issue” and “... it is far from an ideal situation at this stage”.</p> <p>EA: “these types of inconsistencies bring the assessment into question with obvious issues such as these in the report”.</p>
<p>Pipe Hydraulics/Mannings Analysis</p> <p>All flows below 150mm should be disregarded</p> <p>RPS report pipe full conditions</p>	<p>The flows represented by heads below 150mm form a very small percentage of the data and do not materially affect the analysis.</p> <p>RPS refer to the pipe surcharging and the top pipe flowing. The Envireau Water analysis shows that this will happen, but due to the hydraulic jump that the pipe will not be full at the sensor.</p>	<p>-</p> <p>We are not qualified to comment on technical matters but rely 100% on the views of the EA rather than those of the applicant or his agents.</p>

<p>Field CO2 data collection</p> <p>The analysis provided cannot be fully accepted until more data is collected to substantiate the conclusions made</p>	<p>It is accepted that the CO2 survey is very limited. We make this clear in the report and as agreed by the EA little weight should be put on the results.</p>	<p>Field CO2 surveying should will be brought into the Epikarst Monitoring.</p> <p>Wider CO2 monitoring is not considered necessary, as the processes are well understood.</p> <p>EA: "Too few data exists to make any meaningful interpretation for restored soils nor ancient woodland soils in our opinion at present". We rely on the EA's view.</p>
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Comment	Response	Proposal/ Newland Parish Council comments
<p>Groundwater Hydrograph Data</p> <p>It is difficult to make any meaningful interpretation</p> <p>The data does not show a clear seasonal variation</p>	<p>All the groundwater level data has been presented. Groundwater level data collection is ongoing and has improved.</p> <p>Clear seasonal variations are visible.</p>	<p>Groundwater level monitoring should will continue and specific water level monitoring boreholes selected with the agreement of the MMSG for continuous monitoring. The selection should will be based on good aquifer connectivity and data spread. Monthly data will be used to increase data spread with correlation to logged data.</p> <p>EA: "... interpretation is very difficult to confirm with what would appear to be too many data gaps and suspect data points". "This interpretation is clearly erroneous". "... it is difficult to make any meaningful interpretation". "It has been mentioned that this data set shows a clear seasonal variation ... which is clearly not the case..."</p>
<p>Flow Duration Approach</p> <p>Bias toward lower flows</p>	<p>It is accepted that there may be a bias toward lower flows. However, the data within the FDC represents all available data. The error in the catchment area has been allowed for in our error band. Precise catchment area definition is not possible or necessary</p>	<p>No simple flow measurement method will capture all flows with accuracy.</p> <p>Flow data will continue to be collected and reviewed. If and when necessary, equipment can be replaced.</p> <p>Regular maintenance will improve data collection.</p> <p>EA: "As there are no flow data in the 10 year period for the wettest April, second wettest June and wettest July, the curve may be more biased ... if more of the higher flows are missing". The EA is clearly querying why the applicant has omitted data which could work against his case.</p>

<p>Catchment Area determination</p> <p>Fast flow / slow separation</p> <p>Impact should conduit exists below extension area</p>	<p>The fast / slow separation is described within the context of the conceptualisation of the karst system. They represent two ends of the karst continuum. Despite “struggling to understand” the EA repeatedly refer to the process in their response.</p> <p>There is always a risk that a conduit exists below the quarry and the extension area. None have been identified to date, other than those that have been mapped. The risks associated with a conduit are well known.</p>	<p>An agreed Karst Conduit Protection Scheme will describe the mitigation methods to be implemented if a conduit is uncovered. It will cover (but not be limited to); appreciation of the size of the conduit, stand-off & protection; notification of the MMSG; treatment.</p> <p>EA: “The report by Hydrogeo Ltd on behalf of Newland and St Briavels Parish Councils provided information on geophysics undertaken on the site. This identified some positive / negative magnetic responses which may indicate more natural areas of geological interest”. “Envireau Water (acting on behalf of the applicant) consider ... that there is no evidence that suggests buried enclosed depressions – that does not infer that such features do or may exist”.</p>
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Comment	Response	Proposal / Newland Parish Council comments
<p>Potential fast flow karstic solutional features</p> <p>Include >5cm features into the protocol</p> <p>Have features been encountered historically</p> <p>Improve the protocol</p>	<p>Yes</p> <p>No, other than those that have been mapped.</p> <p>Yes</p>	<p>An agreed Karst Conduit Protocol will describe the mitigation methods to be implemented if a conduit is uncovered. It will cover (but not be limited to); appreciation of the size of the conduit, stand-off & protection; notification of the MMSG; treatment.</p> <p>EA: “The report by Hydrogeo Ltd on behalf of Newland and St Briavels Parish Councils provided information on geophysics undertaken on the site. This identified some positive / negative magnetic responses which may indicate more natural areas of geological interest”. “Envireau Water (acting on behalf of the applicant) consider ... that there is no evidence that suggests buried enclosed depressions – that does not infer that such features do or may exist”.</p>
<p>Working Depth (Extraction/Hydrology)</p> <p><i>Proposal to work to 170mAOD</i></p> <p>Measured groundwater level >170mAOD & therefore quarrying to 170mAOD not appropriate.</p> <p>The base of the limestone is c.160mAOD. Is sufficient limestone being left?</p> <p>Climate change issues.</p>	<p>It is accepted that groundwater level data collected in April 2018 shows levels that exceed 170mAOD</p> <p>Climate change is a long term issue. Operations at the site are short term. Within the context of restoration, final levels can take account of peak water groundwater levels. Data collected shows that peak water levels are over a small area and are of short duration.</p>	<p>Our earlier responses highlighted that fact that the quarry floor would be unacceptably close to the water table; this is now confirmed by the EA who state “This is an area we have some of the most concerns over .. as the groundwater table data clearly indicates that the proposed final quarry floor depth will intercept the groundwater table now that rainfall data from March and April 2018 have been included.</p> <p>This omission must surely raise questions over the integrity of the application when crucial data is deliberately excluded.</p> <p>The applicant’s comments (see left) that operations at the site</p>

		<p>are short term do not tell the whole truth; physical activity may well be short term but there will be very long term effects.</p> <p>A map showing isopachs of the limestone thickness below the extension and existing quarry will be submitted, together with an interpretation of the significance of limestone thickness.</p>
<p><i>Operationally working to benches</i></p> <p>The details of working benches to 176m and 170mAOD has not been explained.</p>	<p>Bench heights are fixed by H&S / stability issues and the need to have a relatively flat quarry floor. It is common practice to have development restrictions based on planned bench levels.</p>	<p>An agreed working depth condition requiring agreement to quarry below 176mAOD.</p> <p>This suggestion is unacceptable – the quarry floor must be no lower than 176m AOD, this is supported by the EA: “It is our view that the working depth proposed carries too high a risk...”</p> <p>THE PRECAUTIONARY PRICIPLE MUST APPLY</p>

Comment	Response	Proposal
<p>Restoration (notably Epikarst Recreation)</p> <p>Relatively unproven technique</p> <p>Lack of detail</p> <p>Reference to “dust”</p> <p>Placement control</p> <p>Evidence of effectiveness</p> <p>Epikarst restoration trials</p> <p>Materials balance</p> <p>Further materials testing</p>	<p>It is recognised that epikarst recreation is unproven. However, a scheme has been agreed for the existing quarry, which is also unproven, that was not a barrier.</p> <p>We have discussed “dust” at length in face to face meetings. Dust in this context is a quarrying term which refers to material that is <5mm in size. It does include material that is <1mm. The issues associated with dust are recognised. However, its incorporation will increase the reactive surface area.</p> <p>The extreme south west corner of the quarry has been restored as per the Agreement. SI work has been undertaken to prove that.</p> <p>Restoration trials can be undertaken.</p>	<p>Detail to be provided in a Scheme of Restoration, based on agreed final depth limitations and controls. The document will provide a materials balance, a placement protocol and a monitoring system, including further materials testing.</p> <p>We question why the proposal for restoration suggest an unproven methodology; only tried and tested methods must be used.</p> <p>Restoration trials can will be incorporated into the Scheme of Restoration.</p> <p>Undertake trials with and without “dust”.</p> <p>Provide details of SI work and results.</p> <p>EA: “We need more evidence that epikarst recreation will indeed be effective and work as intended ... we are still not convince this technique will work in practice.”</p> <p>The EA raises a very interesting point over the restoration programme; the extant permission granted in 2007 requires a programme of restoration but this has not been adhered to. Had it been, the applicant would have possibly been able to provide evidence that the proposed system of restoration would be effective and acceptable. As the applicant has not conformed to the existing conditions he is unable to demonstrate this.</p>

<p>Monitoring Proposals</p> <p><i>Groundwater</i></p> <p>Lack of baseline data</p> <p>Choice of Core Monitoring boreholes</p> <p><i>Soil CO2 & Epikarst Recreation</i></p> <p>CO2 monitoring</p> <p>Infiltration testing</p>	<p>We disagree that there is a lack of baseline data. The data covers dry periods and wet periods, is ongoing and shows different response classes.</p>	<p>The choice of Core Monitoring boreholes can will be agreed and indeed varied by the MMSG as data is reviewed.</p> <p>CO2 and water chemistry monitoring is an important part of the Scheme of Restoration.</p> <p>Infiltration testing can will be incorporated into restoration placement monitoring and/or epikarst trials.</p>
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Comment	Response	Proposal
<p>Analysis Of Monitoring Data</p> <p>Trigger level definition</p> <p>Baseline data set</p> <p>Reliability of trigger level</p> <p>Slade Brook chemistry</p> <p>Groundwater chemistry</p>	<p>Trigger levels can be set on the baseline data that is available. Where there is less certainty in the baseline data then the trigger levels need to be more conservative. Trigger levels can be reviewed by the MMSG and adapted.</p>	<p>The detail of the scheme of monitoring, measured parameters, measurement frequency and trigger levels will be presented in a detailed Scheme of Monitoring and agreed in a new Section 106 Agreement.</p> <p>The EA makes comments about how “changes in data trends will be measured, confirmed, and acted upon before any changes are observed in Slade Brook, or what method will be used to mitigate against and reported to the regulatory authorities, including a plan of action invoked from such an event.” We rely on the EA to be satisfied on these points.</p>
<p>Access Road Around Orles Wood</p> <p>Confirmation of existence of fast flow features</p>	<p>The access road is a farm access / drive. It poses no greater risk than any other farm track in the catchment.</p>	<p>An agreed protocol and Karst Feature Management plan will be agreed as part of the track construction, this will follow the Karst Conduit Protection Scheme and include permanent protection with respect to the track sub-base and drainage under and off the track. E.g. drainage of the track will be directed to safe soakaway areas away from any conduit features exposed in the construction.</p> <p>EA: “Hydrogeo Ltd in their report to Newland and St Briavels Parish Councils raise important issue regarding usage of this access road and the proximity of suspected dolines / sinkhole features”. The EA also expresses concerns over “issues of drainage / run off / water quality entering the Slade Brook from the access road. They ask why the fast flow features have not been considered and they seek clarity to confirm if these features exist and why they have not been included”</p>

<p>Cumulative Impact</p> <p>Disjointed data means that it is not possible to be fully confident that there has been no change in the discharge regime</p> <p>Little progress on restoration</p> <p>Not considered in enough detail</p>	<p>These points are comments, rather than specific objections and have been addressed in the ES Chapter 10, Section 10.7. Further detail is provided in the Additional Environmental Information Report” dated 19th December 2018 Section 2 Risk Context.</p> <p>No proposed developments in planning have been identified within the surrounding area which could impact upon either groundwater quality or quantity and thus potentially affect the Slade Brook. Therefore, the proposed extension is not anticipated to result in cumulative impacts in combination with other developments.</p>	<p>-</p> <p>EA: “It is accepted that the Slade Brook monitoring data has not necessarily indicated any noticeable issues to date upon the tufa despite a significant volume of limestone already being removed by quarrying. However, this is not to say that in the future during the extension phase this will not be the case.” “Cumulative impacts could be more significant in the future.” “Just because something is deemed to be fine now may not be true in the future...”</p> <p>The applicant’s statement (left) that “the proposed extension is not anticipated to result in cumulative impacts in combination with other developments” is unacceptable and unfounded.</p> <p>THE PRECAUTIONARY PRINCIPLE MUST APPLY</p>
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Comment	Response	Proposal / Newland Parish Council comments
<p>Link limestone removal to restoration area</p> <p>Existing quarry ignored in the cumulative impact assessment</p> <p>Hydrogeological conceptual model X section showing both quarries</p> <p>Existing and extension area in slow flow catchment > 4.5%</p>	<p>The risk assessment that has been undertaken; which is based on a small extension, improved restoration, improved monitoring and data feedback to positively vary the restoration; is appropriately cognizant of the risks involved but also acknowledges the correct low risk baseline, based on the history of the site and the field evidence that has been collected.</p>	
<p>Site Drainage</p> <p>Clarification on flow routes between restoration pond, Still Water Lagoon and sinkhole</p>	<p>-</p>	<p>All surface water management will be outlined within the Pollution Prevention and Control Scheme.</p> <p>We rely on the EA to be satisfied on this issue.</p>

Response to points raised by Natural England

Comment	Response	Proposal / Newland Parish Council comments
Restoration		
Restoration is currently untested, especially as, to our knowledge, the existing quarry has not yet been restored despite the extant planning conditions which apply to it.	<p>SI work has been undertaken to show what the restoration material is in the south west corner of the site. This meets with the requirements of the agreement. Materials placed in Phase 1 of the existing quarry meet the restoration requirements.</p> <p>Restoration has been ongoing and no affects have been observed in the monitoring data sets.</p>	<p>-</p> <p>** The EA raises a very interesting point over the restoration programme; the extant permission granted in 2007 requires a programme of restoration but this has not been adhered to. Had it been, the applicant would have possibly been able to provide evidence that the proposed system of restoration would be effective and acceptable. As the applicant has not conformed to the existing conditions, he is unable to demonstrate this.</p>
Not clear whether there is sufficient indigenous materials available to restore both the existing and proposed quarry areas as proposed.	Materials balances have been undertaken and summary details provided.	A Restoration Scheme document will be produced laying out the restoration materials volumes and placement plan. This can be agreed as a pre-commencement condition.
Timescales for the restoration are unclear	-	A Restoration Scheme document will be produced laying out the restoration timescales. This can be agreed as a pre-commencement condition.
Lack of evidence for the effectiveness of the proposed restoration methodology - risk of impact to Slade Brook SSSI.	The existing Section 106 agreement gives details of an epikarst restoration scheme which was considered acceptable at the time. That must be considered the minimum. Restoration to re-produce epikarst functioning is a novel technique. The restoration to date coupled with the baseline data suggests that there is currently no impact.	<p>The restoration Scheme will incorporate as a minimum:</p> <ul style="list-style-type: none"> • Restoration profile monitoring • Learnings feedback via the MMSG • Restoration adjustments based on learnings <p>See comment above**</p>

Working Depth (Extraction/Hydrology)		
<p>Given the evidence of recent rainfall data (April 2018) there may be no unsaturated zone at times of higher rainfall, and the depth of limestone remaining will be less than in the existing quarry. This means that the starting conditions for restoration using epikarst recreation techniques will be different, with less material available to enable the appropriate hydrogeochemical conditions to develop to support tufa formation in Slade Brook.</p>	<p>High rainfall experienced in April / May 2018 demonstrated that groundwater levels can reach an elevation > 172mAOD. At this level a quarry depth of 170mAOD would flood. The data also shows that groundwater levels quickly recess. The high groundwater levels do affect the whole quarry area and the base of the quarry would drain in areas where an unsaturated zone exists.</p>	<p>A depth restriction condition can be agreed limiting development to 1 bench, until agreement is reached with the MMSG/MPA. This agreement would be dependent on review and analysis of groundwater level and rainfall data.</p> <p>The suggestion of a lower level of 172mAOD is unacceptable – the quarry floor must be no lower than 176m AOD, this is supported by the EA: “It is our view that the working depth [at 170mAOD] proposed carries too high a risk...”</p> <p>THE PRECAUTIONARY PRINCIPLE MUST APPLY</p>

Groundwater monitoring data does not currently support working to 170mAOD in the proposed extension, given the high water levels recorded in April 2018	See above	See above
Extension is in the proximity of at least one known direct link to Slade Brook, Longley Farm sink, so the potential for hydrological connections cannot be ignored.	Hydrological (karst) connections to the Slade Brook have not been ignored. Indeed, the majority of the HIA is focussed on understanding and assessing this risk. However, there is no evidence that the extension will intersect significant conduit structures.	A Karst Conduit Protection Scheme will be agreed, which will detail as a minimum, working practices and notifications that will be put in place to protect conduit structures, prevent contamination risks and maintain appropriate fast flow connectivity. Despite there being (left) “no evidence that the extension will intersect significant conduit structures”, that does not mean that it will not. THE PRECUATIONARY PRINCIPLE MUST APPLY
Monitoring		
Alternative data logger locations may be preferred	A scheme of monitoring has been proposed and can be tailored to encompass changes suggested by NE. The proposed scheme of monitoring provides considerable betterment over the existing scheme.	Agreement of a scheme of monitoring is a standard pre-commencement condition in a minerals planning permission.
Proposed monitoring of quarry lagoons/ ponds may not be appropriate	Changes to monitoring of the lagoons are straightforward. The lagoon water levels have never been monitored in the past, thus the proposed scheme provides considerable betterment.	-
Concerns with Slade Brook monitoring i.e. historical faulty equipment	The historical data sets have been discussed at length and in detail in face to face meetings and Appendix 1 of Chapter 10 goes into to great analytical detail to verify that the total data set can be used for the purpose. At the meeting in February 2018 there was general acceptance that the data sets could be used.	It is proposed that the MMSG is strengthened and that monthly exception reports are submitted following data collection visits which would highlight values which exceed trigger levels or appear to anomalous to the remaining data set. We rely on the EA to be satisfied on these points.

Comment	Response	Proposal
No analysis has been provided of the April 2018 rainfall, should be possible to with Park End dataset	Monitoring is ongoing and monthly data collation has been continuing through 2018. A data review report covering the 2018 data will be produced early in 2019.	The 2018 data review report be submitted to the MMSG as early as possible in 2019. Daily rainfall statistics in Clearwell are attached for April 2018 and are available for any other period since 2003
Ecology		
Biological features of significance in the SSSI, hydrological characteristics and hydrochemistry should be taken into account	<p>This is a new request and has not been specifically requested prior to or during the detailed technical discussions held with the Environment Agency and more specifically Natural England. Natural England as the statutory consultee responsible for ecology has not raised this issue.</p> <p>The impacts on water flow and quality have been covered by the HIA (ES Chapter 10) in depth. The quarry development (with mitigation in place) will not impact on either flows or quality. On that basis there will be no impact on downstream ecology. While the species etc mentioned in the EA response are not explicitly mentioned in the HIA, it is implicit in the assessment that they will not be impacted upon.</p>	<p>-</p> <p>We trust the EA and / or NE will insist on this additional information being supplied.</p>